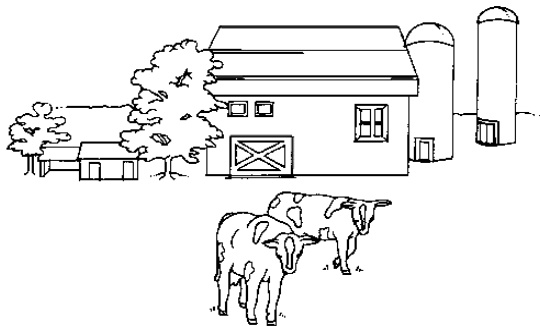
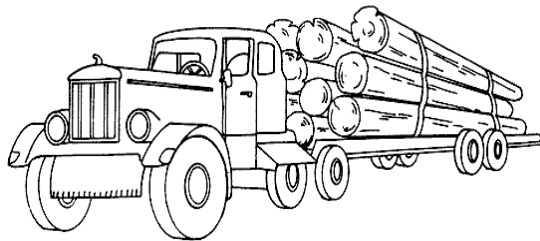
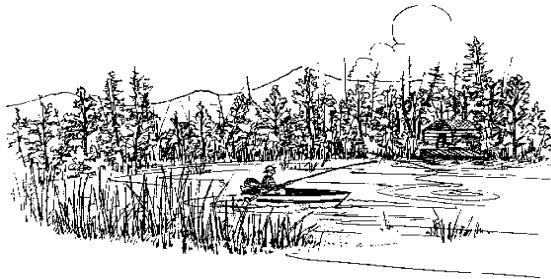


The *New* Watershed Source Book

A Directory and Review of Watershed Initiatives in the
Western United States



Natural Resources Law Center
University of Colorado
School of Law



Douglas S. Kenney
Sean T. McAllister
William H. Caile
Jason S. Peckham

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April, 2000

The Natural Resources Law Center is a non-profit research and educational organization committed to improving the governance and management of water and land resources in the western United States.

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Preface and Acknowledgements

This study builds upon a vast body of research conducted over two decades at the Natural Resources Law Center. The Center's research and educational activities pertaining to western water resources include well over a dozen major conferences and approximately 50 publications, including the following books: *Tradition, Innovation and Conflict: Perspectives on Colorado Water Law* (MacDonnell, 1986), *Water and the American West* (Getches, 1988), *Instream Flow Protection in the West* (MacDonnell et al., 1989), *Controlling Water Use: The Unfinished Agenda of Water Quality Protection* (Getches et al., 1991), and *Searching Out the Headwaters* (Bates et al., 1993). Among the issues most commonly addressed in these investigations have been federal water development and management, modifications to state prior appropriation doctrines to address environmental issues, water marketing, and new trends in water law, policy, and administration. The Center has also served in an advisory role on dozens of water issues, including recent work for the U.S. Bureau of Reclamation, the CALFED Bay-Delta Project, and the Western Water Policy Review Advisory Commission.

In recent years, the water agenda of the Center has been shaped by the emergence of the so-called "western watersheds movement." Understanding that movement, and the relationship of the movement to other water and natural resources issues, is currently a major area of emphasis. Among the most relevant publications exploring these themes are *The Watershed Source Book* (NRLC, 1996), *Resource Management at the Watershed Level* (Kenney, 1997), *Restoring the Waters* (NRLC, 1997), *The State Role in Western Watershed Initiatives* (NRLC, 1998), *Historical and Sociopolitical Context of the Western Watersheds Movement* (Kenney, 1999a), and *Arguing About Consensus* (Kenney, 2000). In various ways, each of these efforts has contributed to *The New Watershed Source Book* ("Source Book"), which is as much a compilation of acquired data and knowledge as it is new research. But more than providing an opportunity for the Center to revisit past investigations, the revision of the *Source Book* has been a seed upon which many recent and ongoing investigations have been integrated. True to the spirit of a document called a "Source Book," this report is the Center's best attempt at one-stop-shopping for all your western watershed related needs. We sincerely hope that it proves as useful and influential as the original version.

Given this history, it is difficult to fully capture the range of individuals and organizations that deserve acknowledgement for this work. Although I have overseen the project through its two year history, the genesis of this work can also be traced to the insights of Betsy Rieke, former Director of the Center, and my current colleagues at the Center: Kathryn Mutz, Gary Bryner, David Getches, Charles Wilkinson, and Jim Corbridge. Our collaboration with Mike Hart in this project has also been particularly useful. Much of the legwork for the project was accomplished by law students, including Jason Peckham, Dave Turner, Bill Caile, and Courtney Hill. Intern Christine Hurley also made valuable contributions. Another student, Sean McAllister, remained with the project even after graduation, helping to turn several file cabinets of raw data into a coherent draft. Of course, those cabinets first began to fill during research on the original *Source Book*, another multiyear Center project employing a different team of professional and student researchers. Much of the leadership for that effort came from Larry MacDonnell and Teresa Rice, former Director and Associate Director, respectively, of the Center. The contributions of former Research Associate, Sarah Van de Wetering, were also

significant. Maps for this and the original version of the *Source Book* were skillfully crafted by the University of Colorado cartography lab, currently directed by Jim Robb. All these individuals deserve recognition for helping the Center to establish itself in this area of inquiry.

Of course, the majority of the data and insights found in this report did not originate in the Center, but were culled from the legions of individuals involved with watershed initiatives throughout the West. Many of those parties now tell us that they have been “studied to death,” a somewhat disconcerting thought given that the new *Source Book*, like the original, will undoubtedly be used as a tool for connecting researchers with on-the-ground practitioners. Hopefully, some of the analyses provided in the new *Source Book* will allow those researchers to ask more insightful (and mutually interesting) questions and provide more useful products than in the past, as this new edition is designed to be more than a mere “phone book.” Only if that goal is accomplished will the document justify the time demanded from those practitioners targeted by our steady string of surveys and interview requests.

Others deserving recognition and thanks are those individuals that have supported our investigations focusing on collaborative modes of decision-making, of which the watersheds movement is a prime example. Again, this is a diverse group, but at a minimum includes: Reed Benson, Gail Bingham, Louis Blumberg, Steve Born, Ron Brunner, Guy and Heidi Burgess, Sam Burns, Jo Clark, Hanna Cortner, Ann Dahl, Maxine Dakins, Don Elder, Michael Fife, Robert Frodeman, Karen Hamilton, DeWitt John, Rick Knight, Peter Lavigne, Mark Lubell, Dan Luecke, Roz McClellan, Matt McKinney, Sarah Michaels, Ann Moote, Deborah Paulson, Sari Sommarstrom, Maggie Shannon, Toddi Steelman, Steve Toben, and A. Dan Tarlock. The contributions of my colleague Kathryn Mutz regarding forestry partnerships is particularly appreciated.

Finally, I would be remiss if I did not acknowledge those organizations that provided the funding and faith needed to complete this project. In particular, the General Service Foundation and the U.S. Bureau of Reclamation stepped forward with the critical mass of funding needed to initiate this project. Supplemental contributions from the Hewlett Foundation, Ford Foundation, and U.S. Environmental Protection Agency ensured completion of the work, and have positioned the Center to move forward in this area. While we regrettably anticipate that this is the last edition of the *Source Book* in its current form—the movement has garnered too much speed and size to be manageably tracked in any one publication—there are no shortages of unanswered research questions to explore. Undoubtedly, we will again be soliciting the support of the funding community in addressing those remaining questions. While I will not speculate on the likely success of those requests, it is worth mentioning that we are encouraged by the breadth of foundations, agencies, organizations, and individuals that have made watershed restoration a priority, and who recognize that achieving the goals of the western watersheds movement will require the efforts and expertise of a broad community of concerned parties. We greatly appreciate those parties that have allowed us to be a part of that community.

Doug Kenney, March 2000

Executive Summary

One of the most dramatic and potentially significant changes to the West's institutional landscape has been the recent explosion of watershed initiatives. Also known as watershed partnerships, councils, or groups, these efforts typically involve both resource managers and private stakeholders, organized together at the scale of small watersheds and using consensus-based processes to address a variety of water-related problems. Common points of emphasis include water quality improvement and habitat restoration. Watershed initiatives are a relatively recent phenomenon. The Natural Resources Law Center estimates that the "movement" now includes over 400 watershed initiatives in the West, at least three times the total in 1995. (Dramatically different estimates are possible if the defining criteria are modified.) Due to their potential for moving beyond inflexible, regulatory management approaches, watershed initiatives have broad political support, and receive funding and participation from several natural resource agencies. Particularly active federal participants include the U.S. Environmental Protection Agency, the U.S. Forest Service, and the U.S. Natural Resources Conservation Service. Several western states have programs encouraging and supporting watershed initiatives, with the most ambitious efforts being found in the Pacific Northwest, particularly Oregon.

In this edition of the *Source Book* (the original was published in 1996), a directory of 346 western watershed initiatives is provided. Additionally, concise case studies are provided for 117 of these efforts, based primarily on a watershed survey conducted by the Natural Resources Law Center from 1998-2000. A wide variety of statistical information is provided regarding this set of watershed initiatives, covering issues such as resource problems of interest, breadth of participation, specific goals and activities, funding and related resources, and accomplishments. Results from a second survey are also included, documenting the experiences and impressions of 276 watershed initiative participants in Oregon. A brief review of community-based forestry partnerships is also provided, as these efforts are thought to be close relatives of watershed initiatives. Additional topics covered include the legal framework within which community-based groups operate, and a detailed look at a particularly active western watershed initiative: the Animas River Stakeholders Group.

Perhaps the most obvious finding emerging from these discussions is that the western watersheds movement remains vibrant and extremely diverse. Useful generalizations about structure and function are difficult to uncover, a problem that is magnified considerably as the focus shifts to evaluating performance and effectiveness. While most parties have begun to accept that watershed initiatives must ultimately be judged by how well they resolve on-the-ground resource problems, most efforts are still too young and poorly documented to support sophisticated outcome measures. Where data does exist, it is generally sufficient to encourage optimism and fuel further experimentation and effort. On the other hand, while most parties contacted by the Natural Resources Law Center laud the social benefits of local decision-making and collaboration, and feel convinced that on-the-ground benefits are forthcoming or already emerging, others remain uncomfortable with many features of watershed initiatives. Some areas of concern include potentially inadequate representation of all interests, the subordination of science and national interests to local stakeholder demands, the difficulty of addressing divisive issues through consensus-based process, the high costs of collaborative

exercises, and the lack of independently verified on-the-ground success stories. While the accuracy of these concerns is hard to assess due to data limitations and to the normative (i.e., value-based) content of many issues raised, the importance of these concerns is clearly established.

Until questions of on-the-ground effectiveness can be decisively answered, the Natural Resources Law Center recommends that policy-makers maintain a stance of “guarded optimism.” Policy-makers should continue to support experiments in community-based watershed problem-solving, but should also retain regulatory systems and demand greater documentation and accountability before watershed initiatives are given free rein to control the management of public resources.

Those lamenting the involvement of federal agencies in seemingly local resource management affairs should recognize that, in most regions, the federal agencies remain the primary source of financial resources, technical support, and implementation authority utilized by western watershed initiatives. Given the magnitude of federal lands in the West and the range of “public good” issues addressed through federal environmental legislation, this federal involvement seems appropriate on both philosophical and practical grounds. To the extent that a watershed initiative deals completely with private lands and private issues, then these observations are largely moot. This situation, however, rarely occurs in the West.

Along similar lines, those interests that see watershed initiatives as a potential replacement to the regulatory regimes of the Clean Water Act and Endangered Species Act should realize that these “regulatory hammers” are a common—often essential—stimulus behind watershed initiative formation and activity. It is possible, actually quite likely, that neither the regulatory nor the consensus-based processes can offer the on-the-ground benefits attainable when both processes occur simultaneously. This is shown repeatedly by the cases found in the new *Source Book*.

Chapter 1

The *New Watershed Source Book*: Introduction and Overview

The development, management, and use of water resources in the western United States is a vast area of activity and study, with dimensions transcending engineering and the environmental sciences to include economic, legal, social, and cultural considerations. Within this diverse subject area, the niche of *The Watershed Source Book* is issues of localized resource governance and problem-solving, and more specifically, the use of a relatively new class of arrangement termed herein as the “watershed initiative.” This term, defined below, is generally synonymous with a variety of other terms found in common usage, including “watershed groups,” “watershed councils,” and “watershed partnerships,” or more generally, “collaborative groups.” Since publication of the original edition in 1996, the role of *The Watershed Source Book* has been to document these localized experiments, and to contribute to the dissemination of experience and knowledge.

Information Featured in This Report

In this new version of the *Source Book*, data of two general types are presented. First, the revised *Source Book* continues the tradition of the original publication by featuring concise case studies of watershed initiatives found throughout the West. In contrast to the 76 case studies listed and described in the original edition, this revised edition features listings for 346 case studies, of which 117¹ are featured in case study write-ups. Second, the revised *Source Book* emphasizes the presentation and analysis of data that transcends individual cases, but instead is focused on identifying the qualities and trends most characteristic of watershed initiatives in general. Data of both types are necessary in order to support research addressing the most salient questions in this field. Two philosophically distinct (and potentially incompatible) research questions are most commonly identified: (1) Are watershed initiatives truly effective mechanisms for improving resource governance, management, and problem-solving? (2) What actions can (and presumably should) be taken to improve the performance of watershed initiatives? This revision does not claim to answer either question, but should help inform those debates.

¹ Actually, counting the study of the Animas River Stakeholders Group provided in Chapter 15, the revised *Source Book* contains 118 case studies. All 118 of the case studies are used to tabulate the descriptive statistics presented in Chapter 13.

Selection of Case Studies

Compiling a data set useful in addressing both of these questions, as well as related issues, is extremely difficult. In addition to the formidable administrative burden of gathering and updating information on hundreds of cases, troubling methodological issues arise in the selection of case studies. Given that literally thousands of individuals and hundreds of agencies and organizations are involved in western water management, some criteria must be applied to determine which efforts qualify as “watershed initiatives” and thus deserve inclusion in this inventory. One way to accomplish this is to devise a “working definition” by identifying those qualities most commonly ascribed to watershed initiatives in the relevant literatures.² The following definition was produced in that fashion:

Watershed Initiative: A primarily self-directed and locally-focused collection of parties, usually featuring both private and intergovernmental representatives, organized to jointly address water-related issues at the watershed level or a similarly relevant physical scale, normally operating outside of traditional governmental processes or forums, and typically reliant on collaborative mechanisms of group interaction characterized by open debate, creativity in problem and solution definition, consensus decision-making, and voluntary action.

If a definition such as this is utilized to define watershed initiatives, however, then only case studies that fit the definition are identified, and all variants from this model will be systematically excluded from analysis. This significantly limits the value of the data set for researchers who want to know about those efforts that do not fit this presumably common mold. Many parties, for example, question the degree to which all watershed initiatives actually provide broad representation, especially of environmental interests. If only those efforts that satisfy this criterion are included in the database, then not only is the database useless for addressing this issue, it will likely be used to unduly discredit or conceal this potentially accurate concern. On the other hand, without the use of specific criteria, the full range of potential cases can become so overwhelming and diverse as to preclude focus on what is usually acknowledged to be a reasonably distinct class of new arrangements. Many researchers are not interested in hearing about the efforts that do not fall within the standard characterization of these new arrangements. In the minds of these researchers, these efforts are not real watershed initiatives, and as such, should not be confused with or allowed to detract from an examination of the initiatives that fit the standard working definition.

Lacking any perfect solution to this problem, this study has chosen to loosely apply five criteria to identify potential case studies, focusing only on those elements most universally considered to be essential attributes of watershed initiatives. In order to qualify as a western watershed initiative and be included in the *Source Book*, an effort had to “reasonably satisfy” the following criteria:

² Of course, identifying which literatures are “relevant” raises similarly difficult issues. One useful compilation of potentially relevant literature has been recently produced by the Udall Center for Studies in Public Policy, University of Arizona.

- ◆ *Water Focus.* The effort is primarily concerned with a natural resource problem or management issue that prominently involves a water resource.
- ◆ *Regional Focus.* The effort is organized, at least in part, at a geographic scale defined in terms of a particular physical resource of regional interest (preferably a watershed).
- ◆ *Local Role.* The effort features the involvement, in some meaningful way, of local citizens, stakeholders, and/or governments.
- ◆ *Governmental Involvement.* The effort features the involvement of one or more governmental bodies with a role in natural resources management or regulation.
- ◆ *Collaborative Processes.* The effort features cooperative processes of group interaction and/or decision-making.

These criteria describe key elements of scope, participation, and process that, collectively, are normally sufficient to distinguish watershed initiatives from most other activities, including interest group activity, conventional agency planning processes, and other “traditional elements” of water resources governance and management. It is the intent of this research to identify arrangements that are relatively new and distinctive when compared to past practices.

Other, more pragmatic, considerations have been utilized to narrow this range of possibilities down to the final list of case studies. Perhaps most important is a requirement that all watershed initiatives featured in case study write-ups be sufficiently mature, active, and/or organized to allow documentation at a common level of detail. In most situations, these case studies were drafted almost entirely based on data provided by participants completing the “watershed survey.” With only a few exceptions, parties listed in the index of watershed initiatives but not featured in case studies are those that choose not to complete the survey—the majority of efforts.

Also significant was the decision to not include case studies or otherwise mention all natural resource conservation districts (formerly, soil conservation districts) affiliated with the Natural Resources Conservation Service (formerly the Soil Conservation Service). For over half a century, this national system of conservation districts has been, and continues to be, an important mechanism for place-based resource management and problem-solving. In the past decade, it has frequently provided the “institutional seeds” upon which modern watershed initiatives have evolved. Only where this evolution has been observed are case studies provided.

Finally, this document only includes watershed initiatives that lie within the geographic scope of the first *Source Book*, roughly defined as lying west of the 100th meridian and excluding Alaska and Hawaii.³ This specialization simply reflects the interests and expertise of the Natural Resources Law Center; it is not intended to falsely imply that the watershed movement is purely a western phenomenon. All watershed efforts that were identified in a search of the literature and other sources (including Internet⁴ and interview research) that satisfied these

³ This geographic specialization is not rigidly adhered to since some of the basins studied (e.g., the Arkansas and South Platte-Missouri) bisect this boundary. Also, one of the forestry partnerships described in Chapter 12 is located in Hawaii.

⁴ Several web sites provide lists and other information pertaining to western watershed initiatives. While very useful to researchers and practitioners alike, these lists all generally suffer from two weaknesses: inaccurate and

criteria and that were successfully contacted are included in this document. However, it is readily acknowledged that some otherwise qualifying efforts have undoubtedly been overlooked. Given the largely informal and rapidly evolving quality of the watershed initiatives movement, some omissions were unavoidable. Also largely unavoidable are some errors, a problem in part tied to the rapid changes characteristic of many watershed initiatives, and the inability of the Natural Resources Law Center to independently verify information provided by survey respondents.

An effort was also made to identify forestry partnerships (a.k.a., forestry groups). Despite their forest focus, these efforts deserve mention in the *Source Book* since they appear to be close relatives, at least conceptually, to the watershed initiatives, and as such, can be described and analyzed in a similar format. A handful of these partnerships are discussed as part of Chapter 12, using information gathered using a slightly modified form of the watershed survey. Since a critical mass of survey data from forestry partnerships could not be acquired, statistics are not provided and no effort is made to systematically compare these two types of efforts. A largely unexplored potential may exist for the sharing of ideas and experiences between these two types of efforts.

Regional Divisions

One of the obvious challenges in presenting information from multiple case studies is how to group or organize that data. Given that the focus of this investigation is on water management at the scale of watersheds, an obvious mechanism for grouping cases is by river basins. There is, however, some logic to grouping cases by state, as more and more western states have chosen to establish state programs for establishing, recognizing, and/or supporting watershed initiatives. There is also some logic in grouping case studies into regions defined by “management traditions.” For example, the states of the Pacific Coast (Washington, Oregon and California) have a much stronger history of promoting watershed initiatives than do most states in the Interior West. This tradition is particularly rich in the Pacific Northwest, especially Oregon, which features the West’s highest concentration of watershed initiatives.

Despite the potential benefits of these other approaches, the river basin remains a compelling point of organization, in part because linking watershed initiatives to efforts in river basin management remains a largely unmet, and frequently under-appreciated, need. Describing watershed initiatives in the context of larger river basins may help focus attention on this long-ignored issue.⁵ Consequently, organization of watershed initiatives in this report follows the longstanding federal scheme of “water resource regions” which is primarily based on river basins. As shown in Figure 4-1, seven regional divisions are utilized herein:

outdated information, and lack of details. This is primarily a reflection of the rapidly changing nature of watershed initiatives. Addresses for several of the most complete lists are provided in the bibliography.

⁵ In preparing this report, we were consistently amazed by the inability of contact personnel to correctly identify the river basin in which their watershed initiative resides. (We have attempted to correct all the erroneous information of this kind, but some mistakes likely exist in the directory (Chapter 4).) In one case, a watershed initiative spokesman indicated that they “preferred” to be listed in the Great Basin section, even though the initiative is located within the Columbia-North Pacific Region—which is where it was placed.

1. Arkansas-Red-White Region⁶
2. California-South Pacific Region
3. Colorado Region
4. Columbia-North Pacific Region
5. Great Basin Region
6. South-Missouri Platte Region
7. Rio Grande Region

Case Study Presentation

The case studies provided herein all feature an identical structure that is derivative of the organization and design of the watershed survey. In part, this was done to simplify the drafting of case studies, which was done automatically by a computer program that exported survey results into draft case study text. This approach explains why the case studies utilize several lists and feature repetitive language from case to case, as that language reflects the choices provided to respondents in the survey. (The full text of the survey is presented in Appendix A.) While this dramatically reduced the time and budget demands of preparing this document and simplifies cross-case comparisons, it does bring a certain rigidity and awkwardness to the studies that could not be fully removed in editing.

Additionally, the program used to create the case studies listed information in a manner that could potentially be misleading if the writing process is not understood. For example, lists of participants in a watershed initiative begin with federal agency representatives, even if such representatives are not the major players in the effort. Listing participants in order of their involvement or significance entailed a level of detail and correspondence simply not possible given the budgetary constraints on the project. Many potential areas of confusion such as this were remedied during the review and revision of the case studies. Nonetheless, we encourage interested parties to communicate with the contact person listed for more detailed information about any particular case.

Data Analysis and Special Studies

In addition to the “phonebook” of watershed initiative names and contact information and the more detailed case study descriptions, this report also features several discussions of the form, function, and perceived effectiveness of western watershed initiatives. Some of these conclusions are based on the descriptive statistics (presented herein in Chapter 13) and case study summaries derived from the watershed surveys. That data is very useful, but must be considered in the proper context to yield meaningful insights. Given the above-mentioned concerns about the selection of case studies, the hesitancy of many watershed initiatives to complete the watershed survey and the associated issue of survey bias, the data gained from the

⁶ Only the Arkansas River component of this basin is considered within the western focus of this report.

surveys is representative only of that (relatively large) sub-set of watershed initiatives that responded to the survey.⁷ The data is also primarily representative of one type of participant: coordinators and/or facilitators. These limitations are not of great concern for the more general, factual questions (e.g., What year was the group formed?), but do limit the usefulness of responses to opinion-based questions (e.g., Is the group effective?).

These limitations of the data are largely offset by the fact that the analyses featured herein are based on much more research and data than what can be gleaned from the survey responses alone. Since the original publication of the *Source Book* in 1996, the Natural Resources Law Center has had an extremely active agenda of watershed initiative research and publications.⁸ It is that full body of research that influences the analyses and conclusions herein. This report also benefits heavily from the insights published by other researchers, many of whom are cited throughout this study. One study of particular note is by Mike Hart of Communication Designs, Inc. (Idaho Falls, Idaho), who has recently completed a survey of 276 watershed partnership participants in Oregon. That data and research, herein referred to as the Hart Survey and discussed primarily in Chapters 13 and 14, provides a detailed snapshot of how participants view ongoing watershed management in Oregon. Investigations of watershed initiatives within the Interior West basins (i.e., the Arkansas-Red-White Region, Colorado Region, Great Basin Region, Missouri Region, and Rio Grande Region) are much less common, and are consequently a particular area of focus in the *Source Book* revision and in related publications of the Natural Resources Law Center.

⁷ The issue of survey bias comes into play whenever it is difficult to control or otherwise account for anything less than a 100 percent response rate. The response rate to the survey was approximately 33 percent, which is fairly typical of many survey exercises. Groups choosing not to participate generally cited (when contacted later) a lack of available staff time and/or a desire to stay out of the spotlight. To paraphrase the remarks of one watershed initiative participant in the Arkansas Basin: “If we stick our head up too high, some Sierra Club nut is likely to shoot it off.” While difficult to document, those initiatives that did complete the survey tended to have more staff resources than is probably typical, and probably had more positive results to convey than is typical.

⁸ One of those investigations was the Center’s report to the Western Water Policy Review Advisory Commission (*Resource Management at the Watershed Level*, Kenney 1997), which focused largely on the federal role in western watershed initiatives. The state-level counterpart was the Center’s 1998 report entitled, *The State Role in Western Watershed Initiatives* (NRLC, 1998). Other relevant Center reports include *Restoring the Waters* (NRLC, 1997), *Regional Water Resources Management in the Western United States* (In Kenney, 1997), *Historical and Sociopolitical Context of the Western Watersheds Movement* (Kenney, 1999a), *Are Community-Based Watershed Groups Really Effective?* (Kenney, 1999b), and *The Confluence of a River and a Community* (McAllister, forthcoming). Also since publication of the original *Source Book*, Center personnel have spoken on the subject of western watersheds at a variety of conferences, including those sponsored by the American Water Resources Association (March 15, 1996, and June 1, 1997), Colorado Water Congress (August 1, 1996), River Network (September 21, 1997), Bureau of Reclamation (December 10, 1997), Pinchot Institute (November 14, 1997), Water Education Foundation (May 4, 1998), University of Tennessee (August 24, 1998), Natural Resources Law Center (June 11, 1999), and the California Watershed Council (September 1, 1999). The Center and its staff have also published several works addressing more general issues of community involvement in resources management. Examples include: *Public Participation in Forest Planning* (Mutz, 1998); *Community-based Conservation: Restructuring Institutions to Involve Local Communities in a Meaningful Way* (McAllister, 1999); *Analysis of Institutional Innovation in the Natural Resources and Environmental Realm* (Kenney and Lord, 1999); *Arguing About Consensus* (Kenney, 2000); and *Laws Influencing Community-Based Conservation in Colorado and the American West: A Primer* (NRLC, 2000).

Chapter 2

The Western Watersheds Movement in Context

Introduction

The proliferation of watershed initiatives in recent years has significantly modified the institutional landscape of water management in the West. Equally dramatic as the sheer number of these groups is the rapidity with which they have arisen—almost entirely within the last decade. These observations suggest that we are in the midst of a genuine “movement.” Unlike many political, social or intellectual movements, however, this one appears to lack any single originating event or stimulus. Rather, several factors seem important. Two of the most important factors appear to be (1) the principle of regionalism as a basis for resources management and environmental-human integration, and (2) the growing societal preference for strategies of governance and problem-solving stressing collaborative processes. These are very different influences, with distinct histories and rationales, but both stressing the concept of integration.⁹ The first is largely based on the “integrative” sciences, such as ecology, that are increasingly gaining in status and application. The second is more a reflection of changing social values and mores, and also is reflective of modern trends in federalism and intergovernmental relations. Together, these factors have combined to create an environment conducive to watershed initiatives and similar collaborative groups.

Regionalism

In the biophysical world, water resources are an integrating force permeating our understanding of energy and climatic cycles, the origins and processes of life, and the shaping of landscapes and biomes. In the world of western water law and politics, however, water is often a divisive influence, highlighting differences in values and power, as expressed through allocation rules and the isolation of water from a larger set of relationships and considerations. However, this dichotomy, lamented by the so-called “bioregionalists” (Sale, 1985) among others, is certainly not inevitable or ubiquitous. To the contrary, the demands of controlling water resources are often a powerful stimulus for integration. From the ancient “fluvial” societies of Mesopotamia, Egypt, and China, to modern cities such as Phoenix located adjacent to the elaborate canal systems built centuries earlier by the Hohokam Indians, efforts to coordinate regional water resources development and management not only made explicit the connections between land and water, but played a salient role in stimulating social and political organization (Worster, 1985; Teclaff, 1967). Examples of the potential relationship between water management and

⁹ This chapter draws from material explored in more detail in other Center publications, particularly *Resource Management at the Watershed Level* (Kenney, 1997), *Historical and Sociopolitical Context of the Western Watersheds Movement* (Kenney, 1999a), *Analysis of Institutional Innovation in the Natural Resources and Environmental Realm* (Kenney and Lord, 1999), and *Arguing About Consensus* (Kenney, 2000).

social organization can also be distilled from early U.S. history. Disputes over shared regional water resources are occasionally cited as a contributing stimulus behind the Constitutional Convention, and more directly, behind later court cases leading to major developments in constitutional law—particularly those dealing with the commerce clause (Fox, 1964; Shallat, 1992).

The United States, however, is not a nation easily equipped to pursue integrated regional water resources management, a fact made obvious by even a cursory look at a modern map. The U.S. is a nation of transboundary water resources. Most major river systems are either international, interstate, or a combination thereof. The remaining sub-state basins generally transect county boundaries, administrative regions, and perhaps most fundamentally, both public and private lands. In addition to the fragmenting influence of political boundaries that do not correspond to hydrologic regions, regionally integrated water (and related natural resource) management can also be undermined by agency specialization along narrow functional lines. This is perhaps best evidenced by the historic failure to consider the relationships between land and water, between surface water and groundwater, between water quantity and quality, and more generally, between development and preservation. These failures of interagency coordination are exacerbated by fundamental features of the American political system that fragment government into three major levels (federal, state, and local)¹⁰, three branches (executive, legislative, and judicial), and between the public and private sectors. These largely immutable factors not only discourage an integrated perspective among managers toward water resources, but can also complicate the development of productive working relationships among stakeholders and the resource management community.

The United States has been the site of several notable, although frequently disappointing, experiments in integrated resource development and management (Kenney, 1997). Three eras are particularly noteworthy. The first was the Progressive Conservation Era (circa 1890-1920), in which several administrative initiatives and study commissions advocated a more regional perspective. The dominant philosophy of this era was perhaps best captured in President Theodore Roosevelt's remarks to the Inland Waterways Commission: "Every river system, from its headwaters in the forest to its mouth on the coast, is a single unit and should be treated as such" (Inland Waterways Commission, 1908). Consistent with this idea was the fascination of Progressive Era leaders with multiple-purpose water projects. As Hays (1959:100-101) observed:

The enormous possibilities of basin-wide river development captured the imagination of Newell, Pinchot, Garfield, and other conservation leaders. . . . The multiple-purpose concept required attention to the entire basin as well as to the size and design of reservoirs. . . . The multiple-purpose approach, therefore, brought together federal officials in both land and water agencies in a common venture.

While the use of large "catchment basins" for water resources development was firmly established by the 1920s, the idea of using hydrologic regions for resource governance and administration was not aggressively explored until the Great Depression (circa 1929-1942).

¹⁰ Tribal governments could be considered as a fourth level.

Several committees of that era investigated the merits of more regionally integrated resource development and management, including the President's Committee on Water Flow, the Mississippi Valley Committee of the Public Works Administration, the Water Planning Committee of the National Resources Board, the National Resources Committee, and the National Resources Planning Board (Schad, 1964; Kenney, 1997). The most ambitious organizational experiment arising from this work was establishment of the Tennessee Valley Authority (TVA) in 1933, an independent federal agency established to pursue a broad mandate including navigation, flood control, reforestation, agricultural and industrial development, and national defense.

Contrasting sharply with the highly centralized, formal, authoritative, and "top-down" nature of the TVA approach was the depression-era strategy for watershed-scale integrated resource management. Particularly significant were efforts to better coordinate land and water management activities through establishment of a national system of soil conservation districts in the 1930s and 1940s, followed by the establishment of the "small watersheds program" in the 1950's (NRCS, 1996). As discussed later, this model of public/private partnerships and voluntary coordination pioneered in the soil conservation districts has proven to be among the most popular and innovative features of American natural resources management. In the modern era, these districts—now known as natural resource conservation districts—have frequently provided the template and "institutional seed" upon which modern watershed initiatives have evolved.

The third major era in integrated water resources development and management occurred primarily in the 1960s, and featured the establishment of the Water Resources Council and the so-called Title II Commissions pursuant to the Water Resources Planning Act of 1965 (ACIR, 1972). These Commissions were federal/state river basin partnerships, an important innovation over interagency committees of the previous two decades that were primarily federal in origin, focus, and participation (National Water Commission, 1973). The Title II Commissions, as well as the Water Resources Council, were widely perceived to be ineffective and were terminated without significant protest in the early 1980s, ending the most recent national attempt to bring the logic of integrated resource management to American river basins (Gregg, 1989).

Similar to events in the depression era, one of the most lasting yet largely unheralded innovations of the third era in integrated resource development and management came from localized efforts in improved land/water management (Kenney, 1997). Of particular salience was the development and proliferation of "coordinated resource management" (CRM) processes designed to better link the activities of resource managers and stakeholders in localized problem-solving exercises. In a CRM planning process, participants often from federal, state, and local governments join together with local stakeholders to seek solutions to management issues of common concern, typically concerning transboundary resources such as water. First developed by Soil Conservation Service (SCS) employees in Nevada and Oregon in the 1950s, CRM planning efforts have been widely utilized by several federal land-management agencies—particularly the Soil Conservation Service (now the Natural Resources Conservation Service) and the Bureau of Land Management—and have helped provide a procedural model embraced in the modern watersheds movement.

Collaboration in the Era of Alternative Problem-Solving

Despite the development of the CRM model and the experimentation with river basin institutions, the 1960s-1970s era is most notable for giving birth to a variety of environmental agencies and programs (Rosenbaum, 1991). These innovations reflected a strong national shift in values, sparked largely by growing problems of pollution and resource degradation (and potential exhaustion), and also by growing personal wealth and the rising socioeconomic importance of outdoor recreation and environmental amenities. Largely due to turn-of-the-century problems associated with unregulated resource markets and a growing post-WWII frustration with resource agencies seemingly captured by special interests and outdated pro-development agendas, the preferred tool of the environmental movement was top-down regulatory schemes, buttressed by litigation. Additionally, reforms called for a greater role for concerned citizens in resources management, leading to a variety of “public participation” procedures and open planning processes.

The “traditional tools” of regulation and litigation have produced many notable successes. However, by the 1990s, a strong feeling of discontent with environmental and natural resources management had become evident in the West and elsewhere (Davies and Mazurek, 1997). One of the most frequent complaints was of decision-making “gridlock,” likely the product of increasingly dispersed decision-making power and the seeming lack of decision-making incentives provided by inflexible mandates (WWPRAC, 1998). Also garnering criticisms were command-and-control programs seemingly more concerned with regulatory indicators than more meaningful environmental indicators, the strong emphasis on planning processes without a corresponding commitment to implementation, the failure to adequately monitor programs and resources, and the unfulfilled promise of meaningful public involvement in decision-making. Many of these problems of programmatic inefficiency and poor design are viewed as transcending natural resources management, but rather are typical of all facets of government. This sentiment was aptly captured in the early 1990s by authors such as Howard (1994), who lamented the “death of common sense” in governmental programs, and by Osborne and Gaebler’s (1992) seminal work suggesting a need to “reinvent government”—an idea adopted in 1993 by the National Performance Review (NPR), directed by Vice President Al Gore. Presumably, the NPR (1993:14) is part of an effort to return pragmatism to government, including new approaches to natural resources management:

The traditional approach to managing ecosystems and the resources contained within them has been piecemeal. Responsibility has been fragmented across numerous federal and non-federal agencies and jurisdictions. An improved federal approach to ecosystem management would be based on ecological, not political, boundaries. It would then seek and consider input from all stakeholders affected by federal responsibilities in the area. Within such a framework, federal agencies, state, local, and tribal governments, businesses, public interest groups, citizens, and Congress could work in collaboration to develop specific strategies, refocus current programs and resources, and better ensure the long-term ecological and economic health of the country.

With these words, the NPR has called for the marriage of the regionalism concept to newly evolving concepts of governance associated with the so-called “era of alternative problem-solving” (Kenney and Lord, 1999). In this emerging era, desired reforms are those that feature a strong reliance on positive incentives (i.e., the carrot rather than the stick); partnership arrangements (both intergovernmental and public/private) providing an enhanced decision-making role for local stakeholders; enhanced substantive, geographic, and intergovernmental integration and/or coordination; and a more explicit commitment to *ad hoc* and collaborative decision-making processes based on field-level experimentation and learning. Prominent tools of this era include alternative dispute resolution (ADR) techniques and negotiated rule-making processes, the strategic use of market mechanisms to establish or implement policy, and the use of “collaborative groups” as vehicles for situation-specific exercises in decision-making and, ultimately, problem-solving.

Watershed initiatives are among the most obvious expressions of the community-based environmental protection (CBEP)¹¹ movement, although other examples—particularly community forestry—are also enjoying a newfound popularity. Watershed initiatives are based on a “community/collaborative model” of action that is fundamentally different than many of the “traditional” modes of decision-making, particularly regulatory and litigation-oriented approaches to policy design and implementation (Kenney, 2000). This is a model that even the regulatory agencies are embracing—at least conceptually. For example, while regulation is still the major focus of the Environmental Protection Agency (1996:2), the agency has been a leader in enthusiastically adopting a “watershed approach framework”:

Many public and private organizations are joining forces and creating multi-disciplinary and multi-jurisdictional partnerships to focus on [water quality] problems, community by community and watershed by watershed. These watershed approaches are likely to result in significant restoration, maintenance and protection of water resources in the United States. Supporting them is a high priority for EPA’s national water program.

Many other federal agencies are also active participants in supporting watershed initiatives. The Natural Resources Conservation Service merits particular attention, given the agency’s well established links to the national network of approximately 3,000 conservation districts established nationwide largely in response to Great Depression dust bowl conditions (NRCS, 1996). Major federal land managers (e.g., the Forest Service and Bureau of Land Management) and the Bureau of Reclamation are also among those federal agencies demonstrating a growing commitment to community-based environmental protection. The final report of the Western Water Policy Review Advisory Commission (1998) is also very supportive of the community/collaborative model of watershed-based management, as is the Clean Water Action Plan developed by ten federal interagency workgroups (EPA and USDA, 1998).

As mentioned throughout this report, support for watershed initiatives at the state level in the West is also considerable and growing, especially in the Pacific Northwest (NRLC, 1998;

¹¹ Note that many documents utilize the generally analogous term of community-based environmental management (CBEM) as implemented by community-based collaboratives (CBCs).

WSWC, 1998; Craig, 1999). The situation in Oregon is particularly notable. Beginning in 1987 with establishment of a Governor's Watershed Enhancement Board and buoyed by creation of the Watershed Health Program in 1993, state funding has been provided to assist community-based watershed initiatives throughout Oregon (GWEB, 1999). This effort continues, now under the control of an independent commission known as the Oregon Watershed Enhancement Board. Several other western states have closely watched the Oregon experience, and a few—specifically, Washington, California, and Montana—have experimented with several formal mechanisms for providing state support and coordination to watershed efforts (NRLC, 1998). The watershed approach to water quality management has also been formally embraced in many other western states, including Alaska, Arizona, Utah, Colorado, Idaho, Nevada, Wyoming, and New Mexico.

Providing further state support is an idea with considerable political momentum in the West. This sentiment is easily distilled from statements of the Western Governors' Association (WGA) which call for natural resource and environmental decisions to emerge "through balanced, open and inclusive approaches at the ground level, where interested public and private stakeholders work together to formulate critical issue statements and develop locally based solutions to those issues" (WGA, 1998a).¹² Along similar lines, earlier WGA publications called for the use of policy frameworks "based upon improving the way we establish environmental priorities, creating better price signals, encouraging voluntary initiatives, working within ecosystems, and resolving disputes without litigation" (WGA, 1993:I, remarks of WGA Chairman Fife Symington). The most recent articulation of this philosophy is the so-called doctrine of *Enlibra*, a term coined by the governors to describe an approach to environmental management emphasizing balance and stewardship:

The doctrine speaks to greater participation and collaboration in decision-making, focuses on outcomes rather than just programs, and recognizes the need for a variety of tools beyond regulation that will improve environmental and natural resources management. ... The Governors recognize that to succeed at environmental management people need to be empowered to do the right thing. This requires good information; inclusive processes that respect different values and provide individuals a role in designing and implementing solutions; and meaningful incentives to complement existing laws.¹³

¹² The acceptance of the community/collaborative model from both poles of the liberal-conservative spectrum is highly significant, providing the watersheds movement with considerable support and vibrancy.

¹³ <http://www.westgov.org/Enlibra/>. The *Enlibra* principles were primarily crafted by Governors Leavitt (Utah) and Kitzhaber (Oregon). In addition to encouraging collaborative problem-solving and a greater use of incentive-based management tools, *Enlibra* stresses the need to address problems from a regional perspective guided by good science. Additionally, *Enlibra* recognizes a need for continuing regulatory programs as a balance against processes reliant on voluntary action and incentives.

Conclusion: Resource Management in a New Century

The western watersheds movement is among the first progeny of this marriage of regionalism and alternative problem-solving. The vigor of the movement has undoubtedly been boosted by specific events, such as the endangered species “train wrecks” in the Pacific Northwest (e.g., salmon and spotted owls), and by the controversial infusion of public interest restrictions into private land and water rights. However, the real strength of the movement likely has deeper roots anchored to several unmet desires, including:

- the desire for increased local input in resource management decision-making;
- the desire for decision-making processes that are inclusive and non-adversarial;
- the desire for decision-making focused at practical regional scales (for addressing problems such as nonpoint-source pollution and endangered species recovery);
- the desire for decision-making processes that encourage creative and flexible problem-solving strategies;
- the desire for decision-making that is reasonably quick and low-cost;
- the desire for decision processes that balance science and values; and,
- the desire for decision-making processes that lead to on-the-ground action.

As this great social and administrative experiment continues, it is worthwhile to observe that the marriage of regionalism and a community/collaborative model of governance is not necessarily a new *idea*, even if the application is relatively novel. For example, John Wesley Powell, writing in the late 1800s, foresaw many of the now-familiar problems with western water institutions, including the fragmentation of land and water institutions, and the disempowerment of local stakeholders (Stegner, 1953; Kenney, 1999a). Consequently, his “Grand Plan” called for resource management at “hydrographic” scales:

Such a district of the country is a commonwealth by itself. The people who live therein are interdependent in all their industries. Every man is interested in the conservation and management of the water supply, for all the waters are needed within the district. . . . Thus it is that there is a body of interdependent and unified interests and values, all collected in one hydrographic basin, and all segregated by well-defined boundary lines from the rest of the world. . . . This, then, is the proposition I make: that the entire arid region be organized into natural hydrographic districts, each one to be a commonwealth within itself for the purpose of controlling and using the great values which have been pointed out. . . . The plan is to establish local self-government by hydrographic basins. (Powell, 1890:113-114).

Powell’s plans, of course, were largely ignored in his time, as national policy was to promote individual, rather than community-based, water development and ownership. In the modern era, community involvement (if not control or ownership) is viewed more favorably, although the definition of “community” is proving highly problematic. In Powell’s era, there was no obvious distinction between the “local community” and the “community of interests” associated with a resource, nor was there a mature institutional structure featuring privately allocated water rights alongside of federal (and some state) statutes for pollution control and public resources protection.

The world has grown more complex. The logic of regionalism is still compelling and largely unchallenged, but the selection of appropriate governance principles and implementing strategies remains an open question (Kenney, 2000). For the time being, the stage increasingly belongs to the community/collaborative model, the ideological basis of the western watersheds movement. However, only to the extent that this approach addresses the practical concerns listed above, will the movement continue to thrive in its current incarnation.

Chapter 3

Legal and Administrative Framework Influencing Community-Based Conservation in the West

Introduction

The management of natural resources is the subject of a complex set of laws and administrative rules. Some of the regulations influence the ways in which managers and stakeholders can or cannot interact. An appreciation of these rules, consequently, is useful for stakeholders wishing to influence resource management, and for resource managers concerned with the rights of citizens but cautious about violating rules designed to block undue influence by local special interests in the management of public resources. Given the public/private character of the watershed initiatives described in the *Source Book*, these laws and administrative rules regarding appropriate stakeholder/agency interaction are of real concern. As discussed in Chapter 13, many federal and state natural resource agencies participate in or utilize watershed initiatives and similar efforts. To many resource managers, this is simply viewed as a practical problem-solving tool, and/or as a way to satisfy legislative requirements for stakeholder input into management decisions. In other cases, however, this participation is withheld or is otherwise limited, in part due to concerns about violating the law.

The laws and rules of most salience can vary somewhat from case to case and state to state. However, in the West, the most important rules tend to be those pertaining to federal public land management, federal environmental protection and pollution control programs, and state prior appropriation systems for water allocation. While the federal laws, at least in theory, are uniform in structure and application across the West, variations exist in prior appropriation from state to state. Consequently, the discussion of prior appropriation is highly generalized.

Rather than simply referring to watershed initiatives, this chapter focuses on all efforts in “community-based conservation.” This definition broadens the focus from just watershed initiatives to also include efforts in community forestry, since it is in the community forestry realm where many of the issues raised (e.g., the reach of the Federal Advisory Committee Act) have been most directly addressed.¹⁴

¹⁴ This section is largely excerpted from another publication of the Natural Resources Law Center entitled: *Laws Influencing Community-Based Conservation in Colorado and the American West: A Primer*. This study was authored over a five year period, utilizing the contributions of several Natural Resources Law Center researchers, including David Getches, Teresa Rice, Elizabeth (Betsy) Rieke, and Doug Kenney, as well as a staff of Research Assistants including Dave Turner and David Smith. Outside collaborators have also made valuable contributions, including Dan Smith of the Department of Soils and Plant Science, Colorado State University. Direct financial support for this project was initially provided by the Colorado Water Resources Research Institute, and was indirectly supplemented over time by a host of other contributors to the Center’s watershed research agenda.

Major Laws Governing Decision-Making Processes

Federal Advisory Committee Act (FACA)

Overview

Enacted in 1972, the Federal Advisory Committee Act¹⁵ (FACA) was established primarily to reduce the “wasteful expenditure of public funds for worthless committee meetings and biased proposals.”¹⁶ While this is an honorable goal, FACA has also had the unintended effect of discouraging many efforts in community-based conservation. The act is frequently misunderstood and, not surprisingly, frequently violated. A better understanding of the law, suggests that it need not be a deterrent to community-based conservation.

FACA regulates all “advisory committees” that are “established or utilized” by the President, one or more federal agencies, or by a federal statute or reorganization plan.¹⁷ Under FACA, “advisory committee” is broadly defined as “any committee, board, commission, council, conference, panel, task force, or other similar group.”¹⁸ Although FACA applies equally to those committees that are “established by” and those that are “utilized by” the federal government, the determination of when a group is “utilized” is considerably less clear.

The FACA rules indicate that a group is “utilized” when it is a “committee or other group composed in whole or in part of other than full-time officers or employees of the Federal Government with an established existence outside the agency seeking its advice which the ... agency official(s) adopts, such as through institutional arrangements, as a preferred source from which to obtain advice or recommendations on a specific issue or policy....”¹⁹ Based on this definition there are three requirements that must be satisfied in order for a “utilized” advisory group to come within the mandates of FACA: (1) there must be a committee (i.e., more than one individual), (2) the committee must formulate consensus advice, and (3) the committee's advice must be “utilized” by a federal agency.²⁰

Committees that come within the scope of FACA because they are “established by” or “utilized by” the federal government are subject to a number of requirements. The committee must be chartered by the Administrator of General Services and/or the Director of the Office of Management and Budget in Washington D.C.,²¹ and a federal employee may not participate in

¹⁵ 5 U.S.C.A. app. 2 §§ 1-15 (West Supp. 1996).

¹⁶ *Public Citizen v. United States Dep't of Justice*, 491 U.S. 440, 453 (1989).

¹⁷ 5 U.S.C.A. app. 2 §§ 3(2)(B)-(C) (West Supp. 1996).

¹⁸ 5 U.S.C.A. app. 2 § 3(2).

¹⁹ 41 C.F.R. § 101-6.1003 (1996).

²⁰ 41 C.F.R. § 101-6.1004 (1995).

²¹ 5 U.S.C.A. app. 2 § 9(c).

any advisory committee until a charter has been filed.²² Furthermore, a charter will only be approved if the advisory committee is "essential to the conduct of agency business and in the public interest," and has "fairly balanced membership."²³ The chartering process often takes many months.

A group that is within the scope of FACA is also subject to numerous ongoing procedural requirements, which include, in part, that:

- 1) "[e]ach advisory committee meeting shall be open to the public;"
- 2) "timely notice of each such meeting shall be published in the Federal Register;"
- 3) "[d]etailed minutes of each meeting . . . shall be kept;"
- 4) "[t]here shall be a designated officer or employee of the Federal Government to chair or attend each meeting," and no meeting shall be conducted "in the absence of that officer or employee;" and
- 5) "[a]dvisory committees shall not hold any meetings except at the call of, or with the advance approval of, a designated officer or employee of the Federal Government, . . . with an agenda approved by such officer or employee."²⁴

There are at least five exceptions to FACA. First, FACA does not apply to any committee composed wholly of federal employees.²⁵ Second, FACA does not apply to meetings "held between Federal officials and elected officers of State, local, and tribal governments (or their designated employees with authority to act on their behalf)."²⁶ Third, FACA does not apply to teams appointed to develop or implement recovery plans under the Endangered Species Act.²⁷ Fourth, FACA does not apply to meetings in which only individual, as opposed to consensus, advice is given.²⁸ Fifth, FACA does not "apply to any civic group whose primary function is that of rendering a public service with respect to a Federal program, or any State or local committee . . . established to advise or make recommendations to State or local officials or agencies."²⁹

Application to Community-Based Conservation

Community-based conservation groups have found both benefits and burdens associated with FACA. FACA's benefits may include its requirement for balanced membership and provisions for public participation. However, even though these benefits are theoretically enforceable,

²² 5 U.S.C.A. app. 2 § 9(c).

²³ 41 C.F.R. §§ 101-6.1007(b)(2)(i), (iii).

²⁴ 5 U.S.C.A. app. 2 § 10.

²⁵ 41 C.F.R. § 101-6.1004(a) (1995).

²⁶ Unfunded Mandates Reform Act of 1995 § 204, 2 U.S.C.A. § 1534(b) (West Supp. 1996).

²⁷ Endangered Species Act § 4(f), 16 U.S.C. § 1533(f) (West Supp. 1996).

²⁸ 41 C.F.R. § 101-6.1004(i) (1995).

²⁹ 5 U.S.C.A. app. 2 § 4(c).

they are rarely actually enforced. The burdens of FACA, on the other hand, can be disabling. As a result of the significant time and cost of complying with FACA's procedural requirements, many local collaborative efforts would simply be unable to comply. Moreover, in some ways, FACA is directly contrary to the philosophy of such collaborative efforts. For example, FACA's requirement that a federal employee be appointed the chairperson of the committee, or at least be present at all meetings and approve the agenda, may be contrary to a group's desire to ensure each member has an equal voice.

The determination of whether a group falls within FACA will often depend on a court's interpretation of "utilized." Fortunately for community-based conservation groups, the courts have generally recognized the disabling burdens FACA might place upon the group process. As a result, the courts that have addressed the issue have adopted even more stringent definitions of "utilized" than the FACA rules. For example, one Supreme Court decision interpreted the phrase "utilized by" to mean "organized by, or closely tied to, the Federal Government, and thus enjoying quasi-public status."³⁰ Another court defined "utilized by" to mean, "something along the lines of actual management or control of the advisory committee" by the federal agency.³¹ These strict interpretations allow a community-based conservation group to argue, quite persuasively, that they do not fit the contours of FACA, giving them full control over their own group structure.

If getting around the word "utilized" proves too difficult, a group can also structure its meetings to fall within one of the exceptions discussed above. For example, meetings could be run with the aim of soliciting individual views, rather than formulating consensus advice. Furthermore, meetings in which merely information, instead of advice, is exchanged are not subject to FACA's procedural requirements. However, if care is not taken, meetings that may not initially trigger FACA can easily transform into meetings that violate the statute.

FACA may also be a hurdle even when it does not actually apply. Because FACA is in many respects unclear and often misunderstood, federal agency employees may err on the side of conservatism. As a result, agency representatives, who may be essential to the success of the group, may needlessly refuse to participate in order to avoid a perceived risk of violating FACA. Additionally, even if FACA is not applicable in a given situation, the involvement of federal agency representatives may be discouraged by other rules designed to prevent potential conflicts of interest.³²

³⁰ Public Citizen v. United States Dep't of Justice, 491 U.S. 440, 464 (1989).

³¹ *See, e.g., Washington Legal Found. v. American Bar Ass'n Standing Comm. on Fed. Judiciary*, 17 F.3d. 1446, 1450 (D.C. Cir. 1994).

³² For example, the U.S. Department of Agriculture, Office of Ethics, recently (March, 2000) issued "ten commandments" outlining the acceptable limits of federal participation on "non-Federal boards," a classification that could presumably include watershed initiatives. The requirements are as follows: (1) Participation shall be advisory in nature; (2) Participation shall be uncompensated; (3) The employee shall serve as an agency representative providing agency input or information of a public nature; (4) The employee shall not vote or otherwise take actions that could effect the administrative affairs of the organization; (5) The employee shall not be involved in fund raising or the solicitation of funds; (6) The employee shall not participate in any activities that involve lobbying Congress or the Executive Branch of the Federal Government in support or opposition of pending or proposed legislation or agency policy; (7) The employee shall not represent the interests of the board back to the Federal Government other than in official performance of Federal Government duties; (8) The employee shall not permit the use of his/her Federal title in other than the performance of his/her official duties;

FACA provides no provisions concerning the remedies that are employed to address violations. Although the courts have begun to create such remedies, a party will not be permitted to sue for a remedy unless the party can show that it has been "injured" by a violation of FACA. Therefore, unless the agency actually uses advice that it has obtained in violation of FACA, the violation can not be remedied. This is troubling to certain activist groups, who worry about the effect of "closed door" meetings with federal officials. Unless even representation at the bargaining table occurs, exiled groups are likely to bring a FACA challenge.

Most suits in which a party has shown that it has been "injured" by a violation of FACA have merely resulted in a reprimand of the agency involved. In such cases, the agency is still permitted to use the advice. In at least one case, however, an agency was enjoined from using any advice obtained in violation of FACA.³³

Under these circumstances, it is easy to see why FACA may be violated with regularity. Groups are often faced with a choice between risking a lawsuit as a result of violating FACA and giving up the effectiveness of their efforts. As a result, FACA is often simply disregarded. Understanding FACA, and deciding whether it will serve as a benefit or a burden, may be crucial to the effectiveness of any effort in community-based conservation.

National Environmental Policy Act (NEPA)

Overview

The National Environmental Policy Act of 1969³⁴ (NEPA) is the nation's formal declaration of environmental policy. NEPA affects every major land-use and management decision made by the federal government. Although NEPA may not directly control any decisions made by community-based conservation groups, it has important implications for these efforts, particularly when federal lands are involved.

NEPA "declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations . . . to create and maintain conditions under which man and nature can exist in productive harmony."³⁵ NEPA goes on to list various responsibilities of the federal government to carry out this policy, such as assuring that all Americans have "safe, healthful, productive, and esthetically and culturally pleasing surroundings."³⁶ To achieve this, "[NEPA] makes environmental protection a part of the mandate of every federal agency and department."³⁷

(9) The employee may use Government time, resources and personnel in the accomplishment of advisory service to the board; and (10) Appropriated funds shall not be used for individual membership.

³³ See *Alabama-Tombigbee Rivers Coalition v. Department of Interior*, 846 F.Supp. 1009 (D.D.C. 1994).

³⁴ 42 U.S.C.A. §§ 4321-4370 (West 1994 & Supp. 1996).

³⁵ 42 U.S.C.A. § 4331(a).

³⁶ 42 U.S.C.A. § 4331(b)(2).

³⁷ *Calvert Cliffs Coordinating Comm. v. United States Atomic Energy Comm'n*, 449 F.2d. 1109, 1112 (D.C. Cir. 1971).

NEPA's mandate includes "action-forcing" provisions to ensure that the federal government acts in accordance with the letter and spirit of NEPA.³⁸ To promulgate these provisions, NEPA provided for the creation of the Council on Environmental Quality (CEQ).³⁹ The provisions promulgated by the CEQ are binding regulations that must be followed by every agency in the federal government.⁴⁰ These regulations constitute the framework for the "NEPA process."

The "NEPA process" requires federal agencies to determine what level of investigation is necessary for a proposed action. Unless an agency action is exempted, as in an emergency action,⁴¹ or excluded because it does not "individually or cumulatively have a significant effect on the human environment,"⁴² the agency must generally prepare an Environmental Analysis (EA).⁴³ An EA is an overview of the anticipated environmental effects of the proposed action.⁴⁴ If the EA shows that the proposed action "will not have a significant effect on the human environment," then the agency must prepare a "[f]inding of no significant impact" (FONSI).⁴⁵

However, if the EA shows that the proposed action would significantly affect the quality of the environment, then an "environmental impact statement" (EIS) must be prepared.⁴⁶ In the EIS, the agency must include a "full and fair discussion of significant environmental impacts" from, and reasonable alternatives to, the proposed action.⁴⁷ Although very few projects require going beyond EAs, agencies typically must produce EISs for all major planning processes: e.g., during preparation of a forest plan by the Forest Service or a resource management plans by the Bureau of Land Management.⁴⁸

During the preparation of an EIS, the agency must follow the following procedures:

1. A Notice of Intent (NOI) to undertake the action and an EIS must be published in the Federal Register.⁴⁹
2. The agency must "scope" with other agencies and any interested public in order to identify the significant issues that the EIS should address. The scoping process includes the lead agency inviting "the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds)."⁵⁰

³⁸ See 42 U.S.C.A. § 4332.

³⁹ See, e.g., 42 U.S.C.A. § 4321.

⁴⁰ See 40 C.F.R. 1500-1508 (1995).

⁴¹ 40 C.F.R. § 1506.11.

⁴² 40 C.F.R. § 1508.4.

⁴³ 40 C.F.R. § 1501.3-.4.

⁴⁴ 40 C.F.R. § 1508.9.

⁴⁵ 40 C.F.R. § 1508.13.

⁴⁶ 40 C.F.R. § 1502.3.

⁴⁷ 40 C.F.R. § 1502.1.

⁴⁸ 36 C.F.R. § 219.10(b) (1995); 43 C.F.R. § 1601.0-6 (1995). Forest plans and resource management plans are discussed later in this report.

⁴⁹ 40 C.F.R. § 1501.7.

⁵⁰ 40 C.F.R. § 1501.7.

3. When a draft EIS is complete, the lead agency must invite comments on the draft.⁵¹
4. The agency circulating the EIS must then respond to any comments it receives.⁵²
5. A final EIS must be produced.⁵³
6. Finally, the decision-maker must sign a Record of Decision (ROD) that identifies all considered alternatives, analyzes them for environmental preference, and discusses factors used by the agency to choose its final course of action.⁵⁴

Application to Community-Based Conservation

Since NEPA is intended to govern federal actions, it is important to examine how the major federal land management agencies implement NEPA's directives and how local stakeholders can influence their decisions by participating in the NEPA process. Agencies are required to "[m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures."⁵⁵ The EIS procedures listed above are an example of the minimum effort that an agency must make to include local stakeholders.

Beyond these minimums, however, an area manager or forest supervisor does not have to do very much to involve the public or address their concerns. The paradigm of an agency conceiving a plan and then allowing public comment on it does not guarantee that local interests will actually be represented by the plan. As a result, some local stakeholders have complained that their role is merely advisory even though they are the persons directly affected by the decision. Accordingly, it may be important to remember that the agency retains the ultimate decision-making authority and may have priorities with which the local community does not agree. Another factor to remember is that an agency cannot hope to please all of the wildly differing viewpoints that a given "public" will express, and may come up with a compromise that pleases no interest. Nonetheless, most agency field personnel do seem to make an effort to involve and notify the public, and to address their concerns.

If the local federal agency is cooperative, a community-based conservation group can use the NEPA process to its advantage. Perhaps the greatest opportunity for stakeholders to have a significant impact in the NEPA process is during the scoping phase of EIS preparation. For example, although scoping is generally only required before beginning an EIS,⁵⁶ the Forest Service has broadened the scoping requirement to include all of their proposed actions.⁵⁷

⁵¹ 40 C.F.R. § 1503.1.

⁵² 40 C.F.R. § 1503.4.

⁵³ 40 C.F.R. § 1506.10(b).

⁵⁴ 40 C.F.R. § 1505.2.

⁵⁵ 40 C.F.R. § 1506.6(a).

⁵⁶ 40 C.F.R. § 1501.7.

⁵⁷ United States Forest Service Handbook § 1909.15.11 (1992) (hereafter "Forest Service Handbook").

NEPA also provides for public participation by allowing for comment upon the various versions of a particular EIS.⁵⁸ Although the manuals and personnel at both the Forest Service and Bureau of Land Management state that they respond to comments at all times during the NEPA process, they are only required to solicit comments following publication of a draft EIS.⁵⁹ In addition to seeking comments from other affected federal agencies, the lead agency producing the document must "[r]equest comments from the public, affirmatively soliciting comments from those persons or organizations who may be interested or affected."⁶⁰ Accordingly, the Forest Service must provide notice of publication of the draft report in the Federal Register, in press releases, in copies sent to persons on a mailing list, and at public meetings/hearings.⁶¹ In the case of an EIS, the agencies' responses to the comments must either result in a modification of the EIS or an explanation of why the comment does "not warrant further agency response."⁶²

Choices and attitudes at the agencies' local level seem to be the most significant variable in gauging the level of input that a community-based conservation group can have in affecting NEPA decisions. However, if agency personnel refuse to involve the public or make project implementation decisions that seem contrary to NEPA's purpose, a group can appeal for administrative review.⁶³ If the appeal is denied, the appellant may be able to bring a civil lawsuit. For example, FONSI's have been overturned by courts because they contained insufficient evidence to support their findings.⁶⁴

An agency's actions are usually safe from judicial review so long as they have complied with NEPA's procedural requirements; "NEPA merely prohibits uninformed - rather than unwise - agency action."⁶⁵ Additionally, a community-based conservation group generally cannot bring a lawsuit unless it can show that the agency action did or will cause them to suffer some recognizable injury that a lawsuit could remedy. This alternative is not only risky, it is also very expensive.

Although NEPA is primarily a procedural tool for requiring environmental consideration in making certain federal decisions, it can nonetheless be a powerful tool for community-based conservation efforts. Stakeholder groups can use NEPA to force federal agencies to at least consider the impact of its proposed activities on the local watershed, as well as to provide for notice and some degree of participation.

⁵⁸ 40 C.F.R. § 1503.1-.4.

⁵⁹ 40 C.F.R. § 1503.1.

⁶⁰ 40 C.F.R. § 1503.1(a)(4).

⁶¹ FS Handbook § 1909.15.11.52.

⁶² 40 C.F.R. § 1503.4.

⁶³ See 36 C.F.R. § 215.11-.20 (FS provisions); 43 C.F.R. §§ 4.400-.478 (BLM provisions).

⁶⁴ See, e.g., Van de Kamp v. Marsh, 687 F.Supp 495 (N.D. Cal. 1988).

⁶⁵ Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 351 (1989).

Major Laws Governing Public Lands Planning and Management

National Forest Management Act (NFMA)

Overview

The National Forest Management Act of 1976⁶⁶ (NFMA) codifies the planning and land-use structure for U.S. Forest Service lands. NFMA states that forest management should be "designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans."⁶⁷ Multiple use sustained yield management includes "managing the various renewable surface resources . . . so that they are utilized in the combination that will best meet the needs of the American people; . . . and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land."⁶⁸

Accordingly, the Forest Service is required to formulate "national, regional, and forest" management plans.⁶⁹ The creation of the Forest Plan, also called "land and resource management plans"⁷⁰ (LRMP's), is the most important planning level from the standpoint of local communities and public land users. Once a Forest Plan is in place, all future actions must be consistent with the plan.⁷¹ Therefore, it is crucial that local stakeholders influence the development of the Forest Plan in order to effectively impact later actions.

Application to Community-Based Conservation

NFMA requires the Forest Service to give "the public adequate notice and an opportunity to comment upon the formulation of standards, criteria, and guidelines applicable to Forest Service programs."⁷² In developing, reviewing, or revising a Forest Plan, the Forest Service must cooperate with local, state, and other federal agencies, as well as "provide for public participation," including, but not limited to, holding public meetings "or comparable processes."⁷³ As a result, the Forest Service must not only publish notice of a proposed Forest Plan in the Federal Register but must also "publish notice . . . in a newspaper of general circulation" and notify "any person who has requested notice."⁷⁴ To comply with these requirements, the Forest Service prepares public participation plans.⁷⁵

⁶⁶ 16 U.S.C.A. §§ 1600-14 (West 1985 & Supp. 1996).

⁶⁷ 16 U.S.C.A. § 1601(d)(1).

⁶⁸ Multiple-Use Sustained-Yield Act of 1960 § 4, 16 U.S.C.A. § 531 (West 1985).

⁶⁹ 36 C.F.R. § 219.4 (1995).

⁷⁰ 16 U.S.C.A. § 1604.

⁷¹ 16 U.S.C.A. § 1604(i).

⁷² 16 U.S.C.A. § 1612(a).

⁷³ 16 U.S.C.A. §§ 1604(a), (b), (d).

⁷⁴ 36 C.F.R. §§ 215.5(a)-(b).

⁷⁵ Forest Service Manual § 1609.13.

The interdisciplinary team assigned to prepare a Forest Plan also must identify the issues requiring discussion. The Forest Service accomplishes this through a process similar to NEPA scoping.⁷⁶ This process should include "those [issues] identified throughout the planning process during public participation activities" and suggestions from other agencies and governments.⁷⁷ The opportunities for public involvement at later planning stages generally mirror the comment processes following various NEPA actions.

There has been widespread dissatisfaction with the rather restricted role for community-based conservation efforts in the management of the national forests. Some see the Forest Service as merely going through the motions regarding public participation, and there have been several studies calling for an increased role for public participation.⁷⁸ The problem facing reformers, however, is trying to balance the public role with the private role. There are some who argue that the federal government must maintain the professional autonomy of the Forest Service, and thus maintain the current level of public participation. Despite this concern, the Quincy Library Group in California recently succeeded in getting congressional approval of a locally devised plan that circumvented traditional forest planning procedures (see Chapter 12).

New proposals for forest reform are beginning to proliferate, and change may come sooner rather than later. As such, it is up to each community-based conservation effort to consider suggesting new and different ways of increasing their participation in forest and watershed management. For now, however, codified increases in the level of public participation have not occurred, and groups must still work within the traditional NFMA framework until reform is achieved.

Federal Land Policy and Management Act (FLPMA)

Overview

The Federal Land Policy and Management Act of 1976⁷⁹ (FLPMA) provides the central structure for Bureau of Land Management activities. FLPMA establishes uniform guidelines for the acquisition, sale, and exchange of federal lands; calls for land-use planning; and lays out management principles and procedures. FLPMA's planning directives fit into a tiered planning system: national policies govern all Bureau of Land Management lands, Resource Management Plans (RMP's) provide guidance for large Resource Areas, and individual project plans are implemented consistent with the governing RMP.

Like the development of Forest Plans under NFMA, RMP's are the most important tier of the Bureau of Land Management's planning system from the standpoint of local stakeholders. In

⁷⁶ 36 C.F.R. § 219.12(b).

⁷⁷ 36 C.F.R. § 219.12(b).

⁷⁸ For an in-depth discussion of current efforts to reform forest policy, see *Seeing the Forest Service for the Trees: Proposals for Changing National Forest Policy* (draft) on file with the Natural Resources Law Center, Feb. 22, 2000.

⁷⁹ 43 U.S.C.A. §§ 1701-84 (West 1986 & Supp. 1996).

developing and revising a RMP, the agency must observe nine general criteria.⁸⁰ Most of these criteria are too vague to contribute to specific review of a RMP, but they do help understand the agency's mission in crafting its land-use plans. For example, the criteria require the "use and observ[ance of] the principles of multiple use and sustained yield; . . . consider[ation of] present and potential uses of the public lands; . . .[and] weigh[ing] long-term benefits to the public against short-term benefits."⁸¹ As this section contains FLPMA's only major planning directives, FLPMA allows the Bureau of Land Management great latitude in devising the regulations governing RMP planning. Once a RMP is adopted, the Bureau of Land Management lands must be managed in accordance with the plan.⁸²

Application to Community-Based Conservation

Because project plans must correspond with the governing RMP, agency discretion and public opportunities to affect decisions are limited once a RMP has been approved. Thus, to have a say in land management decisions, it is important for local stakeholders to influence the development of the RMP. FLPMA explicitly calls for "public involvement" in the RMP planning process.⁸³ As a result, the Bureau of Land Management must notify "individuals and groups known to be interested in or affected by a resource management plan," and give appropriate governments and the public the opportunity to "participate in the formulation of plans and programs relating to management of the public lands."⁸⁴

Furthermore, since RMP's are prepared with accompanying EIS's and require NEPA compliance, the public involvement provisions concerning RMP's are very similar to those mandated by the NEPA process discussed above. When preparing a plan, the Bureau of Land Management must publish a formal Notice of Intent (NOI) "in the Federal Register and appropriate media, including newspapers of general circulation in the State."⁸⁵ There are also opportunities for public involvement, paralleling NEPA's scoping process. These opportunities often take the form of public meetings or workshops in which local persons can ask questions and offer comments to Bureau of Land Management personnel.⁸⁶ Other Bureau of Land Management activities may include requests for written comments, hearings, or simple surveys.⁸⁷ The comment and appeal process also closely follows the NEPA process.

Once a RMP is in place, the Bureau of Land Management will plan and implement various projects in accordance with the governing RMP. The agency's regulations are generally not as concerned with providing for public participation on the project planning level because the public has presumably already had a number of opportunities to comment on the proposed action during the RMP process. In fact, the controlling public involvement regulations barely mention the project planning stage.

⁸⁰ See 43 U.S.C.A. § 1712(c).

⁸¹ 43 U.S.C.A. §§ 1712(c)(1), (5), (7).

⁸² 43 U.S.C.A. § 1712.

⁸³ 43 U.S.C.A. § 1712(a).

⁸⁴ 43 U.S.C.A. §§ 1610.2(d), 1712(f).

⁸⁵ 43 C.F.R. § 1610.2(c).

⁸⁶ 43 C.F.R. § 1610.4-1.

⁸⁷ See, e.g., 43 C.F.R. § 1610.2(c)(6).

Much like the Forest Service, the Bureau of Land Management is also working to revise its planning procedures and implementation regulations. One of the ways they are considering increasing public participation is through the generation of NEPA-like standards. An example of this came when the Bureau of Land Management issued its final rule on “Department Hearings and Appeals Procedures; Cooperative Relations; Grazing Administration.” In the rule, the Bureau noted, “an important element of rangeland improvement involves facilitating effective public participation in the management of public lands. To implement this goal, the term ‘affected interests’ is removed throughout the [old] rule and replaced with the term ‘interested public.’ The rule also removes the authorized officer’s discretion to determine whether an individual meets the standards for ‘affected interest’ status.”⁸⁸ Whether the Bureau of Land Management will continue to open FLPMA to public participation remains an open question.

Key Regulatory Programs for Resources Protection

Endangered Species Act (ESA)

Overview

The Endangered Species Act of 1973⁸⁹ (ESA) seeks to conserve, restore, and protect endangered and threatened species, and their ecosystems.⁹⁰ In general, the U.S. Fish and Wildlife Service (FWS) administers the ESA for terrestrial and non-anadromous fish (e.g., trout), while the U.S. National Marine Fisheries Service (NMFS) administers the ESA for marine species and anadromous fish (e.g., salmon).⁹¹ The ESA can be a powerful tool for promoting regional (e.g., watershed-based) resources management. Although the ESA is driven by a species-specific focus, it can also provide protection for a species' entire habitat. However, the ESA only applies to species that are determined to be "threatened" or "endangered." As a result, the ESA provides only reactive protection. The ESA is essentially comprised of five main components: (1) the listing of species, (2) the consultation process for federal actions, (3) the prohibition on the unauthorized "taking" of species, (4) the permitting process for "taking" species, and (5) enforcement.

The first essential component in the ESA process is the listing of species. Under the ESA, "species" is broadly defined to include species, subspecies and "any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature."⁹² Species are directly protected by the ESA only if they are formally listed as "endangered" or

⁸⁸ 60 F.R. 9894, 9897 (1995).

⁸⁹ 16 U.S.C.A. §§ 1531-1543 (West 1985).

⁹⁰ 16 U.S.C.A. § 1531(b).

⁹¹ See 50 C.F.R. § 402.01(b) (citing which species lists are under the jurisdiction of each Service).

⁹² 16 U.S.C.A. § 1532(16).

"threatened" under section 4.⁹³ However, federal agencies must hold a "conference" with the FWS or NMFS (collectively "the Service") in undertaking "any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat."⁹⁴ Furthermore, species that have been proposed for listing (i.e., "candidate species") are often given extra consideration under Clean Water Act (CWA) and NEPA implementations.

The determination of whether a species must be listed is made by the Secretary of the Interior (for the FWS), or the Secretary of Commerce (for the NMFS), "solely on the basis of the best scientific and commercial data available."⁹⁵ If "the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, . . . the Secretary shall promptly commence a review of the status of the species concerned."⁹⁶ A species must be listed as "endangered" if the Secretary determines that it "is in danger of extinction throughout all or a significant portion of its range."⁹⁷ A species must be listed as "threatened" if the Secretary determines that it is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."⁹⁸ In determining whether a species must be listed, the economic impacts of the listing may not be considered. The ESA also requires, with two exceptions,⁹⁹ that the Secretary designate the critical habitat of the species "concurrently" with the listing of the species.¹⁰⁰ In practice, however, critical habitat is often not designated.

The second main component of the ESA is the section 7 consultation process for federal actions.¹⁰¹ Once a species is listed, every federal agency action that is "authorized, funded, or carried out by such agency" is subject to the section 7 process.¹⁰² Initially, an "informal" consultation may be held between the Service and the federal agency seeking to undertake an action.¹⁰³ The purpose of an informal consultation is to determine whether any listed species are present in the area of the federal action.¹⁰⁴ If a federal agency action may adversely affect listed species or critical habitat, then the agency must enter into "formal consultation" with the Service.¹⁰⁵

Formal consultation generally results in the completion of a "biological opinion."¹⁰⁶ The biological opinion determines whether the federal agency action "is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of

⁹³ 16 U.S.C.A. § 1533.

⁹⁴ 50 C.F.R. § 402.10(a) (1995).

⁹⁵ 16 U.S.C.A. § 1533(b)(1)(A).

⁹⁶ 16 U.S.C.A. § 1533(b)(3)(A).

⁹⁷ 16 U.S.C.A. § 1532(6).

⁹⁸ 16 U.S.C.A. § 1532(20).

⁹⁹ 16 U.S.C.A. § 1533(b)(6)(C)(i)-(ii).

¹⁰⁰ 16 U.S.C.A. § 1533(a)(3)(A).

¹⁰¹ 16 U.S.C.A. § 1536.

¹⁰² 16 U.S.C.A. § 1536(a)(2).

¹⁰³ 50 C.F.R. § 402.13.

¹⁰⁴ 50 C.F.R. § 402.13.

¹⁰⁵ 50 C.F.R. § 402.14.

¹⁰⁶ 50 C.F.R. § 402.14(g)(4).

critical habitat."¹⁰⁷ This conclusion is termed a "jeopardy" or "no jeopardy" opinion. If a jeopardy opinion is issued, then the Service will work with the agency to find "reasonable and prudent alternatives" to avoid harming the species.¹⁰⁸ If there is no reasonable and prudent alternative to jeopardizing the continued existence of the species, then the agency action must be abandoned, unless the Endangered Species Committee (nicknamed the "God Squad") issues an exemption.¹⁰⁹ However, this exemption process has only been invoked on rare occasions.

Additionally, the biological opinion generally includes an "incidental take statement." The statement determines whether the agency's action will result in a section 9 "take" of the listed species (discussed below) and whether an "incidental take" should be permitted.¹¹⁰ If the Service determines that a take will not occur, then the Service can "[f]ormulate discretionary conservation recommendations . . . to assist the Federal agency in reducing or eliminating the impacts that its proposed action may have on listed species or critical habitat."¹¹¹ If the federal agency's action will result in a taking of listed species, then the Service must specify the "reasonable and prudent measures that . . . [are] necessary and appropriate to minimize" the impact of the action on the listed species.¹¹²

The third main component of the ESA is section 9's prohibition from unauthorized "takings" of a member of a listed species.¹¹³ The term "take" is defined broadly as: "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."¹¹⁴ Furthermore, the ESA regulations broadly define "harass" and "harm." "Harass" is defined as any "act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns."¹¹⁵ "Harm" includes "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns."¹¹⁶ Section 9's general prohibition on "taking" listed species applies to all individuals, on both private and public land.¹¹⁷

The fourth main component of the ESA is the permitting process for authorizing the taking of species. It is unlawful to take a listed species without a "permit."¹¹⁸ An individual may obtain a permit to take a listed species if the taking is for "scientific purposes or to enhance the propagation or survival of the affected species."¹¹⁹ A take may also be permitted if it "is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."¹²⁰ Under section 7, a federal agency may be permitted to incidentally take a listed species if the taking

¹⁰⁷ 50 C.F.R. § 402.14(g)(4).

¹⁰⁸ 16 U.S.C.A. § 1536(b)(3)(A).

¹⁰⁹ 16 U.S.C.A. §§ 1536(g)-(h).

¹¹⁰ 50 C.F.R. § 402.14(i).

¹¹¹ 50 C.F.R. § 402.14(g)(6).

¹¹² 50 C.F.R. § 402.14(i)(1).

¹¹³ 16 U.S.C.A. § 1538.

¹¹⁴ 16 U.S.C.A. § 1532(19).

¹¹⁵ 50 C.F.R. § 17.3.

¹¹⁶ 50 C.F.R. § 17.3. *See also*, Babbitt v. Sweet Home Chapter of Communities for a Great Oregon, 115 S.Ct. 2407 (1995) (upholding the regulatory definition of "harm").

¹¹⁷ 16 U.S.C.A. § 1538(a)(1)(B).

¹¹⁸ 16 U.S.C.A. § 1538(a)(1)(B).

¹¹⁹ 16 U.S.C.A. § 1539(a)(1)(A).

¹²⁰ 16 U.S.C.A. § 1539(a)(1)(B).

will not jeopardize the continued existence of the species.¹²¹ Under section 10, a private landowner may be permitted to incidentally take a listed species if the Service approves a habitat conservation plan (HCP) specifying the conservation measures that the owner will undertake to mitigate the affects of such takings.¹²²

The fifth main component of the ESA is its enforcement. The Service is responsible for enforcing the ESA. The mandates of the ESA can be strictly enforced with significant monetary and criminal penalties.¹²³ Additionally, any citizen can seek to enjoin any other individual or agency from violating the ESA.¹²⁴

Application to Community-Based Conservation

For efforts in community-based conservation, the ESA can be both a tool and an obstacle. Indeed, the ESA is often a major factor in the formation of community-based conservation groups and the selection of objectives. As a tool, the ESA can be very effective in providing conservation mandates to government and private interests alike. As an obstacle, the ESA may limit a community group's ability to adequately address its diverse objectives.

The ESA provides comparatively few opportunities for public participation and collaboration. The scientific foundation of the ESA was specifically intended to be exempt from any other pressures, including political and economic. Although any person may petition the Secretary to list a species, and much of the listing process is open in the sense that information is available to the public, listing is not an inclusive process.¹²⁵ However, any interested citizen may seek judicial review of the denial of a petition to list a species.¹²⁶ On the whole, however, there are very few opportunities for local stakeholders to effect the listing process.

The development and implementation of ESA regulations is somewhat more inclusive. For example, the Secretary must, if requested, hold a public hearing concerning any proposed regulation to "list, delist, or reclassify a species."¹²⁷ "[I]n developing and implementing recovery plans," under section 4, the Secretary "may procure the services of appropriate public and private agencies and institutions, and other qualified persons."¹²⁸ Recovery teams that are appointed under this provision are explicitly exempted from the mandates of FACA.¹²⁹ This FACA exemption allows community-based conservation groups to play an important and effective role in the substantive implementation of the ESA. Beyond this exception, however, FACA will otherwise apply. Furthermore, the Secretary is required to "provide public notice and an opportunity for public review and comment" before a final recovery plan is approved.¹³⁰

¹²¹ 16 U.S.C.A. § 1536(b)(4).

¹²² 16 U.S.C.A. § 1539(a)(2)(A).

¹²³ 16 U.S.C.A. § 1540.

¹²⁴ 16 U.S.C.A. § 1540.

¹²⁵ 16 U.S.C.A. § 1533(b).

¹²⁶ 16 U.S.C.A. § 1533.

¹²⁷ 50 C.F.R. § 424.16(c)(vi)(3).

¹²⁸ 16 U.S.C.A. § 1533(f)(1)(2).

¹²⁹ 16 U.S.C.A. § 1533(f)(2).

¹³⁰ 16 U.S.C.A. § 1533(f)(4).

The information submitted during this comment period must be considered by the federal agency prior to implementing the plan.¹³¹

Because a federal agency "action" may invoke both NEPA and the ESA, there is some uncertainty as to which ESA "actions" are also subject to NEPA's procedural requirements. Although the courts and the agencies have clarified some of these uncertainties, others remain. As NEPA requires opportunities for public participation, its potential applicability can be very important for stakeholders that are interested in participating in the ESA process.

NEPA does not apply to the ESA listing process because the Secretary cannot consider any political or economic factors when determining whether to list a species. Additionally, the federal agencies do not follow NEPA in developing or implementing recovery plans because they do not consider such plans a federal "action." However, the 1988 Amendments to the ESA now provide for public comment and review of such plans.

On the other hand, as of this publication, the courts are presently split as to whether NEPA applies to critical habitat designations.¹³² Development of habitat conservation plans (HCP's) are subject to the NEPA processes, but the Service has granted a categorical NEPA exclusion to low-effect HCP's. Recently, however, the Service decided to expand public participation in the HCP process. This is to "provide greater opportunity for the public to assess, review, and analyze HCPs and associated documents (e.g., National Environmental Policy Act (NEPA) documents)."¹³³ To provide this opportunity, the Service proposes to expand the current 30 day public comment period to 60 days. The Service will keep the 30 day period for the low-effect, NEPA-exempt HCPs.

Further, the Service noted that, "during the public comment period, any member of the public may review and comment on the HCP and the accompanying NEPA document, if applicable. If an EIS is required, the public can also participate during the scoping process. When practicable, the Services will seek to announce the availability of HCPs in electronic format and in local newspapers of general circulation. The Services will encourage potential applicants to allow for public participation during the development of an HCP, particularly if non-Federal public agencies (e.g., State Fish and Wildlife agencies) are involved."¹³⁴

Overall, the ESA is one of the most powerful conservation laws. Although the ESA's procedural processes are relatively closed, local stakeholders can play an important role in the substantive implementation of the ESA. Many of the most successful species recoveries under the ESA have included strong public participation and support. Community-based conservation groups can also potentially play an important advocacy function, as restructuring and/or reauthorization of the ESA is a seemingly chronic issue.

¹³¹ 16 U.S.C.A. § 1533(f)(5).

¹³² Compare Catron County Bd. of Comm'rs v. United States Fish and Wildlife Serv., 75 F.3d 1429 (10th Cir. 1996) (holding that NEPA does apply to ESA critical habitat designations) and Douglas County v. Babbitt, 48 F.3d 1495 (9th Cir. 1995) (holding that NEPA does not apply to ESA critical habitat designations).

¹³³ 64 F.R. 11485, 11490 (1999).

¹³⁴ 64 F.R. 11485, 11490 (1999).

Clean Water Act (CWA)

Overview

The Federal Water Pollution Control Act,¹³⁵ now called the Clean Water Act (CWA),¹³⁶ was passed in 1972. The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."¹³⁷ The CWA has been amended several times, but most of the original aspects of the 1972 law remain intact.

The CWA includes a system of "goals" to improve water quality across the country. The goals of the CWA include decreasing water pollution in order to obtain minimum water qualities by a certain date. Section 303 of the CWA requires the states to set water quality standards and to develop programs to insure compliance with such standards.¹³⁸ Although the states are primarily responsible for implementing and enforcing the provisions of the CWA, the federal government also retains enforcement power.

To obtain these goals, the National Pollutant Discharge Elimination System (NPDES) was created, which requires that any "point source" polluter of any of the nation's surface waters obtain an NPDES permit from an Environmental Protection Agency (EPA) approved state program (or, in some cases, the EPA itself).¹³⁹ Even if such a program is approved, the EPA retains both a permit veto power and the power to sue permittees for violations. In some cases, water users may also have to obtain a separate federal permit.¹⁴⁰ If such a permit is required, the applicant must first obtain a state certification that the discharge will comply with the state's CWA plans and standards.

The CWA defines a "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, [etc.] . . . from which pollutants are or may be discharged."¹⁴¹ It is unlawful to discharge any point source pollutant into surface waters¹⁴² without a permit. Section 208 of the CWA requires states to develop and implement "areawide waste treatment management plans" for areas with "substantial water quality control problems."¹⁴³ Once an areawide plan is approved, "no permit under [the NPDES system] shall be issued for any point source that is in conflict with [the] plan."¹⁴⁴

In order to receive a permit the discharger must meet both federal effluent standards and stricter state water quality standards. Additionally, dischargers must implement control technology to

¹³⁵ 33 U.S.C.A. §§ 1251-1387 (West 1986 & Supp. 1996).

¹³⁶ See Pub. L. No. 95-217, sec. 2, § 518, 91 Stat. 1566, 1566 (1977).

¹³⁷ 33 U.S.C.A. § 1251(a).

¹³⁸ 33 U.S.C.A. § 1313.

¹³⁹ 33 U.S.C.A. § 1342.

¹⁴⁰ 33 U.S.C.A. § 1341.

¹⁴¹ 33 U.S.C.A. § 1362(14).

¹⁴² Groundwater is largely covered by the Safe Drinking Water Act, 42 U.S.C.A. §§ 300(f)-300(j) (West 1991 & Supp. 1996).

¹⁴³ 33 U.S.C.A. § 1299(a).

¹⁴⁴ 33 U.S.C.A. § 1288(e).

mitigate the adverse environmental effects of such discharges. An issued permit contains all of the conditions with which the discharger must comply, such as discharge limits, regular report filing, and allowing for inspections. The NPDES also prohibits "backsliding"; once a permit has been issued, no subsequent permit may be less stringent.¹⁴⁵

Although "nonpoint source" polluters are exempt from the NPDES program, the CWA does provide for regulation of nonpoint source pollution.¹⁴⁶ "[N]onpoint source pollution does not result from a discharge at a specific, single location (such as a single pipe) but generally results from land runoff, precipitation, atmospheric deposition, or percolation."¹⁴⁷ Nonpoint source pollution must be regulated where attainment of applicable water quality standards for a body of water "cannot reasonably be expected" without such regulation.¹⁴⁸ The state must identify all such bodies of water and establish a management program with the objective of bringing the pollution levels into compliance with the CWA.¹⁴⁹ All nonpoint source management programs, many of which are funded by the federal government, must be approved by the EPA.¹⁵⁰

Application to Community-Based Conservation

The CWA provides for public participation on a number of different levels. Most basically and effectively, the public can intervene during the permitting process to make their concerns regarding a particular watercourse or watershed heard.¹⁵¹ Furthermore, any person who is interested in seeing permitting and monitoring records can do so under the Freedom of Information Act. If citizens do not like what they see, they have the right to file an administrative appeal with the permitting agency. If such an appeal is denied, then citizens can sue to enforce the limitations provided for in a permit. People may also sue to enforce nondiscretionary EPA regulatory duties and orders.¹⁵²

People can also bring perceived water quality violations to the attention of the regulatory agencies, in the hopes of addressing or revising the overall standards. The EPA is required to hold regular public meetings every three years on the adequacy of the water quality standards for a particular watercourse.

Generally speaking, it is the duty of the public to be involved at every possible stage of the NPDES permitting process. From setting TMDLs¹⁵³, to Section 401 applications¹⁵⁴, to Section

¹⁴⁵ 33 U.S.C.A. § 1342(o).

¹⁴⁶ See, 33 U.S.C.A. § 1329(1)(A).

¹⁴⁷ Office of Water, U.S. Environmental Protection Agency, Nonpoint Source Guidance 3 (1987).

¹⁴⁸ 33 U.S.C.A. § 1329(a)(1)(A).

¹⁴⁹ 33 U.S.C.A. § 1329(a)(1)(A).

¹⁵⁰ See 33 U.S.C.A. § 1329(d).

¹⁵¹ For a very good introduction to the Clean Water Act, with an emphasis on the public's role, see *The Clean Water Act: An Owners Manual*, by River Network, March 1999 (Elder et al., 1999).

¹⁵² 33 U.S.C.A. § 1365.

¹⁵³ Essentially, a TMDL (Total Maximum Daily Load) is a calculation of a stream's ability to assimilate pollutants—a limit defined mostly by biophysical factors. TMDLs are required in non-attainment areas where the NPDES system has been insufficient to meet water quality goals. Once a TMDL standard is established, then this "allowable" level of pollution must be allocated among all polluters.

¹⁵⁴ Section 401 allows states to veto or place conditions on federal activities that may create water pollution.

404 permits¹⁵⁵, the agencies involved, be they state or federal, must provide an opportunity for public notice and comment. Local watershed management groups should seize these opportunities to affect the outcomes of these agency processes. This requires paying a fair amount of attention to both the quality and status of a particular watershed, but staying informed can increase the chances of getting involved during the crucial permitting stages.

Other Potentially Relevant Federal Laws

In addition to those laws already discussed, many other federal statutes and programs are potentially influential in specific community-based conservation efforts. A few of the most obvious candidates are described below.

Wild and Scenic Rivers Act (WSRA)

Enacted in 1968, the Wild and Scenic Rivers Act¹⁵⁶ (WSRA) was intended to protect "for the benefit and enjoyment of present and future generations" those rivers of the Nation that possess "outstandingly remarkable" values (e.g., scenic, recreational, geologic, fish and wildlife, historic, cultural, etc.).¹⁵⁷ Any river section designated under WSRA is subject to limitations on further development that would have an adverse effect on "the values which caused it to be included in" in the system of Wild and Scenic rivers.¹⁵⁸

River sections may be added to the system in two ways: (1) by an act of Congress, or (2) by approval of an application from the governor of a state that has already protected the river section.¹⁵⁹ Eligibility of a section depends on a number of factors. The river must possess at least one "outstandingly remarkable" value (as determined by the judgment of the study team).¹⁶⁰ Although the river section must be "free-flowing" (or restorable to free-flowing), there are no specific requirements concerning length or flow level of the segment.¹⁶¹

An eligible river section must be classified in one of the following three categories:

Wild river area - free of impoundments; is generally inaccessible except by trail; shows little evidence of human activity; has high water quality.

Scenic river area - free of impoundments; is accessible in places by roads; shows no substantial evidence of human activity (could include timber harvesting if no substantial adverse effect of natural appearance of river).

¹⁵⁵ Section 404 deals with dredge-and-fill permits regarding wetlands.

¹⁵⁶ 16 U.S.C.A. §§ 1271-1287 (West 1985).

¹⁵⁷ 16 U.S.C.A. § 1271.

¹⁵⁸ 16 U.S.C.A. § 1281(a).

¹⁵⁹ 16 U.S.C.A. § 1273(a).

¹⁶⁰ See 16 U.S.C.A. § 1273(b).

¹⁶¹ 16 U.S.C.A. § 1273(b).

Recreational river area - may have undergone some impoundment or diversion in the past; readily accessible; some development along shorelines.¹⁶²

The provisions for the management of a designated river section are vague, but revolve around the central principle of protecting the values for which the section was designated.¹⁶³ Thus, to be able to later impact management decisions, local stakeholders must first influence the study process and its determination of which values are "remarkable."

WSRA mandates that a management plan be created specifically for designated sections.¹⁶⁴ The decisions regarding the management plan will be made by the land management agency with jurisdiction over the designated section. The plan will almost always be formulated using a NEPA-type process, with the attendant minimum standards for public involvement. As a result, the public may have an opportunity to participate in decisions such as: setting the boundaries of the protected section; developing a plan to protect the "remarkable values"; providing for public use of the proposed river section; deciding where to put any needed public facilities, such as restrooms or docks; and deciding which activities will be permitted within the boundaries, such as grazing.

The land area protected under WSRA is not very large: no more than 320 acres per mile of river can be designated. This is intended (and generally works out) to protect about 1/4 mile on both sides of the river. Therefore, although WSRA may be extremely effective in preserving the values of the river itself, it is not a very useful tool for watershed-wide protection.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980¹⁶⁵ (CERCLA) directs the cleaning up of leakage from hazardous wastes that, when released into the environment, may pose a substantial danger to the public health or welfare, or to the environment. Under CERCLA, owners or operators of hazardous substance facilities, people who arrange for the transportation or disposal of hazardous substances, or the actual transporters of hazardous substances, may be liable for all response costs, including cleanup and natural resource damages.¹⁶⁶ CERCLA is also interesting because it applies retroactively, and without regard for the legality of the act. For example, if a company in the 1950s used a cleaning solvent legally, and then disposed of it by dumping it onto the ground, also legally, if that pollution is discovered now, the company is still liable for cleanup costs.

¹⁶² 16 U.S.C.A. § 1273(b).

¹⁶³ 16 U.S.C.A. § 1278(a).

¹⁶⁴ 16 U.S.C.A. § 1281(a).

¹⁶⁵ 42 U.S.C.A. §§ 9601-9675 (West 1995 and Supp. 1996).

¹⁶⁶ 42 U.S.C.A. § 9607.

The CERCLA definition of "hazardous substance" is quite broad.¹⁶⁷ Moreover, a community-based conservation group that is involved with any "hazardous substance" may be deemed an "operator."¹⁶⁸ Therefore, these groups must be careful to avoid incurring liability for any activities related to "hazardous" substances. This issue is particularly salient in regions populated by abandoned hardrock mines. (For more information, see the Animas River Stakeholders Group case study in Chapter 15.)

CERCLA also established the infamous "Superfund," which is designed to help states and private parties mitigate cleanup costs in areas that are either orphaned (no solvent potentially responsible parties still exist) or pose such an emergency that they must be cleaned up immediately.

The public does have a few opportunities to affect CERCLA decisions. Before any remedial cleanup plan is undertaken, including listing on the national Superfund list, the government must provide notice and an opportunity for public comment at every stage.¹⁶⁹ This includes both the proposed and final plans, and before any final judgments are entered into. Additionally, the public has the right to sue individuals in violation of the standards or requirements of CERCLA, or the government for failing to undertake a nondiscretionary duty.¹⁷⁰

Laws Pertaining to Agricultural Management

A variety of federal agricultural laws and programs can influence efforts in community-based conservation. At the core of these diverse programs is the Soil Conservation Act of 1935 (SCA).¹⁷¹ The SCA established the Soil Conservation Service (SCS), whose mandate was to "provide permanently for the control and prevention of soil erosion, and thereby to preserve natural resources...."¹⁷² At the time of enactment, soil erosion from improper farming was linked to water quality problems, loss of productivity of the land, and flood problems. The SCS was charged with conducting surveys, investigations, demonstration projects and other research, and was told to publish all of their findings. The SCS was also given the responsibility of carrying out preventative measures designed to improve stewardship of the land, which included direct aid to and cooperation with local governments and individuals in order to produce more efficient, productive farms.

With the cooperation of private landowners, the SCS—since renamed the Natural Resources Conservation Service (NRCS)—has proceeded to establish technical and financial assistance programs to reduce the amount of soil loss caused by farming. If such efforts are not successful, then the effects of poor land management may be actionable under one or more of the statutes discussed above. For example, excess agricultural runoff can be taken into account

¹⁶⁷ See 42 U.S.C.A. § 9601(14) (defining "hazardous substance").

¹⁶⁸ See 42 U.S.C.A. § 9601(20)(A) (defining "operator").

¹⁶⁹ 42 U.S.C.A. § 9617.

¹⁷⁰ 42 U.S.C.A. § 9659.

¹⁷¹ 16 U.S.C.A. § 590.

¹⁷² 16 U.S.C.A. § 590(a).

when setting TMDLs for a particular river under the Clean Water Act. Of course, the preferred management approach is to use best management practices that prevent such violations. It appears that public support for conservation-oriented farming is rapidly growing, as community-based conservation efforts increasingly seek to incorporate good farm stewardship into their overall conservation plans. In this way, they avoid isolating large private landholders who can have a drastic effect on the land. As the NRCS notes, “a search for consensus then becomes the foundation for effective land stewardship in communities and watersheds across the country (NRCS, 1996).”

The Prior Appropriation Doctrine

State water law provides an important part of the legal framework within which community-based conservation efforts must operate. In some cases, western water law is sufficiently flexible to accommodate innovative water management strategies championed by community-based initiatives (NRLC, 1997). However, in other situations, water law can provide a formidable obstacle to such efforts, since the doctrine of prior appropriation is primarily designed to define and protect the interests of private rightsholders rather than to address collective public interests. Consequently, successful efforts in community-based conservation must be cognizant of the pivotal role played by water rightholders.

All of the western states use some form of the prior appropriation doctrine for allocating and administering water rights (Getches, 1990; Reisner and Bates, 1990). Under this system, private parties can obtain legal rights to use water. This right is established after the lawful “appropriation” of available water, which normally requires the diversion (i.e., withdrawal) and consistent use of waters not already awarded to other rightsholders. When recognized by the state administrative body, a water right or permit is typically awarded specifying the terms of the right. One of the key parameters addressed is the quantity of the right, sometimes defined in terms of a specific volume or flow of water, and other times based on assumptions regarding the amount of water necessary to satisfy a given need (such as irrigation of a specified crop). The specified use of the water must be recognized by the state as a “beneficial use,” typically defined in terms of consumptive uses such as irrigation, municipal water supply, and industrial use.

Also extremely important is the priority date of the right, which normally corresponds to the date of first lawful diversion. Holders of water rights that are more “senior” are entitled to divert the full amount of their rights, even if the result is that there is insufficient water left in the river to satisfy the holders of more “junior” water rights. Conversely, a more junior holder may not divert water if the diversion will leave insufficient water in the river for a senior holder downstream to appropriate his entire right. This characteristic of prior appropriation can discourage cooperative conservation efforts among rightsholders, since any waters “gained” from such actions are likely to be enjoyed solely by the next appropriator in line. Additionally, waters freed up through conservation efforts can be seen by administrators as evidence of waste in the original right, and the size of the conserving party’s water right can correspondingly be adjusted downward in response—creating a disincentive for conservation. This disincentive

can be significant when water is delivered at prices far below its market value, a common situation in the West (Wahl, 1989).

As the West evolves from a region dominated by agriculture to a more diversified economy and urbanized society, strong pressures encourage the movement of water from the agricultural sector to the municipal sector (NRC, 1992). There is also considerable interest in moving water back to the environmental sector. Water rights and, in turn, actual water, can generally be moved under the prior appropriation system through market exchanges as long as the interests of other rightsholders are not harmed. In recent years, most states have broadened this standard, prohibiting transfers that negatively impact the *public* interest, a criterion that increasingly includes environmental considerations (Reisner and Bates, 1990). These evaluations, occurring either in an administrative setting (e.g., the State Engineer's office) or a courtroom, can potentially provide a real opportunity for instilling community interests into an otherwise closed system of private rights.

Another way in which prior appropriation systems are being modified to better accommodate public conservation interests is through the establishment of instream flow programs, which allow state environmental agencies and/or private interests to acquire water rights for instream environmental purposes (Gillilan and Brown, 1997; Bell, 1997). Historically, narrow definitions of "beneficial use" prohibited these types of conservation strategies. Despite the removal of legal barriers discouraging conservation efforts and the maintenance of instream flows, acquiring rights in this fashion can require large financial resources, not a typical commodity of watershed initiatives and similar collaborative groups.

One of the most effective tools for returning water to depleted streams is through regulatory actions under the Endangered Species Act and, in some cases, the Clean Water Act. Such actions are considerably more viable when federal water projects are directly implicated in the storage and distribution of the waters in question, a common situation on many of the West's major drainages (WWPRAC, 1998). For example, the operation of almost all major projects in the Colorado and Columbia River Basins is influenced in part by the needs of endangered fish. Actions of this sort highlight the contradictory nature of state laws for water allocation (under prior appropriation) and federal programs for environmental protection, raising a host of difficult issues regarding intergovernmental relationships, sovereignty, and the protection of private rights. Given the divisive and litigious nature of such controversies, collaborative groups are often wise to maintain a respectful distance, and instead work within the framework provided by increasingly flexible state prior appropriation systems.

Conclusion

The legal and administrative framework for natural resources management in the West is complex for many reasons, not the least of which is the significant presence of federal lands and public interests. Most of the relevant statutes provide mechanisms by which citizens and other parties can influence policy. However, without a clear understanding of the legal and administrative framework, it is often quite difficult to discover when those opportunities exist,

and to then determine how best to utilize the opportunities presented. Additionally, even under the best of circumstances, the opportunities for protecting broad public interests—especially those related to environmental protection—are admittedly limited. These observations are equally applicable to state laws for water resources management, especially as directed by the prior appropriation system. Given these limitations, it is common to think of collaborative groups as tools for navigating around these procedural thickets, leading to direct on-the-ground problem-solving through more *ad hoc* “outside the box” mechanisms. While there is some logic in that reasoning, truly effective efforts in community-based collaboration should also feature a commitment to using those procedural opportunities already provided in existing law. These procedures are clearly less than ideal, but if used strategically, offer the potential to be a central part of a comprehensive strategy of improved resources management.

Chapter 4

Watershed Initiatives: Names and Contact Information

The following pages contain the names and contact information for 346 watershed initiatives in the western United States. While this is not an exhaustive list, it does contain all watershed initiatives identified by the Natural Resources Law Center satisfying the definition and regional parameters described in Chapter 1. Namely, these are groups that we believe have a regional (generally watershed) focus, involvement of both local stakeholders and governmental bodies, and a collaborative orientation. With few exceptions, all of these watershed initiatives were contacted and information confirmed within six months prior to publication. Nonetheless, we expect several errors to exist, largely due to the rapid organizational changes so characteristic of western watershed initiatives.

The following list is organized first by regional study area (i.e., whole or part of a river basin), and within those regions, by state. Seven regions are identified: (1) the Arkansas River Region, (2) the California-South Pacific Region, (3) Colorado River Region, (4) Columbia-North Pacific Region, (5) Great Basin Region, (6) South Platte-Missouri River Region, and (7) the Rio Grande River Region. These regions roughly correspond to the U.S. Water Resource Regions, shown below in Figure 4-1.



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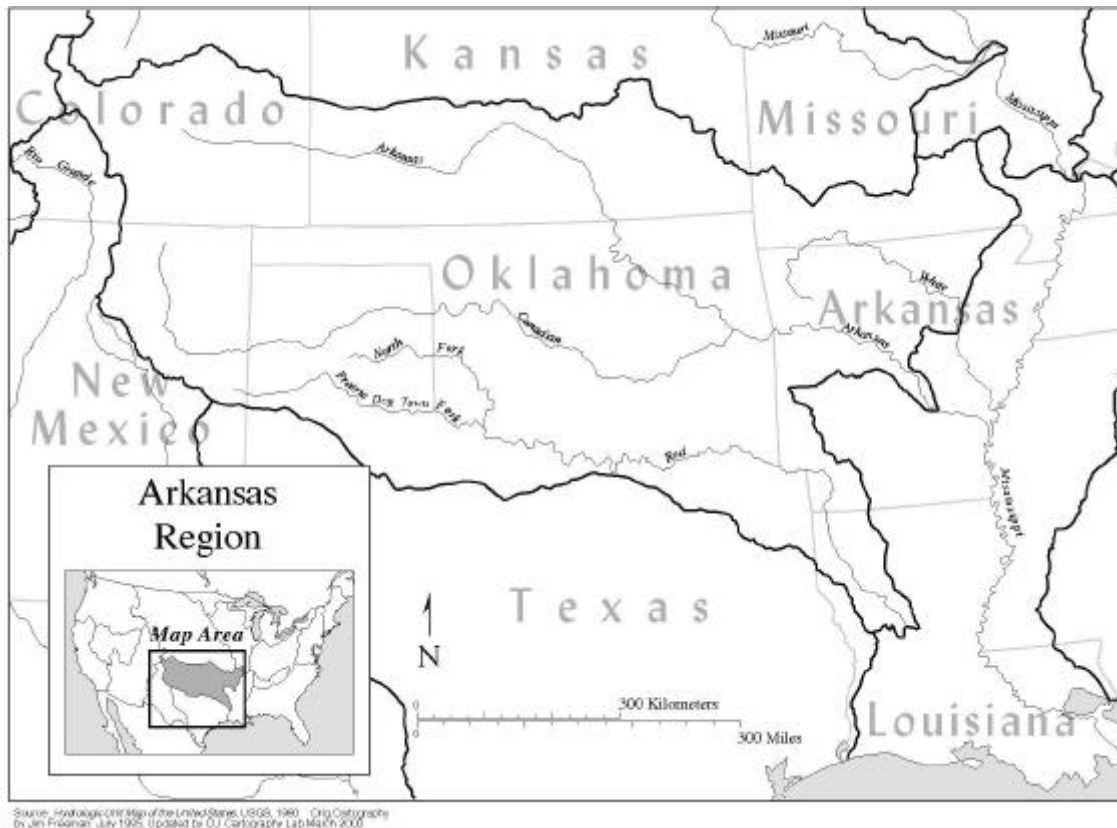
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Chapter 5

Selected Watershed Initiatives in the Arkansas River Basin



The *Source Book's* focus on the Arkansas-Red-White River Basin is primarily limited to the western end of the basin, where the headwaters of the Arkansas and its tributaries flow out onto the plains of southeastern Colorado and across the state line into Kansas. On these southeastern plains, agriculture is the dominant consumer of water. Increasingly, agricultural water rights are being transferred to municipal uses. These transfers provide water for trans-basin diversions and augmentation schemes that fuel the metropolitan growth along the front range of the Rockies.

Predictably, watershed initiatives in this region are concerned primarily with agricultural issues. Most groups are administered through local soil conservation districts, where there is a strong regional desire to preserve a dependable supply of irrigation water. Nonpoint source pollution is also an important issue, as this region grapples with irrigation-related salinity and nutrient loading problems. Total Maximum Daily Loads (TMDLs) are being set along segments of the Arkansas, and farmers and ranchers are concerned about the effect of total load limits on their ability to continue agricultural diversions.

Cheney Reservoir Watershed Project

Focus of the Watershed Initiative

The Cheney Reservoir is located in south-central Kansas. The focus of the Cheney Reservoir Watershed Project is on the entire basin, an area covering approximately 500,000 acres spread over 4 or more counties. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population in rural areas. The largest city in the region is Arlington, with a population of approximately 200. The local economy is moderate in strength and not diversified, featuring natural resource jobs mostly in agriculture.

The Cheney Reservoir Watershed Project was formed in 1992, primarily in response to taste and odor events in the reservoir, which is a water supply. As a result, the group is highly concerned with preserving and protecting the water quality in the reservoir as a water supply. Establishment of the group was primarily the result of work by the local government and by citizen/activist groups. Over the longer term, the goals of the group include protecting water quality and extending the life of the reservoir.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Bureau of Reclamation, Natural Resource Conservation Service, Environmental Protection Agency, the U.S. Geological Survey, the Kansas Department of Health and Environment, the Reno County Conservation District, the City of Wichita, and one or more academic or citizens groups. Membership is limited to residents and producers in the watershed. Government agencies serve as resources to the group, but are not members. The group is directed by a coordinator funded by the Environmental Protection Agency and Natural Resources Conservation Service. The group has an office where meetings are held monthly. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). In past years, budgets have been similar. Major providers of funding and in-kind services include the Natural Resources Conservation Service and the Environmental Protection Agency for implementing best management practices and staffing, and the local city of Wichita for implementing best management practices and to make up the difference in cost-share programs.

Accomplishments and Ongoing Activities

The Cheney Reservoir Watershed Project has completed the following activities: the development of management plans, shared decision-making/negotiated problem-solving, legal or policy research, and on-the-ground remediation or restoration activities including the completion of over 1,700 best management practices. The group has the following activities in progress: resource monitoring, scientific research, publication of newsletters and/or brochures,

conferences/workshops, and other educational activities. The group is most proud of the participation of producers and the continuous installation of best management practices.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Areas of strength of this watershed initiative appear to be the size, composition, and structure of the group; a perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; helpfulness of local, state, and federal agencies; and adequacy of funding to meet short-term goals.

The group listed the following factors as essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problems. The group listed the following keys to their success: (1) everyone agreed on the problem, (2) local participation, and (3) the city offering funding for cost share.

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Patterson Hollow Watershed Project

Focus of the Watershed Initiative

The Patterson Hollow watershed is located in southeastern Colorado. The focus of the group is on the middle basin, an area covering approximately 86,000 acres spread over two counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in cities and towns. The largest city in the region is Rocky Ford, with a population of approximately 7,500. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, primarily in the sectors of irrigated agriculture.

The Patterson Hollow Watershed Project was formed in 1991 in response to the desire of agricultural interests to voluntarily improve water quality, and followed unsuccessful efforts by the federal government. Establishment of the group was primarily the result of the efforts of federal agencies, with additional assistance from state agencies and the local Soil Conservation District. Since its formation, the group has been mostly concerned with issues of water quality

and water supply/flow regimes related to the purchase of water and transfer out of the Arkansas River basin.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to the water quality problems, transboundary impacts, and ineffective management programs or laws. Specific short-term goals include: (1) affecting water quality improvements in the Arkansas River, (2) improving irrigation efficiency, and (3) increasing the profit-margin for irrigated agriculture. Over the longer term, the goals of the group are to maintain irrigated agriculture in the Arkansas Valley.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Natural Resources Conservation Service, Environmental Protection Agency, the US Geological Survey, the Soil Conservation Board of Colorado, and the local East Otero Soil Conservation District and the West Otero Soil Conservation District. Membership is open to all interested parties. The group is directed by a coordinator, which is funded by the Natural Resources Conservation Service. The group has an office, located in Rocky Ford. Meetings are held twice annually. Issues are brought before the group by members. The group utilizes a formal decision-making process that has been pre-determined during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$75,000 and \$100,000, down from \$400,000 in earlier years. Major providers of funding and in-kind services (with percentages of the groups overall budget in brackets) include: the US Environmental Protection Agency’s 319 program (3 percent) used for management incentives, the Farm Service Agency (32 percent) used for cost-share and management incentives, the Natural Resources Conservation Service (30 percent) used for technical oversight, the Colorado State University Extension Service (15 percent) used for technology development and demonstration projects, and the East Otero and West Otero Soil Conservation Districts (20 percent) for administrative and program review costs.

Accomplishments and Ongoing Activities

The group has completed the following activities: shared decision-making/negotiated problem-solving, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, and other educational activities. In addition, the group has planned or is in the process of completing the following activities: the development of management plans related to nutrients, pests, and irrigation issues; water quality monitoring; scientific research; on-the-ground remediation or restoration activities; and a conference held every year in February. The group is most proud of changing irrigation methods to be more proficient and efficient.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern, although the group feels that monitoring data is showing an on-the-ground improvement and most participants believe the problem is being solved. Areas of

strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of state and federal agencies. Areas of potential weakness include that the funding is inadequate to meet short-term goals; local agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, changes in federal or state law, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) a good technology delivery system from a professional staff, (2) recognition of the problem by all partners and a belief in the cure, and (3) cost-sharing by producers who are effected.

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Upper Arkansas Sub-basin and Pawnee/Bucker Sub-basin Watershed Initiative

Focus of the Watershed Initiative

The Upper Arkansas and Pawnee/Bucker watersheds are located in western Kansas. The focus of the Upper Arkansas Sub-basin and Pawnee/Bucker Sub-basin watershed initiative is on the entire basin, an area spread over 3 counties. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Garden City, with a population of approximately 27,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of agriculture in general, and beef-packing plants in particular.

The Upper Arkansas Sub-basin and Pawnee/Bucker Sub-basin watershed initiative was formed in 1997, in response to concerns over the protection of groundwater, the prevention of runoff, controlling erosion, and reducing water usage through more efficient irrigation practices and monitoring. Establishment of the group was primarily the result of the Kansas Department of Natural Resources and Conservation, and followed earlier problem-solving attempts involving

a variety of studies, local group involvement and litigation over 20 years. Since its formation the group has been mostly concerned with issues of water supply/flow regimes (e.g., the lack of surface water and runoff from heavy rains), the very poor water quality in Arkansas River, and land-use management issues. Restoration of the Arkansas River streambank is needed, due to years of no/low water, lack of vegetation, and general misuse.

From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem. The group believes more funds are needed in western Kansas as part of a statewide program. The group is also concerned with educating landowners. Specific short-term goals include: (1) creating a partnership with multiple agencies, (2) utilizing resources, and (3) implementing a plan. Over the longer term, the goals of the group include implementing a plan to preserve water quality and protect resources.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Fish and Wildlife Service, the Natural Resource Conservation Service, the State Conservation Commission, the local Finney County Conservation District, local environmental planning groups, extension agencies, and local farmers and landowners. Membership is open to all interested parties. The group is directed by a coordinator paid by the Kansas Water Office, and does not utilize subcommittees. Meetings are held quarterly. Issues are brought before the group by an agenda decided upon at the public meeting. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The group has no budget. Major providers of in-kind services include the Natural Resources Conservation Service, state agencies (with efforts channeled through local conservation districts), and local agencies used for cost-share assistance and education efforts.

Accomplishments and Ongoing Activities

The Upper Arkansas Sub-basin and Pawnee/Bucker Sub-basin watershed initiative is involved with several activities, including: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, publication of newsletters and/or brochures, conferences/workshops, and other educational activities.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; the well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the fact that funding is inadequate to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) communication; (2) education; and (3) the willingness of group and agencies to work together.

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Chapter 6

Selected Watershed Initiatives in the California-South Pacific Region



Source: Hydrologic Unit Map of the United States, USGS, 1980. Orig. Cartography by Jim Friedman, July 1995, updated by OJ Cartography Lab March 2000.

region, issues of watershed management are inextricably linked to logging, forest management and endangered species habitat preservation—particularly concerning several listed species of salmon.

California has a long history of promoting and practicing watershed-based management, beginning with the establishment of Water Quality Conservation Boards in the late 1960s. Also highly influential in California has been the practice of Coordinated Resource Management and Planning, or CRMP (referred to as a “Crimp” by people familiar with the program). The CRMP concept is a resource planning and management paradigm that operates

Watershed initiatives are active in great numbers all over the state of California, and represent a great diversity of natural resource interests, issues and conflicts. In the urbanized and arid regions of southern California, groups typically focus on issues such as stormwater permitting, nonpoint source pollution from urban runoff, and protection of threatened riparian zones.

Considerably more activity can be found to the north. In this region, agriculture, forestry and commercial fishing collide with strong environmental values, urban growth and recreational interests. Northern California is well known for logging, salmon fishing, wood and paper industries, and agricultural production of everything from grapes to artichokes. At the same time, the area’s unique scenic beauty has fueled a conservation movement that sets a national standard for environmental activism. In this

at the local level, involving local stakeholders, government agencies and interest groups in a partnership for natural resource management. CRMP groups are particularly common in northern California, often operating out of resource conservation districts. Approximately 120 CRMP programs can be found in the state.

An additional stimulus promoting watershed initiatives is provided by the CALFED Bay-Delta Program, which is joint federal-state effort designed at addressing a host of water management programs in the Bay-Delta of Central California. The program strongly endorses comprehensive and integrated approaches to resources management, and is likely to be a significant source of watershed initiative funding in coming decades.

Aliso Creek Watershed Council

Focus of the Watershed Initiative

The Aliso Creek watershed is located in southern California. The focus of the group is on the entire basin, an area covering approximately 38 square miles spread over one county. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed in mostly cities/towns. The largest city in the region is Aliso Viejo, with a population of approximately 100,000. The local economy is strong and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Aliso Creek Watershed Council was formed in 1996 in response to concerns of the public and local government about creek water quality at the beach. Establishment of the group was primarily the result of the efforts of the city and county of Laguna Beach and the US Army Corp of Engineers. Since its formation, the group has been mostly concerned with issues of water quality related to bacteria and temperature, the maintenance of fish and wildlife and/or endangered species, and general environmental degradation related to erosion and geomorphic instability.

From an "institutional" (or administrative) standpoint, the group is also concerned with maintaining state and federal involvement and coordination, and inadequate state funding being given to the natural resource problem. The group describes the problems as resulting from rapid development, as the majority of the watershed is now urbanized with residential development of up to 18 units per acre. The regional population is expected to increase by more than 100 percent between 1980 and 2020. Specific short-term goals include: (1) completing an environmental impact statement/review, (2) coordinating federal budget efforts for construction of projects in 2000-2001, and (3) assuring benefits for all stakeholders. Over the longer term, the goals of the group are "identifying projects to stabilize channel degradation, improving surface water quality, restoring habitat, protecting infrastructure, and adding recreation opportunities."

Structure and Functioning of the Watershed Initiative

The Aliso Creek Watershed Council includes members from: the US Fish and Wildlife Service and Corps of Engineers; the California Department of Fish and Game, Regional Water Board, and the Coastal Commission; the cities of Laguna Beach, Laguna Hills, Laguna Niguel, Lake Forest, and Mission Viejo; the Los Aliso Water District, the El Toro Water District, and the Moulton Niguel Water District; the Surfrider Foundation and the PermaCulture Institute; and various citizens. Membership is open to all interested parties. The group is directed by a coordinator, funded by Orange County. The group utilizes subcommittees and meetings are held monthly. Issues are brought before the group through round table discussions. The group utilizes a decision-making process that is largely ad hoc and unspecified, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is very high, as the group recently entered into a \$1.2 million two-year agreement with the US Corp of Engineers to produce the environmental impact statement to identify projects to improve the creek. Major providers of funding and in-kind services include the US Corp of Engineers in the amount of \$600,000 used for the environmental impact statement feasibility study; the county, cities, and water agencies in the amount of \$600,000 used for cost sharing with the Corp of Engineers for the environmental impact statement study; and the State Water Board in the amount of \$50,000 from a water quality 319 grant.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of an environmental impact statement and watershed plan, water quality monitoring, scientific research on hydro-geomorphic models, on-the-ground remediation or restoration activities of riparian habitat, and other educational activities such as outreach efforts in local schools. The group is most proud of “viewing the solutions as system-wide and not the single quick fix for one interest group.”

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. However, the group believes a better measure of success will be whether or not it is able to obtain construction funding when the environmental impact statement is completed. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to its continued problem-solving effort: a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape (mainly through erosion control and habitat improvement projects), and the generation of increased public awareness of the resource or

resource problem(s). The group listed the following keys to success: (1) frequent informal communication, (2) regular formal meetings, and (3) relationship building.

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Arana Gulch Watershed Association

Focus of the Watershed Initiative

The Arana Gulch watershed is located on the north-central coast of California. The Arana Gulch watershed drains a three square mile area on the east side of the city of Santa Cruz. The basin is relatively long and narrow with elevations running from sea level to over 600 feet at the northern headwaters. Three steep-walled drainage systems, with sustained slopes of up to 70 percent, occur in the northern portion of the watershed. They are in consolidated purisima sediments of tertiary age. Sediment loading is a major problem with the water quality in Arana Creek.

The focus of the Arana Gulch Watershed Association is on the entire watershed, including the Monterey Bay National Marine Sanctuary, an area covering approximately 2,170 acres contained within one county. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Santa Cruz, with a population of approximately 53,000. The local economy is moderate in strength and moderately diversified.

The Arana Gulch Watershed Association was formed in 1997, primarily to address issues of greenbelt protection, water quality, and the costs of dredging the North Santa Cruz Small Craft Harbor. The group is also concerned about water supply/flow regimes such as peak flood discharges from Arana Creek, which range from 990 cubic feet per second for a ten-year event, to 1650 cubic feet per second for a 100-year event. The watershed has very low flows during summer months. The group is also highly concerned about water quality, the maintenance of fish and wildlife, land-use management, and general environmental degradation. Sediments are the main water quality concern, while the fact that Arana Gulch is a historic spawning/resting stream for steelhead raises endangered species and habitat protection concerns. The group is concerned about a decline in riparian function including the lack of canopy cover and nutrients,

and excessive sedimentation caused by bank instability, leading to a lack of spawning gravels and resting pools. The riparian community has been highly impacted by exotic plant species. Development throughout the watershed has increased runoff. Nonpoint source pollution in the urban areas has also impacted water quality. Channelization of the stream in lower sections of the watershed contributes to flooding and impedes fish migration.

Establishment of the group was primarily the result of efforts by the Santa Cruz Port District, the U.S. Natural Resources Conservation Service, the City and County of Santa Cruz, the Friends of Arana Greenbelt, and the Coastal Watershed Council. The formation of the group followed earlier problem-solving attempts that involved conducting studies and making recommendations, but that lacked a cohesive group effort focused on the watershed and the people living there. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management, inadequate interagency or interjurisdictional coordination, and the the perception of the creek as a drainage ditch rather than a vital component in the ecology of fish, wildlife and human survival.

The mission/vision statement of the group is “To protect and enhance the health of the Arana Gulch Watershed resources.” Specific short-term goals include: (1) communication and outreach to the community, (2) continuing monthly meetings and workshops, and (3) obtaining funding to develop a comprehensive watershed plan. Over the longer term, the goals of the group include: reducing sediment in the water by upslope restoration and best management practices, and protecting and improving riparian habitat for fish and wildlife.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Natural Resource Conservation Service; the California Department of Fish and Game and the California Coastal Conservancy; the Santa Cruz County Resource Conservation District, Santa Cruz County, and the City of Santa Cruz; the Santa Cruz Water Department, the Santa Cruz County Water Resources agency, and the Santa Cruz County Coastal Watershed Council; Friends of Arana and Harbor High Parent Beautification Group; and academic and/or citizens’ groups and other participants, including Balance Hydrologics, Mesiti-Miller Engineering, and the Santa Cruz City School District. Membership is open to all interested parties.

The group is coordinated by a Santa Cruz Port District intern who receives a modest salary. The group utilizes standing and special project subcommittees. The group has an office. Meetings are held twice monthly. Topics and issues are freely added to the group’s agenda at each meeting. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus. Administrative decisions are made by the coordinator after consulting with the proper groups.

From 1996 to 1999, the budget of the Arana Gulch Watershed Association has grown from nothing, to \$3,000, to now over \$100,000/year. The administrative budget for the next two years is \$175,000. Major providers of funding and in-kind services include federal agencies,

state agencies, local conservation districts, and community groups. The Natural Resources Conservation Service contributes consulting, engineering and grants. California Fish and Game funding contributes \$84,000 annually which is used for planning and organization. Funds are pending from the California Coastal Conservancy in the amount of \$61,000. The Santa Cruz County Resource Conservation District and the Community Action Board have contributed \$17,935 to be used for exotic plant removal.

Accomplishments and Ongoing Activities

The Arana Gulch Watershed Association is involved with several activities. Grants from California Fish and Game and the Coastal Conservancy totalling \$175,000 began in July 1999 to finance the development of management plans. Shared decision-making/negotiated problem-solving is ongoing and ever-changing within the group. Resource monitoring is in progress. The group has completed scientific research using a reknowned hydrologist/geomorphologist and a legendary local fish biologist. The group has completed legal or policy research and both the City and County of Santa Cruz have watershed policies written in their plans. The group has also undertaken and completed on-the-ground remediation or restoration activities including an erosion control project completed in the upper watershed, seeding projects, and exotic plant removal projects. A pampas grass brochure and a brochure about the Arana Gulch watershed have been published and the group has conducted public watershed awareness workshops. Other educational activities currently in progress include presentations planned for school business and community groups as well as a web page and watershed tours. The group is most proud of mustering support for their effort from local and technically trained people with a depth of knowledge and decades of experience.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Most participants believe the problem is being solved, and the level/rate of success is believed to be greater than that possible through other problem-solving approaches. According to the group, people have stopped just talking about degradation, and are now getting involved.

Areas of strength of this watershed initiative appear to be the adequacy of short-term funding to accomplish the group's objectives, and the helpfulness of local, state, and federal agencies. Potential weakness include the perceived inadequacy of decision-making arrangements, and the need for more representation from all interested groups. Areas identified by the group as essential components of a successful effort include: changes in federal or state law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and generation of increased public awareness of the resource or resource problem(s).

The group listed the following keys to success: (1) a champion leader; (2) local interest, support, and involvement; and (3) technical support, consulting, good will, good humor, patience, endurance, creativity, and common goals.

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Big Chico Creek Watershed Alliance

Focus of the Watershed Initiative

The Big Chico Creek watershed is located in north-central California. The focus of the group is on the entire basin, an area covering approximately 137,000 acres spread over two counties. The focus area includes forty miles of the Big Chico Creek and additional stream miles on Mud, Rock, and Sycamore Creeks. The watershed drains into the Sacramento Creek. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Chico, with a population of approximately 90,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, agriculture and/or ranching, and education.

The Big Chico Creek Watershed Alliance was formed in 1992, in response to the loss of anadromous fisheries in Big Chico Creek and its tributaries. Establishment of the group was primarily the result of the efforts of the city of Chico and grassroots activists. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use and/or management, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management, and ineffective management programs or laws. The mission/vision statement of the group is "To protect, restore, and enhance the resources of the Big Chico Creek watershed through private and public landowner participation." Specific short-term goals include: (1) protecting and

restoring anadromous fish habitat, (2) improving fish passage in the watershed, and (3) protecting habitat from development.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, National Park Service, Natural Resources Conservation Service, Environmental Protection Agency, and the US Geological Survey; the California Departments of Fish and Game, and Water Resources; the city of Chico; the Cal Water Service Company; one or more environmental groups; and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator and facilitator, funded by the CALFED program.

The group has an office, located in Chico. Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon majority rule. The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000.

Accomplishments and Ongoing Activities

The group has completed the following activities: on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. In addition, the group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, and scientific research. The group is most proud of “the removal of an agricultural pumping plant that took all of the water from Big Chico Creek during migration times for spring, fall, and late fall chinook and steelhead trout.”

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, the group believes that the problem is being solved and that the level/rate of success is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies. Areas of potential weakness include a perceived inadequacy of the decision-making process.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The

group listed the following keys to success: (1) partnerships with and education of local governments, (2) volunteer commitment to restoration and water quality monitoring, and (3) protection of the watershed through education, conservation easements, and purchases.

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Butte Creek Watershed Conservancy

Focus of the Watershed Initiative

The Butte Creek watershed is located in north-central California. The focus of the group is on the entire basin, an area covering approximately 648 square miles spread over four or more counties. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Chico, with a population of approximately 140,000. The local economy is weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, agriculture and/or ranching, and mineral and/or energy production.

The Butte Creek Watershed Conservancy was formed in 1995, in response to the need to restore the anadromous fish runs and pending local legislation regarding watershed corridor protection. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality related to fisheries, agriculture, and groundwater recharge; water supply/flow regimes related to transbasin diversions; the maintenance of fish and wildlife and/or endangered species; land-use stewardship and/or management; and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination among state, federal and other watershed groups; transboundary impacts of water transfers and wildfires; inadequate funding/attention being given to a natural resource problem; lack of local involvement in resource management; ineffective management programs or laws; and the lack of funding for educational and implementation programs. The mission/vision statement of the group is "to protect, restore, and enhance the cultural, economic, and ecological heritage of the Butte Creek watershed through cooperative landowner action." Specific short-term goals include: (1) enhancing and restoring the watershed, (2) education, and (3) reaching financial independence.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, and Fish and Wildlife Service; the California Departments of Fish and Game, Forestry, and Water Resources; one or more local government; the Western Canal Water District; the Sacramento River Preservation Trust; the Streamminders; and one or more academics or citizens. Membership is open to all interested parties, but voting is limited to property owners in the watershed. The group is directed by a coordinator, funded by CALFED, the US Fish and Wildlife Service, and For Sake of Salmon. The group utilizes subcommittees, including Recreation/Fisheries, Property Rights, Educational, and Fundraising. The group has an office, located in Chico. Meetings are held monthly. Issues are brought before the group through direct involvement and educational activities. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). The addition of a coordinator in recent years has allowed for increased grant writing and the pursuit of new funding opportunities. Major providers of funding and in-kind services include the CALFED Bay Delta Program and the California Department of Fish and Game used for anadromous fish restoration; local fundraisers; and membership dues.

Accomplishments and Ongoing Activities

The group has completed the following activities: shared decision-making/negotiated problem-solving related to the election of the Board of Directors, and scientific research in the Existing Conditions report of 1999. In addition, the group has planned or is in the process of completing the following activities: the development of a watershed management strategy by the end of 1999, on-the-ground remediation or restoration activities, publication of a quarterly newsletter, conferences/workshops, and other educational activities such as outreach to local schools.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. Areas of potential weakness include the perceived inadequacy of the decision-making process, and the inadequacy of funding to meet restoration goals.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of increased public awareness of the resource or resource problem(s), and letting the allocation of funds be determined on a more local level. The group

listed the following keys to success: (1) education, (2) good grant writing, and (3) coordination.

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Deer Creek Watershed Conservancy

Focus of the Watershed Initiative

The Deer Creek watershed is located in north-central California and provides critical spawning and rearing habitat for spring-run Chinook salmon and steelhead. The focus of the group is on the entire basin, an area covering approximately 146,000 acres spread over one county. The watershed is located at the southern end of the Cascade Range. The population of the focus area is distributed in mostly rural areas. The largest city in the region is Vina. The local economy is moderate in strength and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The Deer Creek Watershed Conservancy was formed in 1994 in response to concerns about the potential listing of the river under the state Wild and Scenic River program. Establishment of the group was the result of efforts by local landowners. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes, which are being solved by a water exchange program; the maintenance of fish and wildlife and/or endangered species; protecting existing land-uses; and general environmental degradation related to flood control, erosion, and irrigation impacts. The Conservancy also serves as a forum for communication and group actions within the Deer Creek watershed.

From an "institutional" (or administrative) standpoint, the group is concerned about too much governmental control. The mission/vision statement of the group is to preserve natural resources and private property rights, and to maintain responsible land stewardship in the watershed. Specific short-term goals include implementing watershed management strategies identified in its watershed management plan.

Structure and Functioning of the Watershed Initiative

During the planning process, the group included members from: the US Forest Service, Fish and Wildlife Service, Corps of Engineers, Environmental Protection Agency, and the US Geological Survey; the California Departments of Fish and Game, and Water Resources; the CALFED program; one or more local government agencies; two water districts; one or more environmental groups; and one or more academics or citizens. Now that the watershed plan is in the implementation phase, the preceding groups participate when they so desire.

Membership is open to all interested parties, although only landowners in the watershed may vote. The group is directed by an executive director, who is occasionally paid by grant money. Board meetings are held monthly and large stakeholder meetings are held when necessary. Issues are brought before the group by the executive director or the education outreach director. The group utilizes a formal decision-making process that depends on the Board of Directors to make final decisions, reliant upon majority rule.

The Deer Creek Watershed Conservancy has many significant funding sources. Major providers of funding and in-kind services include the US Fish and Wildlife Service in the amount of \$240,000, CALFED/EPA in the amount of approximately \$200,000, the State Water Resources Control Board in the amount of \$55,000, the National Fish and Wildlife Foundation in the amount of \$15,000, the California Department of Water Resources in the amount of \$75,000, the local Vina Resource Conservation District in the amount of \$600,000 used for restoration activities, and additional money from membership dues.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of a Watershed Management Plan in 1998, shared decision-making/negotiated problem-solving, and scientific research related to flood prevention. In addition, the group has planned or is in the process of completing the following activities: resource monitoring; on-the-ground remediation or restoration activities related to habitat restoration, fire suppression, and a flood plan; the publication of a newsletter, annual report, and membership letter; workshops on the above projects; and other educational activities such as outreach to local schools. The group is most proud of co-authoring and co-sponsoring State Assembly Bill 1413, which would preclude any future dams, diversions or impoundments on Deer Creek.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. In addition, the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state and local agencies.

The group considers the following actions to be essential to its continued problem-solving effort: on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) agency support, (2) landowner involvement and control of the process, and (3) helpful and willing participants.

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French Creek Watershed Advisory Group

Focus of the Watershed Initiative

The French Creek watershed is located in northwestern California. The focus of the group is on the upper basin, an area covering approximately 15,000 acres spread over one county. French Creek is a tributary to the Scot River, which is a tributary to the Klamath River. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Etna, with a population of approximately 1,000. The local economy is weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The French Creek Watershed Advisory Group was formed in 1990, in response to a disagreement between the US Forest Service and private timber companies over the level of timber harvest in sensitive areas. Establishment of the group was primarily the result of the efforts of the California Department of Forestry. Since its formation, the group has been mostly concerned with issues of water quality, and land-use management.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) developing voluntary strategies to solve watershed problems, and (2) improving the road system on erosive granitics.

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Friends of the Corte Madera Creek Watershed

Focus of the Watershed Initiative

The Corte Madera Creek watershed is located in northern California. The focus of the group is on the entire basin, an area covering approximately 28 square miles spread over one county. The lower portion of the watershed is primarily urban and the upper portion is mostly open spaces. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in cities/towns. The largest city in the region is San Anselmo, with a population of approximately 25,000. The local economy is strong and moderately diversified.

The Friends of the Corte Madera Creek Watershed was formed in 1994 in response to citizens concerns and a subsequent Environmental Protection Agency-funded report on the Creek by the California Regional Water Quality Control Board. Establishment of the group was primarily the result of the efforts of California Regional Water Quality Control Board, the San Francisco Estuary Project, and a small group of citizens. Since its formation, the group has been mostly concerned with issues of water quality related to sedimentation; water supply/flow regimes in the context of low summer flows that may be a limiting factor for the growth of fish; the maintenance of fish and wildlife and/or endangered species; land-use management of the urbanized portion of the watershed related to impacts such as pesticide runoff, swimming pools, and the disposal of hazardous household products; and general environmental degradation related to the loss of native vegetation and habitat.

From an “institutional” (or administrative) standpoint, the group is also concerned with the lack of local involvement in resource management, and uncoordinated management programs or laws. The mission/vision statement of the group is as follows: “Friends of Corte Madera Creek Watershed’s mission is to protect, enhance, and restore the biological, chemical and physical resources of the Corte Madera Creek watershed in order to achieve a productive and ecologically diverse natural system.” Specific short-term goals include: (1) completing components of a watershed plan, and (2) continuing to develop public education and outreach.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Corps of Engineers, National Marine Fisheries Service, the California Department of Fish and Game, the California Regional Water Quality Control Board, one or more local agency, one or more water district/organization, one or more environmental groups, one or more non-governmental organizations, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator. The group utilizes subcommittees, including a Conservation Committee, Technical Advisory Committee, and the Publicity Committee. Meetings are held monthly. Issues are brought before the group by members of the public, members of the Board, and by the co-chairs. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus or majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the CALFED program in the amount of \$50,000 used for watershed planning, a private foundation in the amount of \$25,000 used for community outreach, and private donations in the amount of \$7,000 used for projects and administrative costs.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of a volunteer education program, its watershed planning effort, and its creek restoration projects.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. Areas of potential weakness include that funding is inadequate to meet short-term goals of completing various components of a watershed plan.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) planning and implementation of goals based on sound resource assessment, (2) community participation and education which includes agencies, and (3) sound public policy with effective means of enforcement.

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Goleta Slough Management Committee

Focus of the Watershed Initiative

The Goleta Slough watershed is located in southern California. The focus of the group is on the lower basin, an area covering approximately 2,300 acres spread over southern Santa Barbara County. The population of the focus area falls within the range of 25,000 to 100,000. The largest urbanized area in the region is Goleta, with a population of approximately 75,000. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs. University, research and development, medical, and governmental jobs predominate in the area.

The Goleta Slough Management Committee was formed in 1991 in response to a proposal by the Santa Barbara Airport to add a runway that would have impacted wetlands in the Goleta Slough. Establishment of the group was initiated by the city of Santa Barbara's Airport Director, who has also financed the Committee since its inception. Since its formation, the Committee has been primarily concerned with issues of water quality, water supply/flow regimes related to flooding problems, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the Committee is also concerned with improving interagency and interjurisdictional coordination, transboundary impacts, and inadequate funding/attention being given to natural resource protection. The mission/vision statement of the group is: "(A) To prepare the Goleta Slough Ecosystem Management Plan that integrates existing plans and information and provides an environmentally sound and coordinated approach to the Goleta Slough Ecosystem. (B) Act as a committee that will: (1) Identify and resolve issues related to the management of the watershed, and (2) Serve in an advisory capacity and make recommendations to lead agencies. (C) Assist in the implementation of the management plan." Specific short-term goals include: (1) restoring historic habitats, (2) restoring diversity, and (3) improving coordination and communication to facilitate the first two goals. Over the longer term, the goals of the group are to provide an

administrative framework for the adoption and implementation of this plan, to protect and maintain the natural diversity of species, to maximize to the extent feasible the ecosystems natural diversity of resources, and to promote the ecosystem's research and public education consistent with the ecosystems functions and values. In December 1997, the city of Santa Barbara released the draft Goleta Slough Ecosystem Management Plan, which was prepared with considerable input from Committee members.

Structure and Functioning of the Watershed Initiative

The Committee includes members from: the city of Santa Barbara, the US Fish and Wildlife Service, Corps of Engineers, the California Coastal Commission, the California Department of Fish and Game, University of California at Santa Barbara, the Land Trust for Santa Barbara County, the Sierra Club, the Audubon Society, the Goleta and West Goleta Sanitary Districts, the Urban Creeks Council, the Southern California Gas Company, and miscellaneous biologists. Membership is open to all interested parties. The group is directed by a coordinator and a facilitator, funded by the Santa Barbara Airport. The group utilizes subcommittees as needed on particular issues. Meetings are held monthly. Issues are brought before the group by staff or by interested parties for future discussion. The Committee utilizes an informal decision-making process selected by the Committee during its initial formation, reliant upon consensus. The Committee advises local, state, and federal agencies on issues that relate to the Slough.

The estimated annual budget of the Committee (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include the Santa Barbara Airport in the amount of \$15,000. The cost of the draft Goleta Slough Ecosystem Management Plan was approximately \$40,000 and was financed by the Airport and through a grant from the Federal Aviation Administration.

Accomplishments and Ongoing Activities

The Committee has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, and other educational activities. The Committee is most proud of the fact that it is still functioning after nine years and that it has helped to open up lines of communication. Through the efforts of the Committee, several joint restoration grants have been submitted, funded, and completed.

Overall, the Committee considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact the level/rate of success is believed to be greater than that possible through other problem-solving approaches by the individual participants. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and

local agencies. Areas of potential weakness include the inadequacy of funding to meet the short-term goals of implementing the management plan and the ongoing costs associated with staffing the Committee.

The Committee considers the following actions to be essential to their continued problem-solving effort: modified use of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The Committee listed the following keys to success: (1) communication, (2) cooperation, and (3) shared goals.

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Humboldt Bay Watershed Advisory Committee

Focus of the Watershed Initiative

The Humboldt Bay watershed is located in northern California. The focus of the group is on the entire basin, an area covering approximately 578 square kilometers spread over one county. Humboldt Bay is one of California's largest coastal estuaries. Land-use includes industrial timberland in the upper watershed, rural residential and private timberland in the mid-watershed, and agricultural and residential/industrial in the lower watershed. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Eureka, with a population of approximately 30,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and commercial fishing.

The Humboldt Bay Watershed Advisory Committee was formed in 1996 in response to a desire for coordinated resource management planning that came out of the Humboldt Bay Watershed Symposium in 1996. Establishment of the group was primarily the result of the efforts of the Redwood Community Action Agency (Natural Resources Service Division) and the Humboldt Fish Action Council. Since its formation, the group has been mostly concerned with issues of water quality related to sedimentation and turbidity; the habitat improvement of fish and

wildlife and/or endangered species such as the coho, chinook, steelhead, and cutthroat; land-use management related to agriculture, urbanization, and timber harvesting; and general environmental degradation related to the lack of coordination by resource management agencies, land owners, and restoration groups.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management, and ineffective management programs or laws. Specific short-term goals include: (1) developing a draft watershed plan, (2) improving communication and understanding between interest groups, and (3) growing and strengthening the group.

Structure and Functioning of the Watershed Initiative

The group consists of 17 members, each with an alternate, representing stakeholder interests such as ranching, dairy farming, recreation, commercial fishing, environmental groups, citizen watershed groups, education, timber industry, local business, and watershed restoration. The group also has representatives from local, state, and federal government agencies. These members serve in an advisory role and do not vote. The group is directed by a coordinator. The group utilizes subcommittees concerned with fisheries, landuse, restoration, education, and outreach. Meetings are held monthly. Issues are brought before the group by concerned parties through the coordinator. The group utilizes a formal decision-making process selected by the group during its initial formation, seeking consensus first. If consensus is not possible, the group relies upon a supermajority of 75 percent.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. In past years, typical budgets have varied. As a result, the group has found it difficult to keep a permanent coordinator. Major providers of funding and in-kind services include the Environmental Protection Agency’s 319 program in the amount of \$250,000 used for project implementation, the California Department of Fish and Game in the amount of \$30,000 used for planning and coordination, For Sake of the Salmon in the amount of \$25,000 used for planning and coordination, the University of California Cooperative Extension in the amount of \$10,000 used for education and outreach, and other sources in the amount of \$10,000 used for planning and subcommittees.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, a coordinated resource monitoring program, on-the-ground remediation such as habitat restoration and sediment reduction activities, conferences/workshops, and other educational activities. The group is most proud of staying together and continuing to work on the plan.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern, but realizes that this will be a long-term process as the problems are highly complex. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; and the helpfulness of federal, state and local agencies. Areas of potential weakness include inadequate funding to meet the short-term goal of creating a watershed plan; the perceived lack of authority that this group has in the overall decision-making process of the local, state, and federal governments; and occasionally poorly attended meetings.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) consistency in the coordinator, (2) well-run meetings with real issues, and (3) small successes on a regular basis.

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Los Angeles & San Gabriel Rivers Watershed Council

Focus of the Watershed Initiative

The Los Angeles & San Gabriel Rivers watersheds are located in southern California. The focus of the group is on both watersheds, which are managed as one. The watersheds cover an area of approximately 1,600 square miles spread over mostly one county. The population of the focus area is almost 10,000,000. The largest city in the region is Los Angeles, with a population of approximately 4,000,000. The local economy is strong and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs. The focus area is highly urbanized, except for the surrounding mountains. The rivers are mostly concrete stormwater drains, traversing worn out old industrial areas in the southern reaches.

The Los Angeles & San Gabriel Rivers Watershed Council was formed in 1996 in response to a lack of intergovernmental and community communication. Establishment of the group was due to an interest in partnering shared by community groups, local government agencies, and others. State and federal agencies have become official liaisons to the group. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes related to stormwater problems, the maintenance of fish and wildlife and/or endangered species, land-use management, general environmental degradation, parks and open space, and habitat restoration.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management, and ineffective management programs or laws. The mission statement of the group is “To facilitate a comprehensive, multi-purpose, stakeholder driven consensus process to preserve, restore, and enhance the many beneficial uses, economic, social, environmental and biological, of the Los Angeles River and San Gabriel River watersheds eco-system through education, research, planning and mediation.” Specific short-term goals include: (1) developing lines of communication at monthly stakeholder meetings, (2) encouraging partnerships to implement the vision, and (3) public education.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Environmental Protection Agency, the US Geological Survey, the California Coastal Conservancy, the Regional Water Quality Control Board, the Santa Monica Mountains Conservancy, the cities of Los Angeles and Rosemead, the County Public Works, the Metropolitan Water District, the San Gabriel Basin Watermaster, several non-governmental organizations, Southern California Edison, and one or more academics or citizens. Membership is open to all interested parties, although voting is limited to the 15 member Board of Directors. The group is directed by a volunteer executive director. The group utilizes subcommittees as needed. The group has an office, located in Los Angeles.

Board of Director meetings are held as needed. Monthly stakeholder meetings are open to everyone. About 50 or more people regularly attend stakeholder meetings. The group prefers to do as much business as possible in these stakeholder meetings. Issues are brought before the group by stakeholders. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Budgets have grown steadily since the group’s founding. Major providers of funding and in-kind services include the Environmental Protection Agency used for public education and capacity building, the California Coastal Commission in the amount of \$10,000 used for wetlands studies and postage, the local County Sanitation Districts in the amount of \$7,500 used for underwriting the annual conference with other organizations, the Metropolitan Water District in the amount of \$10,000 used for general

support, the city of Los Angeles in the amount of \$38,000, and other local water agencies and cities.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, legal or policy research, publication of a quarterly newsletter and monthly minutes of the meetings, an annual conference, and other educational activities such as a book exploring nontraditional ways to manage stormwater. The group is also working with the State Coastal Conservancy, and heading up a local task force to identify, map, and characterize historic and current wetlands in Los Angeles County. The group is most proud of compiling a list of projects that all groups and agencies in the county want to accomplish.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include inadequate funding to meet short-term research goals, although the group believes this situation is improving.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) not blaming people for past practices, (2) respecting everyone's point of view, and (3) having a strong leader.

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Mattole Restoration Council

Focus of the Watershed Initiative

The Mattole River watershed is located in northern California. The focus of the group is on the entire basin, an area covering approximately 304 square miles spread over two counties. The Mattole River is in a mountainous, tectonically active region of the Pacific Coast. The River is home to one of the last remaining populations of genetically wild Chinook salmon stocks in California. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly rural areas. The local economy is weak and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Mattole Restoration Council was formed in 1983 in response to declining runs of salmon and watershed degradation. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of the maintenance of fish and wildlife and/or endangered species related to declining salmon populations, land-use management practices related to avoiding subdividing large areas of land, and general environmental degradation related to forestry practices and road development in sensitive areas.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and ineffective enforcement of management programs or laws. The mission/vision statement of the group is to reach the point "when restoration will no longer be needed to address the effects of our land-use practices, and the watershed and its human communities are healthy and self-sustaining." Specific short-term goals include: (1) encouraging the residents and landowners into land management practices that balance economic productivity and ecological health, (2) building community capacity toward the goal of sustainable living, and (3) actively assisting community-based cooperative land planning. Over the longer term, the goals of the group are "To develop a resource center that is widely recognized and used as a primary source of landscape, ecological, and demographic information on the Mattole watershed. To promote and expand Geographic Information System services to local restorationists, landowners and residents. To publish an updatable atlas of the watershed . . . Make contact with native peoples descendent from the Mattole and Sinkyone tribes, invite them to participate in events in the Mattole watershed, and engage them in meaningfully in our work. . . Develop a program to find and encourage employment opportunities that are compatible with our vision. Develop and strengthen collaborative ties to other restorative groups."

Structure and Functioning of the Watershed Initiative

The group interacts with the US Bureau of Land Management, National Park Service, the state Departments of Fish & Game and Forestry, the Regional Water Quality Control Board, the Mattole Salmon Group, Sanctuary Forest, Trees Foundation, the Humboldt Area Foundation, and the Redwood Community Action Agency. Membership is open to all interested parties.

The group is directed by a coordinator and facilitator funded by private grants. The group utilizes subcommittees, including a Board of Directors and Programs. The group has an office, located in Petrolia, CA. Meetings are held monthly. Issues are brought before the group at Board meetings and by concerned parties at an annual potluck dinner. The group utilizes a formal consensual decision-making process selected by the group during its initial formation, or upon a supermajority of 75 percent.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of contracts and in-kind services include the California Department of Fish & Game; the State Coastal Conservancy; the California Bureau of Land Management in the amount of \$100,000 used for watershed rehabilitation projects; and private foundations in the amount of \$100,000 used for administrative costs, educational events, and projects.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving for land-use practices, resource monitoring of forest management, scientific research on lifeforms in the watershed, on-the-ground remediation or restoration activities of roads and forests, publication of a quarterly newsletters and an annual report, conferences/workshops, and other educational activities.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground recovery. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include inadequate funding to meet short-term goals of education and systematic landscape inventory and remediation.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) cooperation of resource users within the watershed with the restoration movement, (2) development of an overall strategy for cooperation among people who live in the watershed, and (3) development of a strategy for best land-use management practices.

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Mono Lake Committee

Focus of the Watershed Initiative

The Mono Lake watershed is located in the eastern central region of California. The focus of the group is on the entire basin, an area covering approximately 700 square miles spread over one county. The Mono Basin drains the Sierra Nevada east of Yosemite National Park. Five major streams drain glacially carved canyons and then meander through alluvial sediments to Mono Lake, a large terminal saline lake. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Lee Vining, with a population of approximately 320. The local economy is moderate in strength and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of tourism and/or recreation, agriculture and/or ranching, and mining and/or energy production.

The Mono Lake Committee was formed in 1978 in response to excessive water diversions from the Mono Lake tributaries by the Los Angeles Department of Water and Power. As a result of these diversions, stream ecosystems below the diversion were destroyed and Mono Lake lost half of its volume and doubled in salinity. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality related to domestic water supplies, water supply/flow regimes related to conservation and recycling of water, maintenance of migratory bird populations, land-use management related to restoring the Mono Lake ecosystem, and general restoration activities.

From an "institutional" (or administrative) standpoint, the group is also concerned with the transboundary impacts of exporting water from the watershed to Los Angeles, inadequate funding/attention being given to fund protection and interpretation activities, and ineffective management programs or laws related to the conservation and reclamation of water. The mission/vision statement of the group is as follows: "The Mono Lake Committee is a non-profit citizen's group dedicated to protecting and restoring the Mono Basin ecosystem, educating the public about Mono Lake and the impacts on the environment of excessive water use, and promoting cooperative solutions that protect Mono Lake and meet real water needs without transferring environmental problems to other areas." Specific short-term goals include: (1) balancing tourism with the health of the local environment, (2) influencing statewide water policy to emphasize water conservation and recycling, and (3) implementing restoration plans for the Mono Basin. Over the longer term, the goals of the group are to create a sustainable water future for California and Mono Lake.

Structure and Functioning of the Watershed Initiative

The group consists of approximately 17,000 citizen members from California and all around the world. Membership is open to all interested parties who pay the required membership fee. The group is directed by a Board of Directors and two Co-Executive Directors, paid by member contributions. The group has several program directors, including Education, Policy, Communications, Outreach, and Membership. The group has two offices, located in Lee Vining and Playa Del Rey, California. Meetings are held weekly. Issues are brought before the group by staff, members, concerned parties, scientists, agencies, and local individuals. The group utilizes a formal decision-making process that is at the discretion of the Executive Directors and the Eastern Sierra Policy Director.

The estimated annual budget of the group (including the value of in-kind services) is \$700,000. Major providers of funding and in-kind services include membership dues and grant monies.

Accomplishments and Ongoing Activities

The group has completed numerous activities, including a Living Lakes Conference. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving; resource monitoring of streams, habitat, and wildlife activities; scientific research on migratory bird populations; on-the-ground restoration activities such as tree planting; the publication of a quarterly newsletter; and other educational activities such as tours, slide shows, exhibits, a website, field seminars, and the development of a digital archive of Mono Basin restoration activities. The group is most proud of “gaining a high level of protection for Mono Lake and its tributaries through litigation, legislation, education, cooperative solutions, and restoration of the degraded ecosystem.”

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, the group believes the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification in water allocation, modified use of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) cooperative

solutions, (2) avoiding transferring problems to other areas, and (3) maintaining credibility in interpreting the facts to the public.

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Newport Bay Watershed Management Committee

Focus of the Watershed Initiative

The Newport Bay watershed is located in southern California. The focus of the group is on the entire basin, an area covering approximately 115 square miles spread over one county. The watershed is highly urbanized, with some remaining areas of agriculture planned for development. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Irvine, with a population of approximately 150,000. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Newport Bay Watershed Management Committee was formed in 1998 in response to the adoption of TMDLs by the Santa Ana Regional Water Quality Control Board for sediment, nutrients, fecal coliform, and toxic substances in Newport Bay. Establishment of the group was primarily the result of the efforts of Orange County and the Santa Ana Regional Water Quality Control Board. Since its formation, the group has been mostly concerned with issues of water quality related to pollution loadings, water supply/flow regimes related to flooding and sedimentation, the loss of wetlands and the protection of endangered species in the watershed, land-use management of continued development, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, transboundary impacts, inadequate funding/attention being given to the natural resource problem, lack of local involvement in resource management, and ineffective management programs or laws. Specific short-term goals include protecting the beneficial uses of Newport Bay.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Corps of Engineers, one or more state agencies, one or more local agency, one or more water district/organization, one or more environmental groups, and one or more other participants. The Executive Committee is comprised of elected officials and the Management Committee is comprised of their staff. The group consists of county, city, and state agency staff and a representative of the various environmental groups, which are appointed by the Executive Committee. Meetings are open to the public and anyone can come and participate if they choose.

The group is directed by a coordinator and a facilitator. The group utilizes subcommittees, including Budget, Water Quality, Monitoring, and others as needed. Meetings are held monthly. Issues are brought before the group by any member. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey).

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of working together on the implementation of a sediment management plan.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, the group believes that the problem is being solved at a level/rate greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a fundamental reallocation of agency resources and priorities, modified use of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s).

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Oakhurst River Parkway Committee

Focus of the Watershed Initiative

The Oakhurst River watershed is located in central California. The focus of the group is on the middle part of the basin, an area covering approximately three square miles spread over one county. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in mostly rural areas. The largest community in the region is Oakhurst, with a population of approximately 13,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and tourism and/or recreation. Senior citizens consist of 38 percent of the community.

The Oakhurst River Parkway Committee was formed in 1992 in response to a desire to build a river walkway through the community. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality related to stream bank erosion and sedimentation, the maintenance of fish and wildlife and/or endangered species, and land-use management related to flood prevention problems.

From an "institutional" (or administrative) standpoint, the group is also concerned with ineffective management programs or laws. Specific short-term goals include: (1) restoring the river by addressing embankment degradation on Fresno River, Oak Creek and China Creek; (2) protecting the river from future encroachment; and (3) building a trail along the river/creeks in the community. Over the longer term, the goals of the group are to continue implementing the short-term goals and to complete another five miles of river restoration and pathway.

Structure and Functioning of the Watershed Initiative

The group includes partners from: the US Forest Service, Fish and Wildlife Service, Natural Resources Conservation Service, Americorps National Civilian Community Corp, the Coarsegold Resource Conservation District, the Kiwanis Club, the Soroptimists, and the California Departments of Forestry and Fire and Water Resources Agency. Membership is open to all interested parties. The group is directed by a volunteer coordinator and facilitator.

The group utilizes subcommittees, including Trail Workers. Meetings are held monthly. Issues are brought before the group through committee meetings or informal discussion. The group utilizes a formal decision-making process that is largely at the discretion of the coordinator/facilitator, reliant upon consensus.

The group has no set administrative budget, but has secured a significant amount of project funding. Major providers of funding and in-kind services include Americorps National Civilian Community Corp used for trail work, drainage, and revegetation; the Natural Resources Conservation Service used for technical assistance; the California Department of Water Resources in the amount of \$300,000 used for restoration work; the California Department of Forestry used for trail work; and the San Joaquin Valley Air Pollution District in the amount of \$285,000 used for nine pedestrian bridges.

Accomplishments and Ongoing Activities

The group has completed or is in the process of completing the following activities: the development of management plans and land-use agreements for the flood plain, resource monitoring, legal or policy research on the use agreements, on-the-ground remediation or restoration activities such as revegetation projects, the publication of a quarterly newsletter, annual workshops, and other educational activities such as River Clean Up Days each June. The group is most proud of restoring three miles of river and stream banks, building miles of trails, and installing four pedestrian bridges with mostly volunteers.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include that indoor meetings are not well attended, and the group would like to have more money to hire a part-time director.

The group considers convincing local officials to buy into the program to be essential to their continued problem-solving effort. The group listed the following keys to success: (1) people who care, (2) the ability to develop partnerships, and (3) volunteer help.

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Redwood Creek Watershed Group

Focus of the Watershed Initiative

The Redwood Creek watershed is located in the western central region of California. The focus of the group is on the entire basin, an area covering approximately 8 acres spread over one county. Redwood Creek is part of the Coastal watershed extending from a mountain face, through old growth redwoods, to the ocean. The watershed is mostly undeveloped even though it is 15 miles from San Francisco. Most of the land is owned by public agencies. The population of the focus area is less than 1,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Muir Beach, with a population of approximately 500. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Redwood Creek Watershed Group was formed in 1998 in response to the need for better communication among landowners and the need to protect the resources in the watershed. Establishment of the group was primarily the result of the efforts of the National Park Service. Since its formation, the group has mostly been concerned with issues of water supply/flow regimes, water quality related to recreational horse usage in the area, the maintenance of fish and wildlife related to the threatened Coho salmon, land-use management, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, and transboundary impacts. Specific short-term goals include increasing communication among landowners in the area. Over the longer term, the goals of the group are undefined.

Structure and Functioning of the Watershed Initiative

The group includes members from: the National Park Service, the California Departments of Parks and Recreation and Fish and Game, the Marin County Community Development Department, the Marin Municipal Water District, the Muir Beach Community Service District, the Green Gultch Farm, and local landowners. Membership is limited to two representatives from each landowner. The group is directed by a coordinator and a facilitator, funded by the National Park Service. Meetings are held monthly. Issues are brought before the group by the coordinator. The group utilizes a formal decision-making process that is largely ad hoc and unspecified, given that no major decisions have been made yet.

The group has no budget. The group is primarily a communication vehicle that is not trying to administer programs or do activities not already done by individual landowners.

Accomplishments and Ongoing Activities

The group is in the process of completing shared decision-making/negotiated problem-solving. The group is most proud of meeting, getting to know one another, and discussing current issues. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state and local agencies. The group listed the following keys to success: (1) having a paid individual to gather information, mail agendas, and follow up, (2) having very committed members who care about the watershed, and (3) keeping topics current and substantive.

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Smith River Advisory Council

Focus of the Watershed Initiative

The Smith River watershed is located in northwestern California. The focus of the group is on the entire basin, an area covering approximately 720 square miles spread almost entirely over Del Norte County. The Smith River flows undammed through redwood forests and has pristine water quality. The watershed includes a National Recreation Area, Redwood National Park, and a Wild and Scenic River area. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly rural areas. The largest cities in the region are Smith River and Gasquet, both with populations of approximately 1,200. The local economy is weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, sport fishing guides, agriculture and/or ranching, and commercial fishing.

The Smith River Advisory Council was formed in 1990 in response to problems with anadromous fish populations in the watershed. Establishment of the group was primarily the result of the efforts of the local Rural Human Services and the University of California Cooperative Extension, with additional assistance from local citizens. Since its formation, the

group has been mostly concerned with issues of the maintenance of anadromous species such as the chinook, coho, steelhead, and cutthroat; land-use management related to agricultural and forestry uses; and general environmental degradation related to recreational uses.

From an “institutional” (or administrative) standpoint, the group is also concerned with transboundary impacts on Endangered Species Act listed fish populations, inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given for enhancement/restoration activities, lack of local involvement in resource management, and ineffective management programs or laws. The mission/vision statement of the group is “to promote forums that answer questions and solve problems concerning Smith River fisheries. This purpose also involves cooperatively supporting a system-wide approach towards watershed management in the Smith River Basin.” Specific short-term goals include: (1) coordinating fishery research and enhancement efforts, (2) providing forums to discuss fishery issues of the Smith River, and (3) developing a Smith River Anadromous Fish Action Plan.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Corps of Engineers, and National Park Service; the Tolowa Indian tribe; the California Departments of Fish and Game, State Parks, Forestry, and CAL Trans; Del Norte County; the Smith River and Gasquet water districts; the Smith River Alliance; the Friends of Del Norte; Rural Human Services; CAL Trout; University of California Cooperative Extension; Humboldt State University; sport and commercial fishermen; three timber companies; a dairy farmer; three lily bulb growers; and other industry representatives. Membership is open to all interested parties. The group is directed by a coordinator, previously funded by For Sake of Salmon. The group utilizes subcommittees as needed. The group has an office, located in the University of California Cooperative Extension office. Meetings are held bi-monthly. Issues are brought before the group by individual members. The group utilizes a decision-making process that is largely ad hoc and unspecified, reliant upon majority rule.

The group has no official budget. Major providers of in-kind services and other administrative assistance include the US Forest Service (technical assistance), the Redwood National Park (general advice), the California Department of Fish and Game (technical and management assistance), Del Norte County (general program support), Rowdy Creek Hatchery (general program support), and the University of California Cooperative Extension (technical support and facilitation).

Accomplishments and Ongoing Activities

The group has completed or is in the process of completing the following activities: the development of management plans, fish and habitat monitoring, scientific research of the economic impact of natural resource industries, on-the-ground remediation or restoration activities of juvenile salmonid habitat, the publication of an anadromous fish education

brochure, a bi-annual Smith River Colloquium, and press releases on programs. The group is most proud of the Smith River Anadromous Fish Action Plan, which is currently under way.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet the short-term goals of completing the Smith River Anadromous Fish Action Plan and funding a full time coordinator.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, the generation of increased public awareness of the resource or resource problem(s), and a reduction of the Endangered Species Act process that is causing operational delays in fish recovery. The group listed the following keys to success: (1) landowner cooperation and support for recovery, (2) reduction in bureaucratic restrictions, and (3) adequate funding sources.

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Sonoma Ecology Center

Focus of the Watershed Initiative

The Sonoma Creek watershed is located in northern California. The focus of the group is on the entire basin, an area covering approximately twenty square miles spread over one county. The Sonoma Creek watershed is an area composed of many small tributaries that are mostly intermittent creeks with about five perennial creeks. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Sonoma, with a population of approximately 9,200. The local economy is strong and moderately diversified.

The Sonoma Ecology Center was formed in 1990 in response to Earth Day 1990. Establishment of the group was primarily the result of the efforts of a local citizen named Richard Dale. Since its formation, the group has been mostly concerned with issues of water quality related to nonpoint source pollution, water supply/flow regimes related to the over-depletion of ground water supplies, land-use management related to the expansion of vineyards, and general environmental degradation such as erosion caused by agricultural interests in the area.

Structure and Functioning of the Watershed Initiative

Membership is open to all interested parties. The group is directed by a coordinator and a facilitator, funded by grant money. The group has an office, located in Sonoma. Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

Accomplishments and Ongoing Activities

The group has completed or is in the progress of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, publication of newsletters and/or brochures, and other educational activities such as providing educational curriculum.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies.

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South Fork Trinity River Coordinated Resource Management Program

Focus of the Watershed Initiative

The South Fork Trinity River watershed is located in northwestern California. The focus of the group is on the entire basin, an area covering approximately 600,000 acres spread over two counties. The focus area includes the entire South Fork Trinity River, along with the Hayfork Creek. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Hayfork, with a population of approximately 2,500. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, agriculture and/or ranching, mineral and/or energy production, and government land management agencies. A large percentage of the focus area is managed by the US Forest Service.

The South Fork Trinity River Coordinated Resource Management Program was formed in 1993 in response to the "Action Plan for Restoration of Fisheries in the South Fork of the Trinity River" prepared by the Pacific Watershed Association. Establishment of the group was primarily the result of the efforts of the Natural Resources Conservation Service, the Trinity County Resource Conservation District, the Pacific Watershed Association, and local citizens. Since its formation, the group has been mostly concerned with issues of water quality related to TMDLs, water supply/flow regimes related to the temperature impacts of water diversions, the maintenance of spring and fall chinook and steelhead populations, and land-use management related to sedimentation problems.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, and ineffective state forest management programs or laws. The mission/vision statement of the group is to "develop and implement a coordinated resource management plan for the recovery of the fisheries and economies of the South Fork Trinity River." Specific short-term goals include: (1) producing a working TMDL implementation plan, and (2) closing or upgrading roads on Forest Service lands that currently contribute to sedimentation problems. Over the longer term, the goals of the group are to restore anadromous fisheries in the South Fork Trinity River.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Natural Resources Conservation Service, Environmental Protection Agency, the Tsungwe Indian Tribe, the Nor-el-Muk Tribe of Wintus, the Regional Water Quality Control Board, the Trinity County Resource Conservation District, the Trinity County Water District, Save Our Forest Environment, Pacific Watershed Associates, Citizens for Better Forestry, and various local citizens. Membership is open to all interested parties. The group is directed by a coordinator, funded by grant money. The group utilizes subcommittees, including TMDLs. Meetings are held every six weeks. Issues are brought before the group by an agenda developed prior to

meetings. The group utilizes a formal decision-making process that is largely at the discretion of the coordinator, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the Natural Resources Conservation Service in the amount of \$2,000 used for technical assistance and administrative costs, the California Department of Fish and Game in the amount of \$30,000 used for coordination and project funding, and the local Resource Conservation District in the amount of \$2,000 used for newsletter printing and other administrative costs.

Accomplishments and Ongoing Activities

The group is in the process of completing the following activities: the development of management plans for critical watersheds, shared decision-making/negotiated problem-solving, monitoring of fish populations and channel profiles, scientific research related to sedimentation, on-the-ground remediation or restoration activities of old logging roads, publication of quarterly newsletters, and riparian workshops. The group is most proud of watershed collaboration.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape, and the listing of the steelhead as endangered. The group listed the following keys to success: (1) communication, (2) scientific verification, and (3) cooperation.

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Stoney Creek Watershed Project

Focus of the Watershed Initiative

The Stoney Creek watershed is located in northern California. The focus of the group is on the entire basin, an area spread over three counties. The area is rich in natural history. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Orland, with a population of approximately 5,000. The local economy is moderate in strength and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching.

The Stoney Creek Watershed Project was formed in 1991 in response to concerns about the actions of the US Army Corp of Engineers. Establishment of the group was primarily the result of the efforts of citizens and/or activists. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with the inadequate interagency or interjurisdictional coordination, transboundary impacts, and ineffective management programs or laws. The historic reluctance of the Corps of Engineers to work with local residents is a particular concern. Specific short-term goals include: (1) education, (2) management of natural resources, and (3) cost-benefit ratio applied to all work. Over the longer term, the goals of the group are to keep the watershed in private hands so the tax base of the counties are not eroded and common sense prevails.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Bureau of Reclamation, Fish and Wildlife Service, and Natural Resources Conservation Service; one or more local agencies; one or more water district/organization; one or more environmental groups; one or more non-governmental organizations; and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator. Meetings are held as necessary. Issues are brought before the group by concerned parties. The group utilizes a decision-making process that is largely ad hoc and unspecified, reliant upon consensus.

The group has no budget. Private parties contribute all necessary funding and in-kind services.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or

restoration activities, and other educational activities including public forums. The group is most proud of protecting private property rights.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring showing on-the-ground improvements and the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the adequacy of funding to meet short-term goals. Areas of potential weakness include that local agencies have only been slightly helpful, and federal and state agencies have not been at all helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification in water allocation, and changes in federal or state law. The group listed the following keys to success: (1) knowledge, (2) education, and (3) luck.

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Topanga Watershed Committee

Focus of the Watershed Initiative

The Topanga watershed is located in southern California. The focus of the group is on the entire basin, an area covering approximately 18 square miles spread over one county. The population of the focus area is 12,000. The largest city in the region is Topanga, with a population of approximately 12,000. There is not a significant percentage of the region's population employed in natural resource jobs.

The Topanga Watershed Committee was formed in 1998 in response to concerns about flood hazard reduction. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, and transboundary impacts. Specific short-term goals include: (1) reducing flood hazard, (2) maintaining good water quality, and (3) restoring and preserving biological resources. Over the longer term, the goals of the group are to help create an integrated management plan coordinating local land-use planning with a watershed focus.

Structure and Functioning of the Watershed Initiative

The group includes members from: the National Park Service, Natural Resources Conservation Service, one or more state agencies, one or more local agencies, one or more water district/organizations, one or more environmental groups, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator and a facilitator. The group utilizes subcommittees to organize workshops and coordinate streambank stabilization. Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process that is largely ad hoc and unspecified, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include local organizations in the amount of \$1,000 used for administrative costs, and the California Department of Conservation in the amount of \$5,000.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, other educational activities, and creek cleanup days. The group is most proud of its Creek Cleanup Day in 1999 and its workshop on septic systems in March-May 1999.

Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; well-attended and efficiently run meetings; and the adequacy of funding to meet short-term goals. Areas of potential weakness include that there is a perceived inadequacy of the decision-making process.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) a variety of stakeholder involvement, and (2) having jurisdiction over the problem.

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Trinity River Task Force

Focus of the Watershed Initiative

The Trinity River watershed is located in northwestern California. The focus of the group is on the entire basin, an area covering approximately 3,000 square miles spread over two counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Weaverville, with a population of approximately 3,500. The watershed is also home to endangered steelhead and salmon populations. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and tourism and/or recreation. Nearly 80 percent of the watershed is federally owned.

The Trinity River Task Force was formed in 1974 in response to concerns about the damming of the Trinity River and the subsequent decline in salmon and steelhead populations. Establishment of the group was primarily the result of the efforts the California Department of Water Resources, Trinity County, the Hoopa Valley Tribe, and the federal Bureau of Reclamation. Since its formation, the group has been mostly concerned with issues of water quality related to temperature and sediment; the maintenance of fish and wildlife and/or endangered species, most importantly the Coho Salmon, steelhead, and chinook; and land-use management related to erosion and sedimentation.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to the natural resource problem, and inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) completion of the Trinity River environmental impact statement/review and a record of decision for Trinity River flows by the Department of Interior, (2) the prioritization of monitoring efforts, and (3) on-going watershed restoration efforts. Over the longer term, the goals of the group are to restore Trinity River fish and wildlife to levels that existed prior to the construction of the Trinity River Diversion of the Central Valley Project.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, the National Marine Fisheries Service, and the Natural Resources Conservation Service; the Yurok, Hooa Valey and Karnk Indian Tribes; state agencies including Water Resources and Fish and Game; the local Trinity and Humboldt Counties and the Trinity County Conservation District; one or more water district/organizations; one or more environmental groups including the Friends of the Trinity River and CAL Trout; and one or more non-governmental organizations including the timber industry and commercial fishermen. Membership is limited to members identified in the Federal Advisory Committee Act charter for the Trinity River, although all interests can attend meetings. The group is directed by a coordinator funded by the Bureau of Reclamation. The group utilizes subcommittees, including Monitoring, Watersheds, Mainstream Restoration, and Wildlife. Meetings are held monthly. Issues are brought before the group by the coordinator who assembles an agenda based on member input. The group utilizes a formal decision-making process that is determined by the Trinity River Task Force, reliant upon a super-majority of 67 percent.

While the independent administrative budget of the Task Force is below \$20,000, the estimated annual budget of the group is \$1 million per year. Major providers of funding and in-kind services include the US Bureau of Reclamation and the Natural Resources Conservation Service in the amount of \$5.1 million used for all restoration, administration and field work; and the state Departments of Fish and Game and Water Resources in the amount of \$300,000 used for fish monitoring, restoration grants, and engineering.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, scientific research related to hatcheries, legal or policy research on the implications of a land purchase among others, on-the-ground remediation or restoration activities, workshops on monitoring, and other educational activities including an Adopt-a-Watershed curriculum and a Tribal Youth Program. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring of water quality and fish monitoring, on-the-ground remediation or restoration activities, and the publication of a newsletter. The group is most proud of the restoration of Grass Valley Creek and the reduction of sediment inputs to the Trinity River, along with the modernization of the Trinity River Hatchery.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) bottom to top management, (2) more water for fish, and (3) trust among participants.

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Union Slough Watershed Improvement Program

Focus of the Watershed Initiative

The Union Slough watershed is located in northern California in the Central Valley. The focus of the group is on the entire basin, an area covering approximately 20 square miles of Yolo County. The upper watershed consist of about 10 sheep and cattle ranches, while the lower watershed consists of about 60 farms. The Union Slough is a subwatershed of the Willow Slough. The population of the focus area is less than 1,000, with the majority of the population distributed in mostly rural areas. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching.

The Union Slough Watershed Improvement Program was formed in 1999 in response to the need to provide farmers and ranchers with technical and financial support to implement conservation activities focused on improving water quality and enhancing wildlife habitat. Establishment of the group was primarily the result of the efforts of the Yolo County Resource Conservation District and the National Audubon Society of California, and followed earlier problem-solving efforts involving voluntary participation by farmers and ranchers in the Natural Resources Conservation Service's cost-sharing programs. Since its formation, the group has been mostly concerned with issues of water quality, fish and wildlife habitat

enhancement, land-use management, and general environmental degradation from pollution sources.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and the lack of local involvement in resource management. Specific short-term goals are to work with farmers and ranchers to plan and implement a set of conservation activities as demonstration projects within the watershed. Over the longer term, the goals of the group are to (1) maintain and enhance the physical and economic conditions for agriculture, (2) decrease the cost of vegetation maintenance along canals, (3) minimize erosion and topsoil loss, (4) improve water quality, (5) improve the quantity and quality of wildlife habitat, (6) decrease problems associated with flooding, and (7) increase groundwater recharge.

Structure and Functioning of the Watershed Initiative

The group receives technical assistance from federal, state, and local agencies, including: the US Fish and Wildlife Service, Corps of Engineers, the Natural Resources Conservation Service, the Environmental Protection Agency, the California Department of Fish and Game, the Yolo County Flood Control and Water Conservation District, and the University of California at Davis. Participation in the program is limited to farmers/ranchers in the area. The group is directed by a coordinator employed by the National Audubon Society and funded by the CALFED program. The group has an office, located in the Yolo County Resource Conservation District office. Full group meetings are held approximately twice yearly, while individual meetings with farmers/ranchers occur frequently. Watershed issues were identified through the development of a watershed management plan, which involved facilitated meetings with stakeholders. Issues identified in the plan are now discussed individually with landowners during the planning of conservation projects. The group utilizes a formal decision-making process that is largely ad hoc and unspecified because there is little group decision-making. Rather, decisions are made with individual landowners.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). The National Audubon Society of California received a CALFED grant and Yolo County Resource Conservation District received funding from the State Water Resources Control Board through an Environmental Protection Agency 319 grant to assist in funding the program.

Accomplishments and Ongoing Activities

Initial funding for this program will go to assist local landowners implement activities in six different conservation areas, including: upper watershed riparian restoration, upper watershed rangeland restoration, construction of tailwater ponds, revegetation of irrigation canals and drainage ditches, and lower watershed slough restoration. The group has also planned conferences/workshops, which will include practical “how to” field days. The group is most proud of working with farmers and ranchers to get conservation projects on the ground.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. The group hopes that the project will serve as a catalyst to convince others to get involved. Areas of strength of this watershed initiative appear to be the adequacy of funding to meet short-term goals, and the helpfulness of federal, state, and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) working with individual resource users, (2) understanding the resource users perspective and needs, and (3) demonstrating on-the-ground solutions to problems.

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Yuba Watershed Institute

Focus of the Watershed Initiative

The Yuba watershed is located in north-central California. The focus of the group is on the upper and middle basin, an area covering approximately 300 square miles spread over one county. Elevations in the watershed range from 1,200 to 5,000 feet. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is North San Juan, with a population of approximately 150. The local economy is weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, agriculture and/or ranching, and mineral and/or energy production.

The Yuba Watershed Institute was formed in 1989 in response to forest issues on public lands and water issues on the rivers. Establishment of the group was primarily the result of the efforts of local citizens and the US Bureau of Land Management. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, maintenance of the endangered spring chinook run, land-use management related to forest management, general environmental degradation related to mining created erosion, real estate development, and county zoning.

From an “institutional” (or administrative) standpoint, the group is also concerned with lack of local involvement in resource management, and ineffective management programs or laws. Specific short-term goals include: (1) reducing forest fuel loads, (2) altering terms of timber sales, and (3) stopping water grabs by developers.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Bureau of Land Management, logging interests, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator, funded by donations. In addition, the group is administered by a Board of Directors. The group utilizes subcommittees, including Mining, Logging, Biological Inventories, Newsletter, and Programs. Meetings are held monthly. Issues are brought before the group by email and conversation. The group utilizes a formal decision-making process that is based on Roberts Rules of Order, reliant upon majority rule. The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000.

Accomplishments and Ongoing Activities

The group has completed or is in the process of completing the following activities: the development of a forest management plan for some BLM acreage, resource monitoring, scientific research, on-the-ground remediation or restoration activities related to fuel removal, the periodic publication of a newsletter, conferences/workshops, and other public education activities. The group is most proud of surviving ten years.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of the US BLM and state and local agencies. Areas of potential weakness include that relations with the local US Forest Service District Ranger have been weak, but are recently improving.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased

public awareness of the resource or resource problem(s). The group listed staying in touch with the grassroots community base as the key to success.

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Chapter 7

Selected Watershed Initiatives in the Colorado Region



Source: Hydrologic Unit Map of the United States, USGS, 1980. Orig. Cartography by John P. Fradkin, July 1995. Updated by CU Cartography Lab March 2000.

Phoenix, Tucson, Las Vegas, Albuquerque, and Denver.

The Colorado River Basin is characterized by tremendous geographic diversity and vast reach. From its headwaters in central Colorado, the Colorado mainstem winds its way out of the Rocky Mountains, down through the Grand Canyon, and out across the Mojave Desert through Southern California and into Mexico. Including its tributaries, the basin covers parts of seven states and 244,000 square miles—approximately one-twelfth the continental United States.

In most years, the river no longer reaches its historic outlet into the Pacific Ocean, illustrating the formidable strains placed on the river by agriculture and urban growth. The river is a major water supply for several southwestern cities, including Los Angeles, San Diego,

While undeniably an engineering masterpiece, for many the dams on the Colorado River are the ultimate symbol of the West's shortcomings regarding water resources management (Fradkin, 1981). Endangered species issues exist on most stretches of the river system, as do concerns about salinity and other nonpoint source pollutants. Despite the existence of two interstate water allocation compacts, interstate water wars are seemingly a chronic feature of Colorado River management. A further complication is the unusually strong federal presence in the region. Landownership in the basin is 56 percent federal, 19 percent private, 16.5 percent tribal, and 8.5 percent state (Weatherford and Brown, 1986).

Given this geographic and institutional complexity, it is not surprising that the watershed initiatives of the region show great variability. Similar variability is seen in the state programs for watershed management, which are homogeneous only to the extent that such approaches tend to much less ambitious and elaborate than those found in the Pacific Northwest (NRLC, 1998).

Dolores River Watershed Forum

Focus of the Watershed Initiative

The Dolores River watershed is located in southwestern Colorado. The focus of the Dolores River Watershed Forum is on the entire basin, an area spread over 3 counties. There is a significant trans-basin diversion of water from the basin. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Cortez, which gets its water from this watershed, with a population of approximately 8,000. The local economy is strong and moderately diversified, featuring natural resource jobs mostly in the sectors of agriculture.

The Dolores River Watershed Forum was formed in 1998 in part as a response to the recognition by the Dolores Water Conservation District that it was the only entity that had jurisdiction over the entire basin as well as the responsible entity for all trans-basin diversions. As a result, establishment of the group was primarily the result of Dolores Water Conservation District and Montezuma and Dolores counties. Since that time, the group has been mostly concerned with issues of water supply/flow regimes related to developing more water for the fish below McPhee Dam, monitoring of water quality, and fostering a holistic perspective in regional water issues. Two focus areas are: (1) minimum stream flows below the McPhee Dam, and (2) the river upstream of the town of Dolores.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the lack of local involvement in resource management. Specific short-term goals include: (1) using the forum as an education/communication vehicle, (2) addressing specific interest in a "sub-topic" structure, and (3) addressing needed actions through sub-topic groups. Over the longer term, the goals of the group are to provide a forum where all stakeholders in the watershed can be heard and coordinated.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, National Park Service, Natural Resource Conservation Service, Environmental Protection Agency, the U.S. Geological Survey, one or more Indian tribes, many state natural resource agencies, many local governments, three water districts/organizations, many environmental groups, many non-

governmental organizations, and several academics and citizens. Membership is open to all interested parties.

The group is directed by a coordinator. There is both a "core planning" governmental group and a steering committee made up of volunteers. The group does not have an independent office. Meetings are generally held two times per year, but special meetings are occasionally called. Issues are brought before the group spontaneously, then topics are prioritized by all participants. The group is currently non-decisional. Decisions are made within the subtopic/special interest groups. The group currently has no budget, although the Dolores Water Conservation District provides in-kind services.

Accomplishments and Ongoing Activities

The Dolores River Watershed Forum has completed two workshops on Federal Reserved water rights. The group has the following activities in progress: shared decision-making/negotiated problem-solving between the sub-topic/special interest groups, and water quality monitoring. The group has the following activities planned: on-the-ground remediation or restoration activities (e.g., a fish habitat improvement project), and the publication of newsletters and/or brochures. The group is most proud of dispersing the facts concerning federal reserve water rights.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern. The group considers the following actions to be essential to their continued problem-solving effort: substantial modifications in land-use practices, voluntary behavior changes by local resource user groups, generation of additional technical data or knowledge, and the generation of public awareness of the resource problem(s). Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; efficiently run and/or well-attended meetings; and the helpfulness of local, state, and federal agencies. The group identified the following keys to success: (1) leadership, (2) education and dialogue, and (3) collaboration.

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Dry Creek Basin Coordinated Resource Management Plan

Focus of the Watershed Initiative

The Dry Creek watershed is located in southwestern Colorado. The focus of the Dry Creek Basin Coordinated Resource Management Plan is on the entire basin, an area covering approximately 112,000 acres spread over one county. The population of the focus area is less than 1,000, with the majority of the population distributed in rural areas. The largest city in the region is Norwood, with a population of approximately 500. The local economy is moderately strong and moderately diversified, featuring natural resource jobs mostly in agriculture.

The Dry Creek Basin Coordinated Resource Management Plan was formed in 1991, primarily as a result of the desire of the Bureau of Land Management and a major landowner in the basin to initiate a watershed planning effort. Establishment of the group was primarily the result of contributions by the Bureau of Land Management, the Colorado Department of Wildlife, the San Miguel Basin Soil Conservation District, and the Colorado branch of the Center for Holistic Resource Management, and followed earlier problem-solving attempts involving mostly isolated and individual efforts by private landowners and agencies. Since its formation, the group has been highly concerned about the following issues: water quality as demonstrated by significant salinity and sediment loading from Dry Creek into the San Miguel River, fish and wildlife maintenance and/or endangered species, and big game habitat quality (Gunnison Sage Grouse).

From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to the natural resource problem, and the lack of local involvement in resource management. The group has a three part mission/vision statement that includes: promoting the rural-based community with economic stability and a healthy environment; protecting forms of economic production to sustain quality of life for basin residents; and providing clean water, stable and productive soils, and sustainable plant and animal life. Specific short-term goals include: (1) sage brush thinning, (2) removal of silt from existing reservoirs, and (3) maintaining desired plant communities with an emphasis on grazing and big-game habitat.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Bureau of Land Management, Natural Resource Conservation Service, Environmental Protection Agency, US Geological Survey, one or more state natural resource agencies, one or more local government, one or more environmental group, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator funded by the Natural Resources Conservation Service as a colateral duty. The group has a facilitator and utilizes subcommittees, which are assigned to complete specific tasks/projects. The group has an office, located in Norwood at the San Miguel Soil Conservation District office. Meetings are held as needed. Decisions are made

utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the following (with percentage of overall budget in brackets): the Environmental Protection Agency's section 319 grants (30 percent) used for meeting established goals and objectives, the Natural Resources Conservation Service (12 percent), the Bureau of Land Management (12 percent), the Colorado Department of Wildlife (11 percent), San Miguel Basin Conservation District (3 percent), San Miguel County (4 percent), San Miguel Weed Board (2 percent), Rocky Mountain Elk Foundation (1 percent), and private landowners (25 percent).

Accomplishments and Ongoing Activities

The Dry Creek Basin Coordinated Resource Management Plan has completed the following activities: the development of management plans and the current implementation of those plans; on-the-ground remediation or restoration activities such as vegetation treatments, water developments, fencing, seeding, and grazing management; the publication of newsletters and/or brochures; and other educational activities such as tours. The group is in the process of completing the following activities: shared decision-making/negotiated problem-solving, and resource monitoring. The group is most proud of implementation activities that have produced improved vegetation and reduced the amount of bare soil.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Most participants believe that progress is being made in solving the problem. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include that funding is inadequate to meet short-term goals.

Factors listed by the group as essential components of their continued problem-solving effort include: a fundamental reallocation of agency resources and priorities, and an on-the-ground modification of the physical landscape. The group listed the following keys to success: (1) cooperation among stakeholders, (2) money, and (3) sincere motivation on the part of key individuals (action people) to effect positive change.

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Eagle River Watershed Committee

Focus of the Watershed Initiative

The Eagle River watershed is located in central Colorado. The focus of the Eagle River Watershed Committee is on the entire basin, an area covering approximately 970 square miles spread over mostly Eagle County. The Eagle River has an annual average water flow of 415,000 acre feet. Elevations in the watershed range from 6,100 feet to 14,003 feet. There are 120 natural lakes and 8 reservoirs in the watershed. Over 80 percent of region is located on National Forest and Bureau of Land Management lands, some of which have wilderness status.

The permanent population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in towns. The largest city in the region is Vail, with a population of approximately 8,000 annually and 30,000 seasonally. The local economy is strong and very diversified, relying mostly on recreation, tourism, and real estate development.

The Eagle River Watershed Committee was formed by Eagle County in 1996 in order to oversee and assist the County in the implementation of the Eagle River Watershed Plan. The creation of the Eagle River Watershed Plan was funded by a National Park Service assistance program. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes such as maintaining optimum instream flows; water quality related to preventing sediment/nutrient loading despite high rates of urban growth; fish and wildlife maintenance related to maintaining a coldwater trout fishery; and land-use and/or management such as implementing best management plans on all levels as it relates to water quality, general environmental degradation, and over-use of the river.

From an “institutional” (or administrative) standpoint, the group is also concerned with issues relating to inadequate group funding and participation, and the apparent lack of interest on the part of various state agencies in accomplishing the watershed group’s goals. The group’s vision/mission statement is to “Oversee the continued implementation of the Eagle River Watershed Plan, and to outline a collaborative, local philosophy for protecting and improving water quantity, quality, wildlife habitat and recreational opportunities, and promote compatible land-use practices, as well as educate the public.” Specific short-term goals include: (1) Completing a river access improvement project, (2) Completing and analyzing a river inventory project, and (3) Organizing a Eagle River Basin summit. Over the longer term, the goals of the group include: developing an action plan, providing information/education, seeking grant funding, and coordinating water quality/quantity information and monitoring.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Colorado Division of Wildlife, North West Colorado Council of Governments, one or more local governments, the Eagle River Assembly, Trout Unlimited, and the Gore Range Natural Science School and "River-Watch" educators. Membership is open to all interested parties. The group is directed by a coordinator whose time is donated by Eagle County. The group uses a facilitator and subcommittees, including Education, Recreation, Wildlife, and Implementation. Meetings are held other every other month. Issues are brought before the group by a pre-prepared agenda. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The group is largely funded by Eagle County and grants. However, it is currently in the process of revitalizing itself as a more structured non-profit organization that will seek membership and stakeholder participation in funding. There is no typical budget; rather, in the past the group and its associated watershed budget has been funded with general County programmatic budgeting for the fiscal year concerned.

Accomplishments and Ongoing Activities

The Eagle River Watershed Committee has completed the following activities: the publication of an educational newsletter and a recreation access map. In addition, the group recently completed a restored and improved river access site near Edwards, utilizing native vegetation and riverside stream-bank restoration and stabilization techniques. The project involved local donations from many businesses and the donated labor of school children. The group has the following activities in progress or planned: resource monitoring, on-the-ground remediation or restoration activities such as river access improvements, organizing the Eagle River Basin Summit, and other educational activities. The group is most proud of creating a recreation access map.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. The group believes the level/rate of success is greater than that possible through other problem-solving approaches as shown by the implementation of new water quality protection standards in Eagle County. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; and well-attended and efficiently run meetings. Areas of potential weakness include: inadequate funding to meet short-term goals; the group does not have a full time coordinator; and local, state, and federal agencies have been only moderately to slightly helpful.

The group considers the following activities to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, increased public awareness of the resource or resource

problem(s), and a greater financial commitment of users and stakeholders. The group listed the following keys to success: (1) funding/committed staff, (2) participation of stakeholders and community commitment, and (3) long-range vision.

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Gila Monster Watershed Council

Focus of the Watershed Initiative

The Gila and San Francisco watersheds are located in southeastern Arizona and southwestern New Mexico. The focus of the Council is on the both basins, an area covering approximately 13,000 square miles spread over four or more counties. The topography of the region includes coniferous forests to desert scrub/grassland. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Safford, with a population of approximately 12,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of mineral and/or energy production, and agriculture and/or ranching. The watershed consists of 17 percent private lands, with the remaining land controlled by federal, state, and tribal governments.

The Gila Monster Watershed Council was formed in 1993-94, in response to concerns about the nonpoint source provisions of the Clean Water Act. Establishment of the group was primarily the result of the efforts of the Arizona Department of Environmental Quality and the New Mexico Environment Department. Additional assistance in creating the Council was provided by the US Forest Service. The Gila Monster Watershed Council serves as an umbrella group for four smaller advisory groups in these watersheds. These four advisory groups come together in the Gila Monster Watershed Council to coordinate their efforts and exchange information. Since its formation, the group has been mostly concerned with issues of water quality related to turbidity, endangered species, watershed degradation related to fire suppression, and the erosion of the tax base attributable to the loss of private farmland in the valley.

From an “institutional” (or administrative) standpoint, the group is also concerned with the lack of cooperation from the US Fish and Wildlife Service, transboundary impacts in New Mexico and Arizona of management fragmentation among several agencies, inadequate funding/attention by the US Forest Service to controlled burns, lack of local involvement and trust in federal resource managers, and ineffective management programs or laws directed by non-locals. The mission/vision statement of the group is: “To develop a coordinated, interstate, inter-regional effort to implement partnering-based water quality programs for holistic management of the upper Gila watershed. Specific short-term goals include: (1) applying projects on the ground, and (2) securing additional grants.

Structure and Functioning of the Watershed Initiative

The Council includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Corps of Engineers, Natural Resources Conservation Service, Environmental Protection Agency, the US Geological Survey, one or more state agencies, local agencies (including a local soil conservation district), environmental groups, non-governmental organizations, and academics and citizens. Membership is open to all interested parties, but voting members must live on or own property in the watershed. The Council is directed by a coordinator, funded by grants. The group has two offices, located in Silver City, NM and Safford, AZ. Meetings are held quarterly. Issues are brought before the Council by members. The Council utilizes a formal decision-making process that is outlined in the by-laws and the Board of Directors rely upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the Environmental Protection Agency used for funding the coordinator’s position and for projects, the US Forest Service and Natural Resources Conservation Service used for funding the coordinator’s position and for projects, the Bureau of Reclamation used for web-page maintenance, the Arizona Department of Environmental Quality and the New Mexico Environment Department used for technical and administrative assistance, and the local Resource Conservation and Development Councils used for technical and administrative assistance.

Accomplishments and Ongoing Activities

The Council is in the process of completing the following activities: the development of management plans consolidated from various geographic regions in the watershed, shared decision-making/negotiated problem-solving, resource monitoring, scientific research on treating the watershed with chemicals, on-the-ground remediation or restoration activities such as streambank stabilization and salinity controls in the upper watershed, conferences/workshops, and other educational activities at county fairs. The Council is most proud of getting all the partners together.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed Council appear to be the perceived adequacy of the decision-making process, well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state and local agencies. Areas of potential weakness include that the Council feels it needs to recruit more members and additional activity may require more meetings.

The group considers the following actions to be essential to their continued problem-solving effort: changes in the Endangered Species Act, and a substantial modification of US Forest Service practices. The group listed the following keys to success: (1) good science and wise resource decisions, (2) cooperation and support, and (3) commitment.

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Gunnison Basin/Grand Valley Water Quality Forum

Focus of the Watershed Initiative

The Gunnison River and the Grand Valley watersheds are located in western Colorado. The focus of the Gunnison Basin/Grand Valley Water Quality Forum is on the entire Gunnison River Basin and the Grand Valley basin, an area covering 4 or more counties. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Grand Junction, with a population of approximately 35,000. The local economy is strong and highly diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, and agriculture.

The Gunnison Basin/Grand Valley Water Quality Forum was formed in 1997, primarily to address issues of water quality related to the impacts from urban, suburban, and agricultural water users. The Colorado State University Cooperative Extension program played an important role in starting the group. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, the lack of local involvement in resource management, and inadequate interagency or interjurisdictional coordination. The mission/vision statement of the

group is to educate, inform and understand; improve water management; prevent pollution; and maintain and/or improve water quality. Specific short-term goals include: (1) raising awareness of the issues, and (2) beginning to talk about solutions.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Natural Resource Conservation Service, U.S. Geological Survey, the Pollution Prevention Program of the Colorado Water Quality Control Division, Shavano Soil Conservation District, Colorado River Water Conservation District, the Mesa County Soil Conservation District, the Grand Junction Drainage District, the Uncompahgre Valley Water User's Association, the Sierra Club, High Country Citizens Alliance, Montrose Cattlewomen, Plateau Valley Association, Painted Sky Resource Conservation and Development District, Gunnison Basin Power, Colorado Soil Conservation Board, the Grand Valley Water Users Association, and Colorado State University Cooperative Extension. Membership is open to all interested parties.

The group is directed by a facilitator and does not utilize subcommittees. Meetings are held monthly. Issues are brought before the group by simply raising issues at the meetings. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include the US Bureau of Reclamation and US Geological Service, and the Colorado Division of Water Quality's Pollution Prevention Grant.

Accomplishments and Ongoing Activities

The Gunnison Basin/Grand Valley Water Quality Forum has completed the following activities: the publication of a brochure listing the group's issues, mission and participants; and the group held a regional conference on nonpoint source pollution in February of 1998. The group has the following activities planned or in progress: presentations and discussions on issues and a brochure on solutions. The group is presently focused on producing a video on nonpoint source pollution, which will describe what people can do about the problem. The group is most proud of the regional conference.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the increased awareness and interest in solutions. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the adequacy of funding to meet short-term goals. The federal government has been moderately helpful, and the state

government has been very helpful. Areas of potential weakness include that local governments have been only slightly helpful.

The group considers the following actions as likely to be essential to their continued problem-solving efforts: modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) having a serious problem to address; (2) being reasonable, sensible and responsible; and (3) listening and caring.

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Lake Mead Water Quality Forum

Focus of the Watershed Initiative

Lake Mead is located in southern Nevada. The watershed is within the Las Vegas Valley with 12,000 foot high Spring Mountain Range on the west and Lake Mead to the east. The focus of the Lake Mead Water Quality Forum is on the entire basin, an area covering approximately 700,000 acres spread over 1 county. The population of the focus area is greater than 1 million, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Las Vegas, with a population of approximately 1.2 million. The local economy is strong and moderately diversified, reliant primarily on gaming/tourism as well as recreational uses of Lake Mead.

The Lake Mead Water Quality Forum was formed in 1996, primarily as a result of a national water quality assessment report published in November of 1996 by the US Geological Service which focused on the Las Vegas wash and Lake Mead contaminants. Establishment of the group was facilitated by the National Park Service, the Nevada Division of Environmental Protection, the Southern Nevada Water Authority, and citizen/activist groups. Formation of the group followed earlier problem-solving attempts involving uncoordinated state laws and water quality programs.

Since its formation, the group has focused on issues of water supply/flow regimes, such as return flow credits from treated wastewater that are important to the southern Nevada water

supply; water quality in the Las Vegas wash which consists of urban runoff and sewage effluent from city and county plants; and the maintenance of fish and wildlife and/or endangered species such as the Razorback Sucker (endangered) found in Lake Mead (critical habitat) and recreational fishing. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, nonpoint pollution sources associated with a former industry causing groundwater problems that reach the lake, general environmental degradation, and inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) protecting human health and environment, (2) improving water quality of Las Vegas Wash and Lake Mead, and (3) working together in a coordinated effort.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Bureau of Reclamation, Fish and Wildlife Service, National Park Service, Natural Resource Conservation Service, Environmental Protection Agency, U.S. Geological Survey, one or more state natural resource agencies, one or more local governments, one or more water districts/organizations, and one or more academic or citizens groups. Membership is limited to entities dealing with water quality issues in the Las Vegas Valley and Lake Mead.

The group is directed by a coordinator and a facilitator funded by the state of Nevada. The group utilizes subcommittees, including sediment deposition, and stormwater pathogens. Meetings are held monthly. Issues are brought before the group by any of the 21 members who identify issues. Decisions are made utilizing a process that is at the discretion of the coordinator/facilitator.

The group has no budget. Major providers of in-kind services include the National Park Service, US Geological Service, and the Bureau of Reclamation used for research, studies, and sampling; and the Southern Nevada Water Authority, City of Las Vegas, and the City of Henderson.

Accomplishments and Ongoing Activities

The Lake Mead Water Quality Forum is in the process of completing water quality sampling and endocrine disruption studies. Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. The group believes the level/rate of success is greater than that possible through other problem-solving approaches because they now have a coordinated effort to identify and mitigate issues of water quality.

Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet top priority issues.

The group considers the following actions to be essential to their continued problems solving efforts: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) coordinated effort, (2) issue identification and agreement, and (3) pooling of resources.

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Little Colorado River Multiple Objective Management Group

Focus of the Watershed Initiative

The Little Colorado River watershed is located in central Arizona. The focus of the Little Colorado River Multiple Objective Management Team is on the entire basin, an area covering approximately 17 million acres spread over northeastern Arizona and northwestern New Mexico. It is the second largest watershed in Arizona. Land ownership in the watershed is divided as follows: 48 percent Native American land, 23 percent private land, 14 percent national forest land, 10 percent state trust land, and 4 percent Bureau of Land Management land. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Flagstaff, with a population of approximately 50,000. The local economy is weak and not diversified. Navajo and Apache counties rank 7th and 8th nationally for the lowest per capita income.

The Little Colorado River Multiple Objective Management Group was formed in 1997 in response to reoccurring flood damage and sedimentation. Establishment of the group was primarily the result of efforts by Navajo County. Since its formation, the group has focused on issues of water supply/flow regimes including investigating new sources, water quality related to sedimentation, floodplain use and/or management, improving fish and wildlife habitat, and general environmental degradation. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being

given to a natural resource problem, the lack of local involvement in resource management, transboundary impacts, and inadequate interagency or interjurisdictional coordination.

The mission/vision statement of the group is “to maintain and enhance the resources of the Little Colorado River Watershed by fostering partnerships, education and communication among stakeholders and by facilitating local strategies and projects in support of the vision statement.” Specific short-term goals include: (1) establishing a watershed plan, (2) funding a coordinator, and (3) educating and involving local stakeholders. Long-term goals of the group include: enhancing quality of life by reducing the risk and economic impacts of floods and other natural disasters, increasing recreational opportunities, preserving cultural heritage, improving water quality, and increasing opportunities to conserve and use water resources.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service; the Bureau of Reclamation; the Fish and Wildlife Service; the Corp of Engineers; the National Park Service; the Natural Resources Conservation Service; the Environmental Protection Agency; the US Geologic Survey; the Navajo, Hopi, and Zuni tribes; the Arizona Departments of Environmental Quality, Water Resources, and Game and Fish; one or more local governments; one or more water districts/organizations; the Nature Conservancy; one or more non-governmental organizations; one or more academic or citizens groups; and other participants. Membership is open to all interested parties.

The group is directed by a coordinator funded by the local government and a facilitator funded by the National Park Service. The group utilizes subcommittees, including Education, Stakeholder Outreach, Outreach, Data Inventory, Projects, and Funding. The group has an office, located in Holbrook. Meetings are held bi-monthly. Issues are brought before the group by public participation. Decisions are made utilizing a consensus-based process established during the group’s formation.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the Natural Resources Conservation Service and National Park Service used for facilitation and planning, the Arizona Departments of Environmental Quality and Water Resources used for planning and meetings, and various conservation districts and counties in the watershed used for planning and meetings.

Accomplishments and Ongoing Activities

The Little Colorado River Multiple Objective Management group has completed the following activities: the development of management plans, holding two workshops to involve all stakeholders and define issues, and the publication of newsletters and/or brochures. The group is in the process of resource monitoring and other educational activities. The group is most

proud of bringing together state, local stakeholders, and federal entities to address and network common issues.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern because they believe the level/rate of success is greater than that possible through other problem-solving approaches. In addition, the group feels it has been a success in bringing stakeholders together to recognize and discuss the watershed. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals

The group listed the following actions as essential to their continued problem-solving efforts: voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) collaboration, (2) trust building, and (3) finding common ground.

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North Fork River Improvement Association

Focus of the Watershed Initiative

The North Fork of the Gunnison River watershed is located in western Colorado. The focus of the North Fork River Improvement Association is on the middle basin, an area covering approximately 968 square miles spread over 2 counties. The North Fork converges with the main stem of the Gunnison River north of the Gunnison Gorge and the Black Canyon of the

Gunnison National Park. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Paonia, with a population of approximately 1,500. Land-use consists primarily of cattle and sheep ranches, fruit orchards, and cropland. Eighty percent of all privately owned land in the watershed is used for agricultural purposes. Extractive industries include underground coal mining, gravel mining, and logging. The rich fish and wildlife resources in the upper watershed supplement the general economy with tourism and outdoor recreation. Sustainable agriculture and maintaining the existing rural quality of life are top priorities for this community.

The North Fork River Improvement Association was formed in 1996 as a volunteer coalition to investigate the possibility of rehabilitating the North Fork of the Gunnison River and its associated habitat for the benefit of the entire community. The group was formed initially in response to excessive streambank erosion throughout a 16 mile stretch of the River between Paonia and Hotchkiss. The goals of the group grew quickly to include reliable irrigation diversions and habitat enhancement. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem.

The mission statement of the group is “To maintain the traditional uses of the river while improving stream stability riparian habitat and ecosystem along the North Fork of the Gunnison River.” Specific short-term goals include: (1) community education and outreach; (2) researching cause and effects of hydrological processes in the watershed; (3) developing and constructing floodplain rehabilitation/restoration demonstration projects to improve channel stability, irrigation diversions, and riparian habitat; and (4) building organizational networking and capacity.

Structure and Functioning of the Watershed Initiative

The Board of the North Fork River Improvement Association is made up of 8 to 12 representatives of farmer/ranchers, gravel miners, environmentalists, homeowners, irrigation companies, and recreationists. The group has one paid staff coordinator who directs the group. Funding for this position comes from various agency and private sources. The group has an office, located in Hotchkiss, Colorado. Meetings are held monthly. Issues are brought before the group by members, the project coordinator, advisory groups, and agencies. Decisions are made utilizing a process that is largely ad hoc and unspecified, generally reliant upon consensus. Membership is open to all interested parties.

The group uses a technical advisory group to stay abreast of government policy changes, funding programs, and the individual technical expertise of various agencies. The technical advisory group is made up of representatives from the following agencies: the US Forest Service, the US Fish and Wildlife Service, Bureau of Reclamation, US Bureau of Land Management, Corps of Engineers, Natural Resource Conservation Service, Environmental Protection Agency, U.S. Geological Survey, the Colorado State Soil Conservation Board, Colorado Water Conservation Board, Colorado Department of Health and Environment,

Colorado Division of Wildlife, the Delta Soil Conservation District and the Delta County Commissioners, Colorado State University, and Colorado River Water Conservation District.

The estimated annual budget of the group (including the value of in-kind services) is between \$50,000 to \$75,000. This support comes from the Environmental Protection Agency in the form of a Community Based Assistance Grant, the Colorado State Soil Conservation District in the form of a matching grant, the local Delta Soil Conservation District used for administration and technical assistance, private foundations, and members. The organization has been successful in developing a wide range of partners to provide cash and in-kind donations in order to fund education programs and construction of restoration projects.

Accomplishments and Ongoing Activities

Since its inception, the North Fork River Improvement Association has begun a campaign of public education through community meetings, newsletters, educational brochures, local radio interviews, float trips, and display exhibits at community events. It has made an effort to interview and understand the concerns of all landowners along the river in order to develop a comprehensive and holistic approach to community directed river management. Membership has subsequently grown from 15 to 120 dues paying members in three years.

In 1996, the group was awarded its first grant from the Environmental Protection Agency and the State Soil Conservation Board's matching grant program to perform a morphological assessment of the most heavily impacted reach of the North Fork River. The group has also partnered with the Bureau of Reclamation for field survey assistance, the US Forest Service for aerial photos, and Delta County for Geographic Information System support and property mapping.

In 1998, the group completed the preliminary design for a demonstration project on the North Fork to illustrate available, cost-effective technology necessary to restore proper riverine function to a very badly damaged section of the river. The design was a collaboration between the group, the Corp of Engineers, the Natural Resources Conservation Service, the Environmental Protection Agency, the Soil Conservation District, private consultants, and local landowners and was based on the recommendations of the morphological assessment. One of the prime objectives is to construct a reliable irrigation diversion to promote sustainable agriculture in the valley while eliminating the need for bulldozers in the river to divert water. This innovative design will allow fish to migrate upstream, safe passage for recreation boats, effective movement of bedload, and an increase of instream flows by metering irrigation water at the point of diversion instead of in the ditch. Other objectives include bank stabilization through innovative bioengineering techniques, enhancement of fish and wildlife habitat, rehabilitation of the floodplain by removing or relocating existing dikes and expanding the effective floodplain, the creation of new shallow water wetlands, and the construction of a morphological balanced channel with increased sinuosity. A diverse and broad range of partners were developed to fund construction of the project and construction began in December of 1999. Construction of this 1.5 mile project is scheduled to be completed by April 2000. This project is intended to be the first in a series of projects aimed at restoring a 16-mile

reach of the North Fork of the Gunnison River and is a model of community collaboration investing in a sustainable and improved quality of life.

Work is currently underway to finalize a watershed action plan that will address the issues of all stakeholders in the watershed. This plan is the end result of many facilitated community meetings and the invaluable assistance of Stewardship Initiatives of Boulder, CO. The plan will be used to organize and prioritize future projects in the watershed. The organization is also working closely with the Earth Sciences Department of Colorado State University. This project is designed to understand the effects of Paonia Reservoir on restoration efforts downstream. This study is scheduled to begin in April 2000 and to be completed in 2 years.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. The group believes that planning is progressing at a good rate. Areas of strength of this watershed initiative appear to include well-attended and efficiently run meetings, and the helpfulness of federal and state agencies. Areas of potential weakness include: the inadequacy of the size, composition, and structure of the group related to the lack of sufficient community representation; the perceived inadequacy of decision-making arrangements; inadequacy of funding to meet short-term goals, and the lack of assistance from local government.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) cooperation, (2) consensus, and (3) participation of stakeholders.

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Pine River Watershed Group

Focus of the Watershed Initiative

The Pine River watershed is located in southwestern Colorado. The focus of the group is on the entire basin, an area spread over one county. The Pine River is a tributary of the San Juan

River. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Bayfield, with a population of approximately 1,100. The local economy is moderate in strength and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of tourism and/or recreation, and agriculture and/or ranching. The watershed is adjacent to the rapidly growing city of Durango.

The Pine River Watershed Group was formed in 1997 in response to a water quality study of the nearby Vallecito Reservoir. Establishment of the group was primarily the result of the efforts of the local La Plata County Planning Commission. Since its formation, the group has been mostly concerned with creating a baseline of water quality in the whole watershed, including the Vallecito Reservoir. In addition, the group is concerned with issues of water quality related to residential impacts, as well as livestock management impacts.

From an "institutional" (or administrative) standpoint, the group is also concerned with ineffective management programs or laws related to the lack of leadership on the issue from the county, and inadequate interagency or interjurisdictional coordination. The mission/vision statement of the group is to "develop a collaboration that works to improve water quality and quantity by being a clearinghouse of information, an advisory group, a conduit for worthy projects in the watershed, and a source of research on the watershed." Specific short-term goals include: (1) raising public awareness of water issues as determined by ideas, projects, and messages of the watershed group; (2) maintaining or improving water quality so it meets or exceeds state or tribal standards; (3) improving decision-making capacities of decision-makers in the Pine River Watershed; (4) maintaining or improving ecosystem health; and (5) being involved in the conservation process, and working to ensure that there is sufficient water for all users in the watershed.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Reclamation, Natural Resources Conservation Service, the US Geological Survey, the Southern Ute Indian Tribe, state agencies including the Division of Wildlife and the Department of Public Health and the Environment, one or more local governments including La Plata County, one or more water districts/organizations including the Pine River Irrigation District, one or more environmental groups, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator, funded by the Environmental Protection Agency. Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. The San Juan Resource Conservation and Development Council acts as a parent organization for grant administration and other non-profit activities. Major providers of funding and in-kind services include (with the percentage of the group's overall budget in brackets): the Environmental Protection Agency (95 percent) used for seed money and core

funding, and the County (5 percent) used for postage and copying. Other funded activities help to increase the impact of the watershed initiative and the amount of money available for research and monitoring. For example, the Vallecito Volunteer Monitoring Program (VVMP) costs approximately \$100,000 per year, of which 60 percent is paid by EPA, 30 percent is volunteer time, and 10 percent comes from Southern Ute Indian Tribe, the San Juan Resource Conservation District, and private funding. An additional \$30,000 is being pursued to pay for data management and interpretation for the VVMP.

Accomplishments and Ongoing Activities

The group is planning to conduct water quality monitoring in the future. The group is most proud of the VVMP. Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies.

Areas of potential weakness include the frequently spotty attendance at meetings. In addition, since the Pine River watershed is currently a relatively healthy watershed, funding for the type of proactive protection efforts the group is seeking is hard to find. The group laments that much of the federal and state money is earmarked for solving problems, rather than preventing them.

The group considers the following actions to be essential to their continued problem-solving effort: the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) empowering the group members, (2) obtaining project funding, and (3) outreach to the general public.

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Rabbit Valley Watershed

Focus of the Watershed Initiative

The Rabbit Valley watershed is located in southern Utah. The focus of the group is on the entire basin, an area covering approximately 46,000 acres spread over Wayne county, with the headwaters in Garfield and Piute counties. Capital Reef National Park is in the center of the focus area. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Loa, with a population of approximately 600. The local economy is weak and moderately diversified. There is a significant percentage of the regions population employed in natural resource jobs in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The Rabbit Valley watershed program was formed in 1992 in response to an application for special project funding from the Agricultural Stabilization and Conservation Service, now called the Farm Service Agency. Establishment of the group was primarily the result of the efforts of federal agencies and local government. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use and/or management, and general environmental degradation from pollution sources.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, transboundary impacts, and inadequate funding/attention being given to a natural resource problem. Specific short-term goals include securing funding for farm projects to improve the use and conservation of irrigation water. Over the longer term, the goals of the group are to coordinate management of the federal land in the county along with the private land to improve water quality in the Fremont River Basin. Wayne county is only 2.8 percent private land.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service, National Resources Conservation Service, the Farm Service Agency, the local Fremont River Soil Conservation District and the Wayne County government, the Utah State Department of Environmental Quality, the Fremont Irrigation Company, and the Teasdale Irrigation Company. The group is directed by a coordinator and utilizes subcommittees. Meetings are held quarterly. Issues are brought before the group by members.

The group utilizes a formal decision-making process that is at the discretion of the coordinator, reliant either upon consensus or majority rule. The group has no budget. Major providers of in-kind services include (with percentage of overall contribution in brackets) the Natural Resources Conservation Service (20 percent), Wayne County (20 percent), Fremont River Soil

Conservation District (20 percent), Farm Service Agency (20 percent), and Utah State Lands and Forestry and Utah Department of Environmental Quality (20 percent).

Accomplishments and Ongoing Activities

The group is in the process of completing the following activities: development of management plans, resource monitoring in conjunction with the Utah Department of Environmental Quality, on-the-ground remediation or restoration activities such as annual tree planting projects, and other educational activities such as an annual poster contest in local schools. The group is most proud of obtaining funding from the Environmental Protection Agency for waste control facilities for two local dairy operations.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. The group considers the following actions to be essential to their continued problem-solving effort: the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem.

Areas of strength of this watershed initiative appear to be well-attended and efficiently run meetings; the perceived adequacy of the decision-making process; and the helpfulness of federal, state, and local agencies. Areas of potential weakness include that the funding is inadequate to meet short-term goals. The group listed the following keys to success: (1) local direction and policy review, (2) local federal agency involvement, and (3) local stakeholder participation from the beginning.

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Roaring Fork Conservancy

Focus of the Watershed Initiative

The Roaring Fork watershed is located in western Colorado. The Roaring Fork River runs approximately 45 miles from Independence Pass to Glenwood Springs. The focus of the Roaring Fork Conservancy is on the entire basin, an area covering approximately 1,451 square miles and hundreds of rivers, creeks, streams, reservoirs, lakes, and ponds spread over 3 counties. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Aspen, with a year-round population of about 5,000. The local economy is strong and highly diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation (esp. skiing), tourism, construction, agriculture, professional services, energy, and a small amount of mining.

The Roaring Fork Conservancy was formed in Basalt in 1996 in response to development pressure in the area. Establishment of the group was primarily the result of collaboration between a developer, the local government, and citizens/activists. Since its formation, the Conservancy has been primarily concerned with issues of water supply/flow regimes in Ruedi Reservoir, water quality, general environmental degradation, education programs with schools and for the public, and riparian conservation. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to natural resource protection. The mission/vision statement of the group is “To protect and enhance the habitat of the Roaring Fork River and its corridor. To promote awareness of the importance of the river corridors, and to ensure the quality of life for the people in the Roaring Fork Valley.” Specific short-term goals include: (1) establishing a watershed water quality monitoring program, (2) expanding educational programs in local schools, and (3) placing more riparian habitat under the protection of conservation easements. Over the longer term, the main goal of the Conservancy is to establish a river center.

Structure and Functioning of the Watershed Initiative

The Roaring Fork Conservancy board includes members from local government, an environmental organization, private business, non-governmental organizations, and other participants. The Board meets monthly and utilizes subcommittees. Issues are brought before

the Board at meetings and decisions are made utilizing majority rule with dissenting votes noted.

The Conservancy has an office located in Basalt, Colorado. The organization has an executive director and four program directors, along with three part-time employees. It does not operate under a membership system, but rather sends bi-annual newsletters to anyone who is interested in the organization. Funding for education and special projects is obtained through grants and partnering with governmental and non-governmental organizations. Fees are charged for some programs to cover their administrative and material costs. Funding for operations costs are primarily covered through donations from the public, private businesses, and local fishing guide shops. The estimated annual budget of the group (including the value of in-kind services) is more than \$300,000.

Accomplishments and Ongoing Activities

The Roaring Fork Conservancy has completed the following activities: the development of management and strategic plans, the publication of six newsletters and one brochure, participation/organization of wetland and riparian revegetation projects, installation of a US Geological Survey gauging station, formulation of river development policies with the town of Basalt, and the establishment of field programs.

In addition, the group has the following activities planned or in progress: a stormwater runoff study with the town of Basalt, a study about the effects of magnesium chloride use on the valley's rivers, watershed-wide water quality sampling and testing, river education classes in six valley schools, preservation of 150 acres of riparian habitat in conservation easements, and acting in an advisory capacity to valley governments and developers regarding river issues.

Overall, the group considers itself to be quite successful in addressing the natural resource problems of concern, as illustrated by monitoring data and the number of calls for information and help in problem-solving. In addition, most participants believe the problem is being solved. The board is very active in decision-making and fundraising. Areas of strength lie in the Conservancy's ability to gather pertinent information and respond to challenges/issues knowledgeably and quickly. Areas of potential weakness include the inadequacy of funding to address large-scale conservation efforts and rising operations costs. However, the Conservancy is working on developing cost-sharing partnerships and embarking on a capital campaign.

The group listed the following actions as essential to their continued problem-solving effort: further wetland and riparian conservation and enhancement projects, the generation of additional technical data or knowledge about the resource, and the increased public awareness about the watershed ecosystem. The group listed the following keys to success: (1) partnerships, (2) education, and (3) awareness.

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Routt County Water Quality Committee

Focus of the Watershed Initiative

The Yampa watershed is located in northwestern Colorado. The focus of the group is on the entire watershed within Routt County. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in cities/towns. The largest city in the region is Steamboat Springs, with a population of around 9,000 permanent residents and 18,000 seasonal residents. The local economy is moderately strong and diversified. A significant percentage of the region's population is employed in natural resource jobs in the sectors of tourism and/or recreation, agriculture and/or ranching, and mining and/or energy production. The area is experiencing rapid growth in the resort community, yet retains a strong agricultural/mining base.

The Routt County Water Quality Committee was formed in 1995 in response to concerns about rapid growth and environmental degradation. Establishment of the group was primarily the result of the efforts of the Routt County Department of Environmental Health. Since its formation, the group has been mostly concerned with issues of water quality related to nonpoint sources, the maintenance of fish and wildlife and/or endangered species, and land-use management as it affects water quality. The group feels there is little real data available to provide people with the information they need to protect the water quality because water quality is generally perceived to be good.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, the lack of local involvement in resource management, and ineffective management programs or laws as they relate to nonpoint sources of pollution. Specific short-term goals include: (1) establishing riparian and water body setbacks for new construction, (2) establishing local erosion and sediment control guidelines and regulations, and (3) implementing other provisions of regional plans. Over the longer term, the goals of the group are to protect and improve area water quality.

Structure and Functioning of the Watershed Initiative

The group is composed of citizens from all walks of life who have had concerns about the health of the Yampa and Elk Rivers and their tributaries. In addition, the group also includes members from: the US Forest Service, the Natural Resources Conservation Service, and county and city governments. Membership is not structured. The group is directed by a coordinator, funded by the Routt County Department of Environmental Health. The group utilizes subcommittees, including education and regulation. Meetings are held as necessary when needs or issues are raised. Issues are brought before the group by a combination of the issues that were identified as important at the inception of the group and by the issues presented by the Routt County Department of Environmental Health. The group utilizes a decision-making process that is largely ad hoc and at the discretion of the coordinator.

The group has never had a budget. The Routt County Department of Environmental Health contributes in-kind services used for planning, coordination of meetings, and presentations.

Accomplishments and Ongoing Activities

The group has completed several conferences on nonpoint source issues. In addition, the group has planned or is in the progress of completing resource monitoring related to water quality and nutrients, and legal and policy research on erosion and sediment regulations. The group is most proud of assisting in the development and subsequent adoption of water body setbacks and regulations for new construction in Routt County. The group is also proud of studying and recommending local erosion and sediment control guidelines and regulations.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group, and the perceived adequacy of the decision-making process. The meetings are well-attended and efficiently run, and state and local agencies have been moderately helpful. Areas of potential weakness might include a perceived lack of political will and lack of strong support from state and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, on-the-ground protection of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or potential resource problem(s). The group listed the following keys to success: (1) identification of issues, (2) involvement of all potentially affected parties, and (3) development of key action items and follow through.

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San Carlos/Safford/Duncan Non-Point Source Management Zone

Focus of the Watershed Initiative

The San Carlos/Safford/Duncan watersheds are located in southeastern Arizona and southwestern New Mexico. The focus of the San Carlos/Safford/Duncan Non-Point Source Management Zone is on the upper basin, an area covering approximately 700,000 acres spread over 2 counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Safford, with a population of approximately 10,000. The local economy is strong and moderately diversified, featuring natural resource jobs mostly in the sectors of energy and mining.

The San Carlos/Safford/Duncan Non-Point Source Management Zone was formed in 1994 in response to nonpoint source pollution concerns. Establishment of the group was primarily the result of state agencies, citizen/activist groups, and a non-profit organization. The San Carlos/Safford/Duncan Non-Point Source Management Zone is one of four advisory groups within the Upper Gila Watershed. Collectively, these four advisory groups are known as the "Gila Monster" initiative (described earlier) and work together to address nonpoint source pollution issues in an area covering nearly 13,000 square miles in southwestern New Mexico and southeastern Arizona. This collaboration of Arizona-New Mexico advisory groups was recently designated as a "Showcase Watershed" by the federal Clean Water Action Committee.

The creation of the group followed earlier problem-solving attempts involving laws and the encouragement of Best Management Practices. Since the group's formation, it has been primarily concerned with issues of water supply/flow regimes, water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation. From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the lack of local involvement in resource management, transboundary impacts, and inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) implementing small upland demonstration projects, (2) securing 501(c)(3) non-profit status, and (3) recognizing and including local

entities. Over the longer term, the goals of the group include improving the overall health of the watershed by addressing nonpoint source pollution.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Natural Resource Conservation Service, Environmental Protection Agency, and U.S. Geological Survey; Indian tribes including the San Carlos Apache; one or more state natural resource agencies; one or more local governments including the Gila Valley Natural Resources Conservation District; one or more water districts/organizations; one or more environmental groups; one or more non-governmental organizations; and one or more academic or citizens groups including the Eastern Arizona College, People for the West, and Desert Technologies. Membership is open to all interested parties. Federal and state agencies are technical advisors only and do not vote.

The group is directed by a facilitator funded by the Arizona Department of Environmental Quality. Meetings are held monthly. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon majority rule.

The group has no formal budget. However, the group has negotiated with various governmental entities to undertake restoration and research activities in the focus area. For example, the Bureau of Reclamation has been contracted to perform a Fluvial Geomorphology study in the Gila River to the border of New Mexico at a cost of \$1.2 million dollars. Through a contract with the Arizona Geological Survey, the advisory group has identified 25 wells that are discharging highly saline water to the Gila River, significantly reducing water quality and diminishing the productivity of the surrounding soils. Two of these wells have been remediated at a cost of \$440,000. Finally, the group has contracted with Arizona State University and Eastern Arizona College to do a biological survey of the watershed.

Accomplishments and Ongoing Activities

The San Carlos/Safford/Duncan Non-Point Source Management Zone has developed a 10 year management plan and a mechanism for shared decision-making/negotiated problem-solving. In addition, the group has the following activities planned or in progress: resource monitoring, on-the-ground demonstration projects activities, publication of an annual report, a state-wide conference of watersheds, and other educational activities such as outreach seminars at the County fair. The group is most proud of planning projects for long-term water quality improvements. In addition, the group feels the strength of the watershed process is that it brings decision-making processes made by government agencies down to the local level and forces federal and state governments to forge a solution with local input.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of

this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals. In addition, the group feels they need 501(c)(3) tax-exempt non-profit status to ensure some organizational stability by moving away from pure reliance on volunteers.

The group believes the following actions are essential to their continued problem-solving efforts: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) a bottom-up approach to watershed development, (2) generational visioning, and (3) customized planning.

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San Miguel Watershed Coalition

Focus of the Watershed Initiative

The San Miguel watershed is located in southwestern Colorado. The focus of the San Miguel Watershed Coalition is on the entire basin, an area covering approximately 6,000,000 acres spread over 2 counties. Elevations in the watershed range from 14,000 feet to 5000 feet and include every life zone on the Colorado Plateau. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is the resort town of Telluride, with a population of approximately 2,000. The local economy is strong and not diversified, featuring natural resource jobs mostly in the sectors of recreation, tourism, and agriculture.

The San Miguel Watershed Coalition was formed in 1995 in response to concern over the impacts of recreation and the need to bring all parties together. Establishment of the group was primarily the result of the federal Bureau of Land Management and the Telluride Institute. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes, water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and the general environmental degradation caused by industrial scale

recreation. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with the lack of local involvement in resource management, and inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) coordinating resource management, and (2) providing a forum for information exchange.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, National Park Service, Natural Resource Conservation Service, Environmental Protection Agency, US Geological Survey, the Colorado Division of Wildlife, one or more local governments, one or more water districts/organizations, one or more environmental groups, one or more non-governmental organizations, one or more academic or citizens groups, and other participants. Membership is open to all interested parties.

The group is directed by a coordinator funded by federal and local grants and a facilitator funded by the National Park Service. The group utilizes subcommittees, including Management Coordination, Oversight of Operations, and task forces on specific issues. The group has an office, located in Placerville. Meetings are held twice monthly. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation.

The estimated annual budget of the group (including the value of in-kind services) falls within the range of \$20,000 to \$75,000. In past years, budgets have varied depending on the timing and availability of grant monies. Major providers of funding and in-kind services include: the National Park Service, the Bureau of Land Management, and the US Environmental Protection Agency used for projects and operations; local agencies including the County and towns in the area used for operations; and other local funding used for operations and projects.

Accomplishments and Ongoing Activities

The San Miguel Watershed Coalition has completed the following activities: the development of a management plan called the *San Miguel Watershed Plan, A Collaborative Management Framework*; the publication of biannual newsletter and brochures on the watershed plan; ongoing conferences/workshops; and other educational activities such as Living Classrooms and the Leave No Trace programs. In addition, the group has the following activities planned or in progress: coordinating information that has resulted in shared decision-making; resource monitoring of instream conditions and a basin wide river restoration assessment; scientific research on source water protection, watershed delineation, wetlands mapping, and a Geographic Information System atlas; and on-the-ground remediation or restoration activities including the war on weeds, revegetation, channel restoration and basin-wide river restoration. The group is most proud of unifying people around the notion of thinking and managing from a watershed perspective and promoting the idea that the task at hand is to become an expert on the place in which they live.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that problems are identified and actions are taken to address the problem. Areas of strength of this watershed initiative appear to be well-attended and efficiently run meetings, and the helpfulness of local and federal agencies. Areas of potential weakness include the inadequacy of size, composition, and structure of the group related to the group being understaffed; the perceived inadequacy of decision-making arrangements; the inadequacy of funding to meet short-term goals of paying a coordinator; and the lack of assistance from state agencies.

The group considers the following actions to be essential to their problem-solving efforts: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) paid staff, (2) inclusive structure, and (3) government and agency buy-in.

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Southwest Utah Planning Authorities Council

Focus of the Watershed Initiative

The Virgin River watershed is located in southwest Utah. The focus of the Southwest Utah Planning Authorities Council is on the middle basin, an area covering 9,624,076 acres spread over 4 counties. The watershed ranges in elevation from 2,000 feet to over 11,000 feet and includes all or part of three National Parks, three National Monuments, a national recreation area, and four wilderness areas with an additional 18 wilderness study areas. Over 96 percent of two of the counties are federal lands, with the other two counties having over 60 percent federal lands. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is St. George, with a population of approximately 48,000. The local economy is strong and highly diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, and energy and mining. One part of the focus area is

dependent solely upon agricultural and service sector jobs and the other part is highly diversified.

The Southwest Utah Planning Authorities Council was formed in 1993 in response to the need to establish better lines of communication to resolve problems and to establish a forum for dealing with issues before they became problems. Establishment of the group was primarily the result of Utah Governor Leavitt's efforts. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes; water quality; the maintenance of fish and wildlife and/or endangered species; land-use management; general environmental degradation; and the enhancement of the cultural, social and economic well-being of the residents of the area which demands a holistic approach to all issues. From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the lack of local involvement in resource management, transboundary impacts, and inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) enhancing intergovernmental cooperation and public participation, (2) serving as a non-binding forum for discussion and consensual resolution of issues, and (3) serving as a clearinghouse for the exchange of information relevant to the planning processes of the participants.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, the National Park Service, one or more Indian tribes, one or more state natural resource agencies, one or more local governments, and one or more water districts/organizations. Membership is open to all interested parties. However, the Steering Committee is limited to federal, state, local and tribal government decision-makers. The group is directed by a coordinator and facilitator, and utilizes subcommittees, including Wild and Scenic Rivers, Visitor Count Methodology, and other subcommittees as needed.

The group has an office, located in Cedar City. Meetings are held bi-monthly. Issues are brought before the group by the membership of the Steering Committee. Decisions are made utilizing a process that is reliant upon a consensual but non-binding process. If one or more members choose not to participate with an issue and the rest of the group wants to take action, that is permissible.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. The budget is basically used for mailers and meetings. Staff time is donated.

Accomplishments and Ongoing Activities

The Southwest Utah Planning Authorities Council has completed the following activities: the development of management plans, including a Memorandum of Understanding for dealing with the Wild and Scenic River designation; shared decision-making/negotiated problem-solving involving interagency procedures to deal with Wild and Scenic River designation; and

on-the-ground remediation or restoration activities which include a working plan to deal with endangered species on the Santa Clara and Virgin Rivers. In addition, the group is currently involved with resource monitoring activities in Washington and Iron Counties. The group is most proud of surviving and functioning to build partnerships and working to keep open lines of communication.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Moreover, most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals.

The group believes the following actions are essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) communication, (2) willingness to listen, and (3) willingness to talk.

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Upper Little Colorado River Watershed

Focus of the Watershed Initiative

The Upper Little Colorado River watershed is located in eastern Arizona. The focus of the group is on the upper basin, an area covering approximately 50,000 acres spread over one county. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in a mix between rural areas and towns. The largest city in the region is Springerville, with a population of approximately 6,000. The local economy is weak and moderately diversified. The local economy is strongly dependent on natural resources, including timber and grazing.

The Upper Little Colorado River Watershed group was formed in 1997 in response to a lack of dependable irrigation water, water loss, and a need to conserve irrigation water by replacing open ditches with underground pipelines. Establishment of the group was primarily the result of the efforts of the federal government. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes, water quality related to turbidity, and fish and wildlife maintenance and/or endangered species problems associated with the Little Colorado River Spindace.

From an “institutional” (or administrative) standpoint, the group is also concerned with the lack of local involvement in resource management. The mission/vision statement of the group is “managing the water and natural resources to meet the diverse interests in the watershed and to enhance the quality of life.” Specific short-term goals include: (1) establishing objectives for solving problems, (2) developing a comprehensive plan or strategy, and (3) coordinating resources and funding sources. Over the longer term, the goals of the group are to improve the irrigation systems of Springerville and the surrounding areas and to improve the Little Colorado River riparian corridor and fisheries.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service; Corps of Engineers; Natural Resources Conservation Service; the Hopi Indian Tribe; the Arizona Departments of Environmental Quality, Water Resources, and Game and Fish; the towns of Eager and Springerville; the Round Valley Water Users Association; the Apache Natural Resources Conservation District; and local people. Membership is open to all interested parties. The group is directed by a facilitator. The group utilizes subcommittees, including the Steering Committee and the Technical Committee. Meetings are held monthly. Issues are brought before the group through group participation and by representatives of agencies. The group utilizes a decision-making process that is largely ad hoc and unspecified, reliant upon consensus.

The group has no budget, however, the Arizona Department of Water Resources does allocate \$200,000 for regional planning and inventory costs.

Accomplishments and Ongoing Activities

The group has completed conferences/workshops, which have consisted of town meetings, watershed tours, and training from other successful watershed groups. In addition, the group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, water quality and quantity monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, the publication of newsletters and/or brochures, and other educational activities which will include the development of an educational center and a demonstration

project through the Natural Resources Conservation District. The group is most proud of its conferences/workshops.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; the well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification in water allocation, and modified operation of existing facilities. The group listed the following keys to success: (1) cooperation, (2) vision, and (3) perseverance.

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Verde Watershed Association

Focus of the Watershed Initiative

The Verde River watershed is located in central Arizona. The focus of the Verde Watershed Association is on the entire basin, an area covering approximately 5.2 million acres spread over 3 counties. The watershed contains four ecoregions from high desert to Juniper-Pine. It is mountainous and dry with periodic monsoonal precipitation events. The population of the focus area is greater than 1 million, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Phoenix, with a population of over one million. The local economy is strong and highly diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, and energy and mining. In addition, the area is undergoing considerable residential and commercial growth.

The Verde Watershed Association was formed in 1992 in response to the desire of local people to have a say in the watershed's future. Establishment of the group was primarily the result of a state agency, the Cocopai Resource Conservation District. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes, water quality, the

maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation. The group deals with all issues at the same time.

From an “institutional” (or administrative) standpoint, the group is also concerned that inadequate funding/attention is being given to the natural resource problems. The mission/vision statement of the group is that “wise and sustainable use of water resources is best accomplished by a voluntary association of members of the watershed communities, working together to understand both the watershed and each other. Such an understanding will be the basis for resolving conflicts and promoting the cooperative use of the water resource.” Specific short-term goals include: (1) actively involving citizens, (2) actively involving local government, and (3) obtaining funding for a coordinator. Over the longer term, the goals of the watershed initiative are found in the group's 5 year plan.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Reclamation, Natural Resource Conservation Service, US Geological Survey, the Arizona Department of Environmental Quality, Arizona Department of Water Resources, the Arizona Department of Game and Fish, one or more local governments, one or more water districts/organizations, one or more environmental groups, one or more non-governmental organizations, and one or more academic or citizens groups. Membership is open to all interested parties.

The group is directed by a facilitator and utilizes subcommittees, including Natural Resources, Economic Development, Outreach and Education, Socio-demographic, and Legal subcommittees. Meetings are held monthly. Issues are brought before the group by open discussion and committees. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The group has no budget. Major providers of in-kind services include the federal Bureau of Reclamation used for website support and a newsletter, and other agencies.

Accomplishments and Ongoing Activities

The Verde Watershed Association has completed the following activities: the development of a five year management plan, shared decision-making/negotiated problem-solving, the publication of newsletters and/or brochures, conferences/workshops, and other educational activities. In addition, the group has the following activities planned or in progress: resource monitoring, scientific research, legal or policy research, and on-the-ground remediation or restoration activities. The group is most proud of having a multiple issue program that is watershed-wide.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Areas of strength of this watershed initiative appear to be the adequacy of size,

composition, and structure of the group, but the group feels there is always room to solicit more community involvement; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the helpfulness of federal, state, and local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals. The group's most important short-term goal is to get money for a local coordinator.

The group considers the following actions to be essential to their continued problem-solving efforts: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) focus, (2) determination, and (3) feedback.

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West Maricopa Watershed Project

Focus of the Watershed Initiative

Maricopa County is located in central Arizona. The focus of the group is on the entire basin within the county, an area covering approximately 250,000. The population of the focus area is greater than 1,00,000, with the majority of the population distributed in cities/towns. The largest city in the region is Phoenix, with a population of at least 1,000,000. The local economy is strong and highly diversified. There is a significant percentage of the region's population employed in natural resource jobs in the sectors of agriculture and/or ranching. Over seventy dairy operations are found within the basin.

The West Maricopa Watershed Project was formed in 1997 in response to the regulation of dairy waste by the US Environmental Protection Agency. Establishment of the group was primarily the result of the efforts of the Natural Resources Conservation Service, and followed earlier problem-solving efforts by the Arizona Department of Environmental Quality and a conservation district. Since its formation, the group has been mostly concerned with issues of water quality with a particular focus on pathogens, nutrient loading, and organics. From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate

funding/attention being given to a natural resource problem, and ineffective management programs or laws. Specific short-term goals include: (1) reducing nitrates in the ground water, (2) containing surface water on dairies, and (3) ensuring that Environmental Protection Agency guidelines are addressed. Over the longer term, the goals of the group are to reduce the impact of dairies on the environment.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Natural Resources Conservation Service, the Environmental Protection Agency, two water districts/organizations, one or more non-governmental organizations, and representatives of the dairy industry. Membership is open to all interested parties. The group is directed by a facilitator funded by the Natural Resources Conservation Service. Meetings are held quarterly. Issues are brought before the group through an agenda. The group utilizes a decision-making process selected by the group during its initial formation, reliant upon consensus. The group has no budget. The Natural Resources Conservation Service is a major provider of in-kind services used for cost-sharing.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, shared decision-making/negotiated problem-solving, the publication of newsletters and/or brochures, and legal or policy research. In addition, the group has planned or is in the process of completing the following activities: resource monitoring; scientific research; on-the-ground remediation or restoration activities in ponds, pipes, and solid separations on dairies; conferences/workshops; and other educational activities. The group is most proud of installing systems for animal waste.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvement. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of state and federal agencies. Areas of potential weakness include that the federal agencies have been only slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a modified operation of existing facilities, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) writing a plan, and (2) better working relations among stakeholders.

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Zuni River Watershed Act Group

Focus of the Watershed Initiative

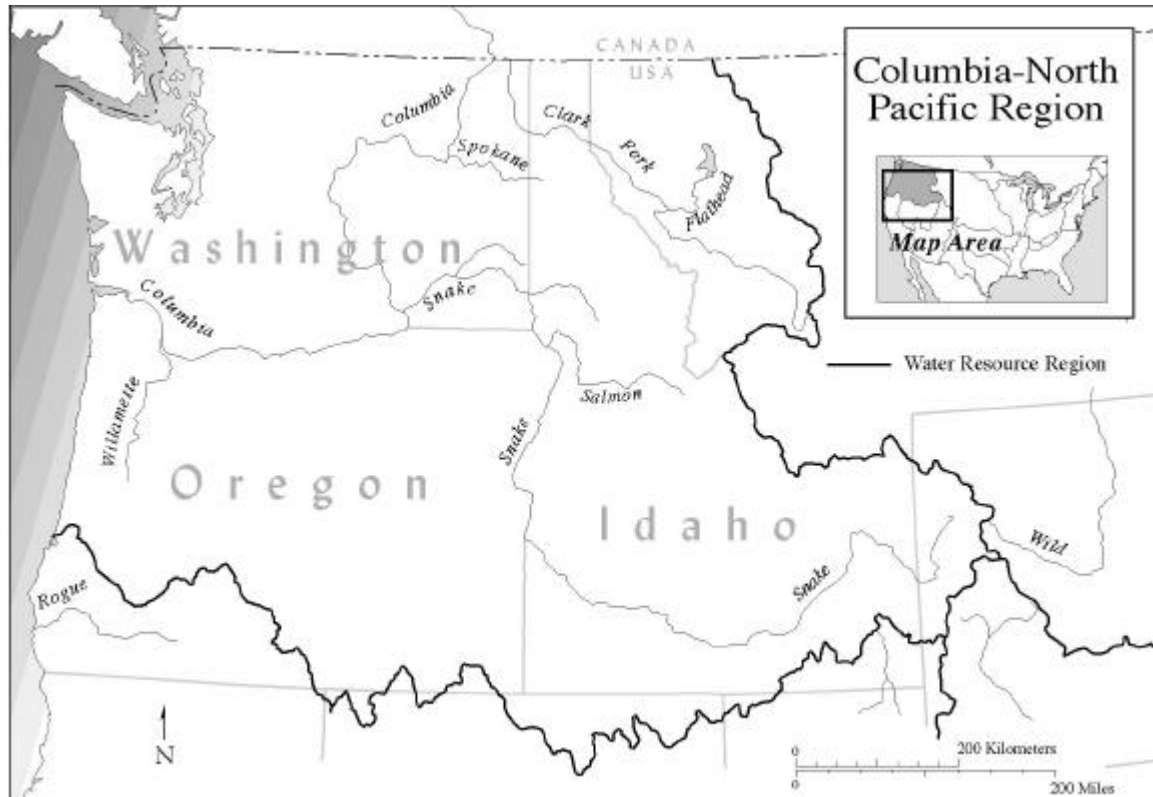
The Zuni River watershed is located in northwestern New Mexico. The watershed extends west from the continental divide to Zuni tribal lands and drains into the Little Colorado River into Arizona. The focus of the Zuni River Watershed Act Group is on the entire basin, an area covering approximately 411,500 spread over 2 counties. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Ramah, with a population of approximately 600. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, and energy and mining. There is diverse land ownership including state and federal lands, Indian lands, and private lands.

The Zuni River Watershed Act Group was formed in 1993, pursuant to the Zuni River Watershed Act of 1992 (P.L. 102-338). Establishment of the group was primarily the result of the work of the Zuni tribe and federal agencies such as the Natural Resources Conservation Service. Creation of the group followed earlier problem-solving attempts involving work by federal agencies with producers on a one-on-one basis. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes, water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation. More specifically, the group is concerned about the loss of water, erosion, reduced productivity, and the depletion of renewable resources.

From an “institutional” (or administrative) standpoint, the group is concerned with problems associated with inadequate funding/attention being given to a natural resource problem, the lack of local involvement in resource management, ineffective management programs or laws, and inadequate interagency or interjurisdictional coordination. The mission/vision statement of the group is “To conserve and rehabilitate natural and cultural resources in Western New Mexico.” Specific short-term goals include: (1) creating consensus on the plan and actions, (2) securing funding for plan implementation, and (3) treating sub-watersheds with higher priority. Over the longer term, the goals of the group include conserving and rehabilitating the natural and cultural resources in western New Mexico.

Chapter 8

Selected Watershed Initiatives in the Columbia-North Pacific Region



Source: Hydrologic Unit Map of the United States (1938, 1960). Orig. Cartography by Jim Friedman, July 1975. Updated by CU Cartography Lab March 2000.

The level of structure and organization of watershed initiatives in the Columbia River Basin and the Pacific Northwest is the most sophisticated in the West (NRLC, 1998; WSWC, 1998). Many factors contribute to foster this advanced level of watershed management. First of all, the region features a wealth of water and watersheds, most with perennial flowing streams. Important natural resource issues—most involving forests and fisheries—make this region a hotbed of environmental and natural resource conflicts. Transboundary effects along the Columbia are also pronounced, with irrigation and hydroelectric dams in Washington and Oregon endangering salmon runs farther up river in Idaho and Montana, and deleterious effects of logging and mining permeating through the system.

Federal influence along the Columbia system is also high. The Clean Water Act, federal regulation of the numerous hydroelectric power facilities and, especially, Endangered Species

Act protections for salmon and other species increasingly force serious changes in management of the waters. Tribal issues are also important in the Northwest.

Watershed programs in Idaho, Washington, and especially Oregon exhibit a level of coordination, administration and state involvement that is unmatched in any of the other regions in the West. In Oregon, the former Governor's Watershed Enhancement Board is now the Oregon Watershed Enhancement Board (OWEB), having attained the status of a full-fledged state agency. OWEB is now receiving state lottery funds, contributing further to what was already one of the best-funded watershed programs in the country (approximately \$8.1 million/year). OWEB awards funding to an extensive and well-organized network of approximately 150 state-recognized watershed councils. Most of these councils have paid coordinators and support staff, and conform to a recognizable pattern of regular monthly meetings, diverse stakeholder involvement, networking and staff sharing between groups, and participation in umbrella groups.

The Washington State government is also playing an increasingly significant role in watershed management. Following the passage of HB 2514, the Washington Department of Ecology is now mandated by statute, and funded, to establish Water Resources Inventory Areas (WRIAs). In each area, WRIA planning groups establish watershed plans. The primary focus of the WRIA plans is water quantity—Washington waters, while plentiful, are quickly becoming over-appropriated. Most watershed initiatives, however, deal with issues of water quality and species habitat. Thus in Washington, there appears to be a strong need to better coordinate water quantity activities with water quality and species protection efforts. This problem is symptomatic of the larger challenge in the West of integrating water quality and species concerns into the allocation framework provided by prior appropriation doctrine (see Chapter 3).

To the east, the Idaho Department of Environmental Quality (DEQ) has addressed the state's watershed planning through a highly structured system of local Watershed Advisory Groups (WAGs). WAGs are supervised by larger-focus Basin Advisory Groups (BAGs), and assisted on specific projects by Technical Advisory Groups (TAGs). The WAGs, BAGs and TAGs are taking on a variety of difficult water management issues including TMDLs, endangered species and scarce water supplies for irrigators. Similar issues exist in western Montana—the easternmost edge of the Columbia basin—where state support for watershed initiatives is also growing. In Montana, almost two dozen state and federal agencies have signed a memorandum of understanding encouraging joint watershed management efforts, while the state has taken initial steps to coordinate TMDL efforts.

Asotin Creek Model Watershed Project

Focus of the Watershed Initiative

The Asotin Creek watershed is located in southeastern Washington. The focus of the group is on the entire basin, an area covering approximately 325 square miles spread over one county.

Asotin Creek drains portions of the north slope of the Blue Mountains of southeastern Washington and then runs into the Snake River. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in rural areas. The largest city in the region is Clarkston, with a population of approximately 18,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in agriculture.

The Asotin Creek Model Watershed Project was formed in 1993 in response to the Northwest Power Planning Council's "Strategy for Salmon," completed in 1992. Establishment of the group was primarily the result of the efforts of the following groups: the Bonneville Power Administration; the Washington Departments of Fish and Wildlife, Environment, and Natural Resources; the Washington State Legislature; the Natural Resources Conservation Service; the Asotin County Conservation District; the Nez Perce Tribe; the Salmon Corps; and the local Citizen Steering Committee. Since its formation, the group has been mostly concerned with issues of water quality related to sediment and temperature; the maintenance of fish and wildlife and/or endangered species such as the summer steelhead, spring chinook, and bull trout; and land-use management related to soil erosion and riparian management.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem. The group believes there are too many groups with very little funding interested in addressing the problem at this time. The mission/vision statement of the group is: "To complete and implement a holistic plan for the Asotin Creek watershed, meeting landowner objectives, and agency acceptance to protect and restore all resource bases with concern for long-term sustainability." Specific short-term goals include: (1) improving instream temperature, (2) improving resting and rearing pools containing large woody debris, and (3) reducing sediment deposition in spawning areas.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Natural Resources Conservation Service, the Nez Perce Tribe, the Washington State Conservation Commission, the local conservation district, local landowners and business interests, and one or more academics or citizens including representatives from four schools and Washington State University. Membership is open to all interested parties. The group is directed by a coordinator, paid by the Bonneville Power Administration and the Washington State Conservation Commission. The group utilizes subcommittees, including Landowner Steering Committees and Technical Advisory Committees. The group has an office, located in Clarkston, WA. Meetings are held bi-annually. Issues are brought before the group by the Asotin County Conservatin District or agency representatives. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$400,000. Major providers of funding and in-kind services include the federal Bonneville Power Administration in the amount of \$200,000 used for salmonid restoration, the

Washington State Legislature in the amount of \$150,000 used for salmonid restoration, and the Natural Resources Conservation Service in the amount of \$100,000 used for technical assistance.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of the Asotin Creek Model Watershed Plan in 1995, publication of the Asotin Creek Model Watershed Newsletter, and workshops and project tours. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving between landowners, tribes, and government agencies; resource monitoring; scientific research; on-the-ground remediation or restoration activities related to upland practices; instream restoration; riparian fencing and alternative water development; and other educational activities in local schools. The group is most proud of its work with local schools, which includes Salmon in the Classroom aquariums, tree plantings, habitat assessments, and enviro-thon competitions. In addition, the group is proud of numerous restoration projects installed on private property for salmonid habitat improvements.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, modified operation of existing facilities, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) long-term cost-share funding, (2) continued information and education, and (3) realistic goals.

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Big Payette Lake Water Quality Council

Focus of the Watershed Initiative

The Big Payette Lake watershed is located in western Idaho. The focus of the group is on the entire basin, an area covering approximately 92,000 acres spread over one county. The watershed consists of mountainous and heavily forested lands including numerous small streams, one river, and steep slopes. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is McCall, with a population of approximately 2,600. The local economy is weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry and tourism and/or recreation. Land-use is predominantly focused on timber harvesting.

The Big Payette Lake Water Quality Council was formed in 1992 in response to a perceived decline in water quality in the Payette Lake. Establishment of the group was primarily the result of the efforts of concerned citizens, with additional assistance from state agencies. Since its formation, the group has been mostly concerned with issues of water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management, and ineffective management programs or laws. The group is concerned that gradual resource degradation, and the public's lack of awareness of this degradation, will lead to serious water quality problems if these issues are not addressed now. The mission/vision statement of the group is as follows: "The Big Payette Lake Water Quality Council, and the community of McCall, Idaho believe that a high level of water quality in the Big Payette Lake and its watershed must be preserved for drinking, swimming, fishing, wildlife and other aesthetic purposes while accomodating private, public and commercial activities to the extent prudent and practical and sustaining the economic viability of the area." Specific short-term goals include: (1) improving water quality, and (2) raising local awareness of the problems and solutions.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Natural Resources Conservation Service, Environmental Protection Agency, and the US Geological Survey; one or more state agencies; one or more local agencies; one or more water districts/organizations; one or more environmental groups; one or more non-governmental organization; and one or more academics or citizens. Membership is open to all interested parties. However, voting is limited to assigned groups approved by the full voting body. The group is directed by a coordinator. The group does not utilize subcommittees. The group has an office, located in the Boise Regional offices of the Idaho Department of Environmental Quality.

Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. Major providers of funding and in-kind services include the US Geological Survey used for monitoring and technical support; the Idaho Department of Environmental Quality used for mailings, publications, technical support and monitoring; the Idaho Association of Soil and Conservation Districts used for outreach and public education; and various other parties/sources for pollution reduction projects.

Accomplishments and Ongoing Activities

The group completed the development of the Big Payette Lake Management and Implementation Plan in 1998, which set out approved land-use practice for landowners in laymens terms. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving regarding local ordinances and related matters, water quality monitoring, scientific research, on-the-ground remediation or restoration activities related to bank restoration, erosion control measures and facility upgrades, the publication of a semi-annual newsletter sent to 600 local landowners and interested parties, workshops for landowners, and other educational activities including outreach to schools. The group is most proud of completing the Big Payette Lake Technical Report and the Big Payette Lake Management and Implementation Plan, which was approved by the Idaho legislature in 1998.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) increasing public awareness, (2) increasing participation in the best management practices, and (3) changing local practices to reduce nutrient loading in the watershed.

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Bridge Creek Watershed Council

Focus of the Watershed Initiative

The Bridge Creek watershed is located in north-central Oregon. The focus of the group is on the entire watershed, an area covering approximately 204,000 acres. Of those 204,000 acres, 32,000 are US Forest Service grazing and timber production lands, 2,500 are owned by the National Park Service, 61,000 are used for pasture and Bureau of Land Management rangelands, and 109,000 are private range and timber land. The population of the focus area is less than 300, with all of the population distributed in rural areas. The largest city in the region is Mitchell, with a population of approximately 200. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching, and tourism and/or recreation.

The Bridge Creek Watershed Council was formed in 1996 in response to the invasion of noxious weeds. Establishment of the group was primarily the result of the efforts of the Oregon Watershed Improvement Coalition, local ranchers, the Bureau of Land Management, the US Forest Service, the Natural Resources Conservation Service, the Oregon Department of Fish and Wildlife, and the Governor's Watershed Enhancement Board. Since its formation, the group has been mostly concerned with issues of water quality related to temperature and sedimentation, water supply/flow regimes related to seasonal flows, the maintenance of fish and wildlife and/or endangered species related to an overpopulation of Elk and an improving native steelhead population, land-use management, and general environmental degradation related to the invasion of noxious weeds.

The mission/vision statement of the group is to implement and demonstrate the utility of cooperative management of natural resources. Specific short-term goals include: (1) stopping the spread of noxious weeds, (2) managing juniper in the area, and (3) establishing and maintaining native vegetation. Over the longer term, the goals of the group are to maintain a productive working system for agricultural land, forestry, wildlife and fish populations.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, Natural Resources Conservation Service, Farm Service Agency, and the state Forestry Department, one or more non-governmental organizations, local landowners, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a volunteer coordinator. The group does not utilize subcommittees. Meetings are held twice yearly or as needed. Issues are brought before the group by local landowners and agency personnel. The group utilizes a decision-making process that is at the discretion of the coordinator, generally reliant upon an 80 percent supermajority rule.

The group itself has no budget. However, a variety of entities provide in-kind services and funding for projects of the group, including the Natural Resources Conservation Service in the amount of \$400,000 used for on-the-ground projects, Oregon's Watershed Enhancement Board in the amount of \$50,000 used for on-the-ground projects, and other sources in the amount of \$10,000 used for education projects.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of a Coordinated Resource Management Plan, shared decision-making/negotiated problem-solving, on-the-ground remediation or restoration activities, and various workshops and tours of the watershed. In addition, the group is in the process of completing highway road signs to identify the project areas to motorists. The group is most proud of completing the Coordinated Resource Management Plan and obtaining landowner participation, with 93 percent of landowners in the watershed participating in restoration projects.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, most participants in the group believe the problem is being solved and that the level/rate of success is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. Areas of potential weakness include the inadequacy of funding to meet the administrative needs of the group.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) landowner participation, (2) cooperation of all agencies, and (3) watershed problems are the same for all involved parties.

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Cedar River Council

Focus of the Watershed Initiative

The Cedar River watershed is located in northwestern Washington. The focus of the group is on the lower basin, an area covering approximately 66 square miles spread over one county. The lower third of Cedar River drains into Lake Washington, with the city of Renton at its mouth. The watershed supports significant salmon runs. In addition, the watershed supplies 50 percent of the freshwater to Lake Washington and is prone to serious flooding. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Renton, with a population of approximately 46,000. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs, although there are some jobs in the forestry and sand and gravel mining sectors.

The Cedar River Council was formed in 1994 in response to the Cedar River Basin Plan created by King County. Establishment of the group was primarily the result of the efforts of local government. Since its formation, the group has been mostly concerned with maintenance of fish and wildlife and/or endangered species related to runs of the Puget Sound Chinook, sockeye, steelhead, and coho; water quality; water supply/flow regimes related to nearby Seattle's withdrawal of nearly 20 percent of the annual average flow of the river for domestic drinking supplies; land-use management related to urban/suburban sprawl; and flooding.

From an "institutional" (or administrative) standpoint, the group is also concerned with improving interjurisdictional coordination, transboundary impacts, increasing local involvement in resource management, and improving management programs or laws. The mission/vision statement of the group is as follows: "The Cedar River Council promotes the health of the Cedar River Basin focusing on lower basin issues. The Council is comprised of basin residents, and representatives of community groups, businesses, and local, state, federal and tribal governments." Specific short-term goals include: (1) monitoring the progress and participating in the implementation of the Cedar River Basin Plan and recommending changes as appropriate, (2) supporting actions, programs, and projects that will reduce flood hazards, protecting and enhancing fish and wildlife habitat, providing recreational activities, and maintaining high water quality and sufficient flows, and (3) advocating Cedar River issues to the Lake Washington Forum and other appropriate forums.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Corps of Engineers, the Muckleshoot Tribe, the Washington Department of Fish and Wildlife, Renton and King Counties, the King Conservation District, the city of Seattle, Trout Unlimited, and several watershed residents. Membership is open to specified membership categories. The group is directed by a coordinator, funded by King County. The group utilizes subcommittees, including: Land Use, Membership, and Habitat Acquisition. The group has an office, located in Seattle. Meetings are held monthly. Issues are brought before the group by the coordinator, chair, members, or the public. The group utilizes a decision-making process that is at the discretion of the co-chairs, informally reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the Washington Department of Ecology in the amount of \$150,000 used for staff support, and King County in the amount of \$100,000 used for coordinator's salary, room rental, and other administrative expenses.

Accomplishments and Ongoing Activities

The group has completed the following activities: the adoption of the Cedar River Basin management plan in 1997, on-the-ground remediation or restoration activities, and other educational activities including an annual watershed seminar. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring, scientific research, and additional on-the-ground remediation or restoration activities. The group is most proud of the adoption of the Cedar River Basin Plan, commenting on Seattle's habitat conservation plan, and the acquisition of habitat.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, most participants believe the problem is being solved and that the level/rate of success is greater than that possible with other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local and state agencies. The US Army Corp of Engineers has also helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased

public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) trust building with residents through dialogue and education, (2) funding, and (3) building on previous successes.

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Chums of Barker Creek

Focus of the Watershed Initiative

The Barker Creek watershed is located in western Washington. The focus of the group is on the entire basin, an area covering approximately 250 acres spread over one county. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Bremerton, with a population of approximately 40,000. The local economy is moderate in strength and not diversified; the economy is highly dependent on a military installation. There is not a significant percentage of the region's population employed in natural resource jobs. There are growing population centers to the northwest and southeast of the watershed, making it vulnerable to future development.

The Chums of Barker Creek was formed in 1993 in response to concerns about development activities encroaching on sensitive areas in the watershed. Establishment of the group was primarily the result of the efforts of citizens/activists. Since its formation, the group has been mostly concerned with issues of general environmental degradation, water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, and land-use management.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, and inadequate funding/attention being given to a natural resource problem. The mission/vision statement of the group is "to conserve and steward a greenbelt along the Barker Creek corridor which will preserve the ecological, recreational and educational potentials of the area for the present and future generations in a way which is compatible with the ecological, use and ownership of the surrounding lands." Specific short-term goals include: (1) retaining the watershed in its current

state, (2) enhancing fish populations, and (3) reverse degradation associated with stormwater flows.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Environmental Protection Agency, the Suquamish Indian Tribe, one or more local agencies, and one or more environmental groups. Membership is open to all interested parties. The group is directed by a coordinator. The group utilizes subcommittees, including Governmental Relations, Water Quality Testing, and Fish Enhancement. Meetings are held approximately quarterly. Issues are brought before the group by officers, members, and various governmental representatives. The group utilizes a formal consensus-oriented decision-making process, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include the local county and conservation district in the amount of \$15,000 used for restoration activities, and foundation grants in the amount of \$5,000 used for legal costs.

Accomplishments and Ongoing Activities

The group has completed the publication of newsletters and/or brochures. In addition, the group has planned or is in the process of completing the development of management plans, on-the-ground remediation or restoration activities, and other educational activities.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local agencies. Areas of potential weakness include that state agencies have only been slightly helpful, federal agencies have not been helpful, and funding is inadequate to meet short-term goals. The group currently does not have the money to purchase development rights in order to preserve stream buffers and obtain significant/critical parcels of land.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) cooperation of all players, (2) consistency, and (3) focusing on what is best for the fish first.

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Columbia Slough Watershed Council

Focus of the Watershed Initiative

The Columbia Slough watershed is located in northwestern Oregon. It is an urban watershed, located largely within Portland, OR. The focus of the group is on the entire basin, an area covering approximately 40,000 acres spread over one county. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed in cities/towns. The largest city in the region is Portland, with a population of approximately 500,000. The local economy is strong and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Columbia Slough Watershed Council was formed in 1993 in response to informal discussions by concerned citizens and the formation of the Oregon Governor's Watershed Enhancement Board. Establishment of the group was primarily the result of the efforts of local citizens and government. Since its formation, the group has been mostly concerned with issues of water quality related to TMDLs and sedimentation, water supply/flow regimes, fish and wildlife maintenance, and Corp of Engineers' initiatives.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, ineffective management programs or laws, and recreational access (since most of the riparian areas are privately owned). The mission/vision statement of the group is "to foster action to enhance, restore and protect the watershed." Specific short-term goals include: (1) developing collaborative goals and methods which result in better water quality projects, (2) enhancing water quality and habitat, recreational access, and educational awareness, and (3) keeping mitigation within the watershed and developing a program to evaluate and improve the riverbank. Over the longer term, the goals of the group are to create a watershed assessment, monitor multiple jurisdictions' plans and projects, monitor and support revegetation and water quality improvement projects, create public awareness, sponsor educational outings and events, foster public awareness and appreciation of the natural resources in the area, develop public trails and public access, create a corporate awareness of natural resources, and comment on government permits to improve the products of governments and private developers.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Corps of Engineers, Natural Resources Conservation Service, the American Indian Association of Portland, one or more local agencies, one or more water districts/organizations, multiple environmental groups, multiple non-governmental organizations, and multiple academics or citizens. Membership is open to all interested parties, although voting is limited to a specified group of members. The group is directed by a coordinator, funded by a grant from the Oregon Watershed Enhancement Board and from local funds. The group utilizes subcommittees, including Administrative, Finance, Awards, Port Monitoring, Landuse, Hot Topics, and Regatta/Outings. The group has an office, located in Portland. General meetings are held monthly. Issues are brought before the group by the Administrative committee, based on input from subcommittees and members. The group utilizes a formal decision-making process that was pre-determined by the group during its initial formation, reliant upon 100 percent consensus (i.e., unanimity).

The estimated annual budget of the group (including the value of in-kind services) is \$100,000. The budget has increased \$15,000 per year since 1997. Major providers of funding and in-kind services include state agencies in the amount of \$54,000, and other funding sources in the amount of \$30,000 for fiscal year 2000.

Accomplishments and Ongoing Activities

Among the group's accomplishments are the publication of newsletters and/or brochures, conferences/workshops, and other educational activities. In addition, the group is in the progress of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, legal or policy research, and on-the-ground remediation or restoration activities. The group is most proud of surviving and facilitating the creation of a more civil dialogue on the issues.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local and state agencies. Areas of potential weakness include that the federal agencies have only been slightly helpful, and funding is inadequate to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) longevity, (2) funding, and (3) getting all of the stakeholders to the table.

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Cottonwood Advisory Watershed Group

Focus of the Watershed Initiative

The Cottonwood watershed is located in northwestern Idaho. The focus of the group is on the entire basin, an area contained within one county. The upper watershed is timberland, with the remainder of the land in the watershed used for farming and grazing. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Grangeville, with a population of approximately 3,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching.

The Cottonwood Advisory Watershed Group was formed in 1998 in response to water classifications in the watershed under the Clean Water Act. Establishment of the group was primarily the result of the efforts of state government. Since its formation, the group has been mostly concerned with issues of water quality related to temperature, dissolved oxygen, pollutants, and sediment; the maintenance of salmon and cold water trout populations; and land-use management related to erosion.

From an "institutional" (or administrative) standpoint, the group is also concerned with the lack of local involvement in resource management, which is important because nearly 97 percent of the watershed is privately owned. Specific short-term goals include: (1) setting water quality goals, (2) identifying key pollution and erosion factors, and (3) identifying primary sources of pollution. Over the longer term, the goals of the group are to determine water quality parameters, to identify problem areas, and to take collective actions.

Structure and Functioning of the Watershed Initiative

The group includes members from: the farming and ranching communities, the Nez Perce Tribe, the local county, the Idaho County Conservation District, and two cities. Membership is limited to avoid the group from becoming too large. The group is directed by a coordinator.

The group utilizes subcommittees. Meetings are held approximately monthly. Issues are brought before the group by the coordinator. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. The group has no budget. Major providers of in-kind services include the Idaho Division of Environmental Quality.

Accomplishments and Ongoing Activities

The group has completed legal and/or policy research. In addition, the group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, and on-the-ground remediation or restoration activities. The group is most proud of setting water quality parameters.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and federal agencies. Areas of potential weakness include that the local agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) continued group participation, (2) private landowners willing to take corrective actions, and (3) monetary support to private landowners to make corrective actions.

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Crooked River Watershed Council

Focus of the Watershed Initiative

The Crooked River Basin is in central Oregon. The focus of the Crooked River Watershed Council is on the entire basin, an area covering approximately 2 million acres, spread over 4 or more counties. The Crooked River Basin includes the Maury and Ochoco mountain ranges.

The southeast section of watershed is high desert. Fifty percent of the watershed is located in public lands, with private lands concentrated along valley floors. The population of the focus area is approximately 30,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Prineville, with a population of approximately 9,000. The local economy is weak and not diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation, tourism, and agriculture.

The Crooked River Watershed Council was formed in 1997 to help private landowners and residents address resource concerns related to water quality and quantity regulations. Since its formation, the group is highly concerned with water supply/flow regimes; water quality; fish and wildlife maintenance; and land-use management, including upland vegetation health because juniper has taken over large areas of highlands. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with the lack of a coordinated regional effort and ineffective management or laws as demonstrated by the statewide standards imposed in a state with very different western and eastern conditions.

The mission statement of the group is “To promote stewardship of the Crooked River watershed and its resources and to ensure sustainable watershed health, functions and uses for optimal conservation and economic benefits.” Specific short-term goals include: (1) completing a basin-wide characterization and assessment, (2) drafting a council action plan with technical team and public input, and (3) conducting demonstration restoration and education projects. Over the longer term, the goals of the group include: the development of an integrated, comprehensive watershed management program; improving communication among affected stakeholders; establishing a process of coordination, cooperation, education, and involvement of citizens in the watershed; promoting and supporting ongoing monitoring of the health of the Crooked River watershed; providing a forum for resolving problems and conflicts related to the council’s mission; conserving and improving fish and wildlife habitat; and supporting the socioeconomic needs of the watershed residents.

Structure and Functioning of the Watershed Initiative

The Board of the Crooked River Watershed Council includes members from the following 13 sectors: ranching/agricultural, irrigated agriculture, federal land management, state agency, fish and wildlife, private timber, education, environmental, Confederated Tribes of Warm Springs, Soil and Water Conservation District, County Government, City of Prineville, and land-use planning. There is no formal membership structure, but public participation is encouraged. The group is directed by a coordinator supported by Oregon Watershed Enhancement Board funding and the in-kind and financial assistance of other partners and agencies. The group utilizes subcommittees, including an Executive Committee for decision-making between monthly meetings. The group has an office, located in the Oregon State University Cooperative Extension office in Crook County. Meetings are held monthly. The Executive Committee and the Coordinator discuss agenda items and other issues which are then discussed at meetings. Decisions are made utilizing a process that was pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) falls within the range of \$35,000 to \$150,000. Budgets have increased in recent years due to the fundraising efforts of the coordinator hired in 1998. Major providers of funding and in-kind services include the Bureau of Land Management and the US Forest Service, in the amount of \$10,000 used for the technical team and vehicle support; the Oregon Department of Fish and Wildlife, Oregon Department of Forestry, and the Oregon State University Extension in the amount of \$5,500 used for technical advisory team and maps; the Soil and Water Conservation District in the amount of \$500 used for fiscal administration; and other agencies such as the County Court and the Crooked River Education Council in the amount of \$4,750 used for office, printing, and postage costs.

Accomplishments and Ongoing Activities

The Crooked River Watershed Council is in the process of completing the following activities: the development of management plans, such as the basin assessment and council action plan; shared decision-making/negotiated problem-solving; scientific research, including a baseline assessment primarily from existing data and aerial photos of vegetation distribution; conferences/workshops dealing with flood response, farming, and noxious weed workshops; other educational activities including watershed tours; and involvement in a new library and outdoor learning center. In addition, the group is planning the following: baseline monitoring of target restoration project areas, project monitoring, on-the-ground remediation or restoration activities requiring the fencing of privately owned riparian areas, bank stabilization projects, and the publication of newsletters.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern as illustrated by their current planning activities. Areas of strength of this watershed initiative appear to be the perceived adequacy of decision-making arrangements, well-attended and efficiently run meetings, the adequacy of funding to meet short-term goals, and the helpfulness of local, state and federal agencies. Areas of potential weakness include the size of the basin, and the wide range of potential projects. The group considers its size and composition a strength, but with only one staff person, the group feels that additional involvement by Board members will be needed for the group to be more successful.

Planned activities include on-the-ground modification of the land management activities, and the generation of increased public awareness of the resource or resource problem(s). The group feels that it is doing a good job with education, outreach, and awareness. As a result, the group's impact on the community is measurable, while the impact on the resource is minimal at this early stage. The group considers the following as keys to success: (1) collaboration, (2) trust, and (3) perseverance.

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Dungeness River Management Team

Focus of the Watershed Initiative

The North Olympic Peninsula watershed is located in western Washington. The focus of the group is on the entire basin, an area covering approximately 30,000 acres spread over two counties. The watershed is in a rainshadow, resulting in low precipitation. Land-use in the area is changing from agriculture to suburbia. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Sequim. The local economy is moderate in strength and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and commercial shellfish farming. The irrigation districts have water rights with priority dates back to 1895, although ownership of the watershed is primarily in the hands of the Jamestown S'Klallam Indian Tribe.

The Dungeness River Management Team was formed in 1994 in response to the Dungeness-Quilcene Water Resources Management Plan of 1994. Establishment of the group was primarily the result of the efforts of local government and the Jamestown S'Klallam Tribe. Since its formation, the group has been mostly concerned with issues of water quality related to shellfish beds at the river's mouth, water supply/flow regimes related to seasonal variations in flow levels and channel instability, fish and wildlife maintenance related to several threatened or endangered species in the basin, land-use management related to the conversion of the watershed from agricultural to suburban uses, and general environmental degradation related to flood hazards.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention for implementation being given to a natural resource problem, the lack of enforcement of existing programs or laws, and dealing with property rights concerns of new participants. Specific short-term goals include: (1) implementing restoration projects on the river based on watershed strategies, (2) acquiring financial support, (3) developing a land acquisition plan, (4) integrating salmon recovery with watershed planning, and (5) putting water back in the river for fish. Over the longer term, the goals of the group are to reestablish

salmon runs, restore habitat and instream flows, restore natural channel functions, maintain agricultural viability, and maintaining community involvement.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Corps of Engineers, Natural Resources Conservation Service, the US Geological Survey, the Jamestown S'Klallam Tribe, the Washington Departments of Fish and Wildlife and Ecology, local conservation districts and county commissioners, Sequim City Council, local irrigation districts, one or more environmental organizations, the North Olympic Land Trust, two property owner organizations, and one or more academics or citizens. Membership is limited to 12 to 18 participants, although there is a process for admitting additional members. The group is directed by an executive subcommittee and a chairman. The group utilizes subcommittees. Issues are brought before the group by members. The group utilizes a formal decision-making process pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. The group recently lost funding for its coordinator position. Major providers of funding and in-kind services include the US Geological Survey in the amount of \$100,000 used for technical studies, the state Department of Ecology in the amount of \$250,000 over four years used for technical support and plan development, local Clallam County support used for staffing, and the Jamestown S'Klallam Tribe in the amount of \$20,000 used for administrative support.

Accomplishments and Ongoing Activities

The group has completed or is in the process of completing the following activities: the development of habitat conservation plans; shared decision-making/negotiated problem-solving; monitoring of fish stocks, channel function, and water diversions; scientific research; legal or policy research on interjurisdictional issues; on-the-ground remediation or restoration activities; publication of newsletters and/or brochures; and conferences/workshops. The group appears most proud of supporting the ongoing efforts to implement water conservation measures, although different group members are proud of different things.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements, and by the fact that most participants believe the problem is being addressed. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term staffing and restoration needs.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) a good process and a sophisticated group, (2) public support or neutrality, and (3) money for implementation and planning.

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Friends of Arnold Creek

Focus of the Watershed Initiative

The Arnold Creek watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 772 acres spread over one county. Arnold Creek is a tributary of Tryon Creek, which is a fish-bearing stream in the Willamette watershed. The population of the focus area is less than 100,000. The largest city in the broader region is Portland, with a population of approximately 500,000. The local economy is strong and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

Friends of Arnold Creek was formed in 1994 in response to a subdivision application that would have negatively impacted the headwaters of Arnold Creek and a concurrent bond measure that allowed purchase of the site. Establishment of the group was primarily the result of the efforts of local citizens and activists. Since its formation, the group has been mostly concerned with issues of water quality related to turbidity, temperature, and dissolved oxygen; water supply/flow regimes related to seasonal variations in flows; fish and wildlife maintenance related to threatened populations of steelhead in the lower watershed; land-use management; educating citizens on watershed health; and general environmental degradation related to transportation impacts.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, transboundary impacts, inadequate

funding/attention being given to a natural resource problem, lack of local involvement in resource management, ineffective management programs or laws, and citizen stewardship of natural resources. The mission/vision statement of the group is “To preserve and enhance the health of the Arnold Creek watershed.” Specific short-term goals include: (1) monitoring water quality, (2) implementing resource restoration projects, and (3) improving citizen knowledge of watershed issues. Over the longer term, the goals of the group are to participate in watershed protection and enhancement work in the greater Tryon, Willamette, and Columbia watersheds.

Structure and Functioning of the Watershed Initiative

The group’s membership primarily features local citizens. Membership is open to all interested parties, although only collaborative, solution-oriented participants are encouraged to participate. The group is directed by a coordinator. The group does not utilize subcommittees. Meetings are held annually or as needed. Issues are brought before the group by concerned parties and then the Board decides whether or not to take action. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The group has no budget. Major providers of in-kind services include the city of Portland and Metro, used for restoration and education projects.

Accomplishments and Ongoing Activities

The group has completed on-the-ground remediation or restoration activities (including plant salvage and planting projects), and other educational activities (such as stormdrain stenciling and school education projects). In addition, the group has planned or is in the process of completing monthly water quality monitoring, and creating native plant gardens at local schools. The group is most proud of saving over 20 acres of forest as permanent green space at the headwaters of Arnold Creek at a cost of over \$750,000.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; hands-on meetings and activities; and the helpfulness of local agencies. Areas of potential weakness include that federal and state agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, the generation of increased public awareness of the resource or

resource problem(s), and better local ordinances and enforcements. The group listed the following keys to success: (1) enthusiastic citizens, (2) environmentally aware and brave bureaucrats, and (3) a beautiful and inspirational natural resource.

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Friends of Beaver Creek

Focus of the Watershed Initiative

The Beaver Creek watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 25 square miles spread over two counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Troutdale, with a population of approximately 15,000. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Friends of Beaver Creek was formed in 1988 in response to the degradation of the watershed and urbanization of the area. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality related to stormwater management and riparian degradation, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species related to salmonid habitat, land-use management related to soil erosion practices, and general environmental degradation related to riparian and siltation problems and intrusive exotic plant species.

From an "institutional" (or administrative) standpoint, the group is also concerned with transboundary impacts, lack of local involvement in resource management, and ineffective management programs or laws addressing soil erosion by the city. Specific short-term goals include: (1) improving salmon habitat, (2) removing invasive plant species, and (3) encouraging a public sense of stream ownership. Over the longer term, the goals of the group are to conduct constant monitoring and facilitate more civic involvement in the process.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Fish and Wildlife Service, Natural Resources Conservation Service, one or more state agencies, the Troutdale Parks Department and City Council members, and local citizens. Membership is open to all interested parties. The group is directed by a facilitator, funded by a state grant. The group utilizes subcommittees, including a Board of Directors. Meetings are held monthly. Issues are brought before the group by the city and by concerned parties. The group utilizes a decision-making process that is at the discretion of the facilitator, reliant upon consensus.

The group has no budget, but does receive some support for watershed enhancement projects from the Oregon Watershed Enhancement Board and other sources.

Accomplishments and Ongoing Activities

The group has planned or is in the progress of completing the following activities: the development of management plans, water quality monitoring, scientific research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, and other educational activities. The group is most proud of native plantings and changes in building codes to protect the watershed from storm water degradation.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local and federal agencies. Areas of potential weakness include that the state agencies have only been slightly helpful, and funding is inadequate to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of increased public awareness of the resource or resource problem(s), and modifying building codes and soil erosion codes. The group listed the following keys to success: (1) communication, (2) visibility, and (3) accountability.

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Friends of Lime Creek

Focus of the Watershed Initiative

The Lime Creek watershed is located in south-central Idaho. The focus of the group is on the entire basin, an area covering approximately 200,000 acres spread over one county. Lime Creek drains the southwest face of the Soldier Mountains and feeds the Anderson Ranch reservoir. The watershed is rich in wildlife. The population of the focus area is less than 1,000, with the majority of the population distributed in mostly rural areas. The local economy is moderate in strength and highly diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of tourism and/or recreation, and agriculture and/or ranching.

The Friends of Lime Creek was formed in 1986 in response to a proposal by the US Forest Service to build roads in the Soldier Mountain roadless area. Establishment of the group was primarily the result of the efforts of local citizens and activists. Since its formation, the group has been mostly concerned with issues of the maintenance of fish and wildlife and/or endangered species given the threats of roadbuilding, logging and grazing practices; and land-use management related to grazing practices.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination related to the split management of the area between the Sawtooth and Boise National Forests, and ineffective management programs or laws. The mission/vision statement of the group is "To protect the headwaters of Lime Creek and other Boise River tributaries in the Soldier Mountains from activities that would jeopardize the area's superb fish, wildlife and primitive recreational values." Specific short-term goals include: (1) overseeing revisions of the National Forest Plans for the area, and (2) improving riparian area grazing practices. Over the longer term, the goals of the group are to ensure that no additional roads are constructed in the Lime Creek watershed.

Structure and Functioning of the Watershed Initiative

The group includes members from the Idaho Conservation League, Idaho Watershed Project, Idaho Rivers United, and various organized motorized recreationists who use the area. Membership is open to all interested parties. The group is directed by a coordinator. Meetings are held as needed. The group utilizes a decision-making process that is largely ad hoc and unspecified. The group has no budget.

Accomplishments and Ongoing Activities

The group has completed or is in the process of completing the following activities: reviewing the development of management plans, shared decision-making/negotiated problem-solving, and publication of newsletters and/or brochures. The group is most proud of appealing the 1987 Sawtooth National Forest Management Plan, which resulted in a settlement agreement that avoided the construction of 15 miles of new roads for the removal of 15 million board-feet of timber from the watershed.

Overall, the group considers itself to be relatively successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the perceived adequacy of the decision-making process, and the adequacy of funding to meet short-term goals. Areas of potential weakness include that the infrequency of meetings, and the relative unhelpfulness of state and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s).

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Glen and Gibson Creeks Watershed Council

Focus of the Watershed Initiative

The Glen and Gibson Creeks watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 8,000 acres spread over one county. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is West Salem. The local economy is moderate in strength and moderately diversified. Most of the watershed is agricultural lands and forest.

The Glen and Gibson Creeks Watershed Council was formed in 1997 in response to water quality concerns. Establishment of the group was primarily the result of the efforts of the city of Salem. Since its formation, the group has primarily been concerned with issues of water quality related to increasing urban development.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to water quality problems, and the lack of local involvement in resource management. The mission/vision statement of the group is “To foster better stewardship and understanding of the resources of the Glen & Gibson Creeks watershed.” Specific short-term goals include developing assessments and projects.

Structure and Functioning of the Watershed Initiative

The group includes members from: one or more federal agency, one or more local agency, one or more non-governmental organization, and local citizens, developers, and a local dairy. Membership is limited to one member per stakeholder group. The group is directed by a coordinator, funded by Oregon lottery funds. The group utilizes subcommittees, including Water Quality Monitoring, Agriculture, Fish and Wildlife, Stream Restoration, Stormwater Management, and Flood Control. The group has an office. Meetings are held monthly. Issues are brought before the group by members. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include federal and local agencies, including Polk County, used for administrative costs.

Accomplishments and Ongoing Activities

The group has planned or is in the progress of completing the following activities: shared decision-making/negotiated problem-solving, water quality monitoring, scientific research, on-the-ground remediation or restoration activities such as planting trees and eradicating non-native weeds, and other educational activities. The group is most proud of its volunteer water quality monitoring program.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of state and local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term water quality monitoring goals.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices; voluntary behavioral and/or ideological changes by local resource users and groups; on-the-ground modification of the physical

landscape; the generation of increased public awareness of the resource or resource problem(s); and long-range planning, rezoning, and buffers. The group listed the following keys to success: (1) voluntary participation, (2) strong coordinator, and (3) interagency networking.

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Harney County Watershed Council

Focus of the Watershed Initiative

Harney County is located in the central region of Oregon. The focus of the group is on the entire basin, an area covering approximately 7,000 square miles. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Burns, with a population of approximately 4,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and mining and/or energy production.

The Harney County Watershed Council was formed in 1998 in response to the state legislature's authorization of the formation of councils and the providing of start-up grants. Establishment of the group was primarily the result of the efforts of the state government, with additional help from the local citizens and federal, state, and tribal governments. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes related to rising lake levels and erosive spring runoffs, fish and wildlife maintenance (there are listed and sensitive species in the area), land-use management of federal lands, general environmental degradation, and watershed education for all citizens and agricultural producers.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management beyond agency and ranching interests, and ineffective or uncoordinated enforcement of the Clean Water Act in the area. The mission/vision statement of the group is "to provide a framework for education, coordination, and cooperation among all interested parties for the development and implementation of watershed action plans beneficial to the people and the environment." Specific short-term goals include: (1) evaluating

conditions, (2) prioritizing projects, and (3) implementing and evaluating those projects. Over the longer term, the goals of the group are “to protect subwatersheds in excellent to good conditions while evaluating those that are not.”

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, Natural Resources Conservation Service, the US Geological Survey, the Burns Paiute Indian tribe, the Oregon Water Resources Department, the Oregon Department of Fish and Wildlife, the Oregon Department of Agriculture, the local county government, soil and water conservation districts, the Malheur Lakes Working Group, the Izaak Walton League, the Audubon Society, the Society for Range Management, Water for Life, Oregon Cattlemen, and citizens. Membership is “somewhat controlled” by the County Court to keep it diverse. The group is directed by a coordinator, funded by state grant money. The group utilizes subcommittees, including Executive, Personnel, Projects, and a few ad hoc committees. The group has an office. Meetings are held monthly. Issues are brought before the group by the coordinator and by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey), similar to past years.

Accomplishments and Ongoing Activities

The group has completed landowner water quality workshops and other educational activities. In addition, the group has planned or is in the process of completing the development of management plans by sub-basins, resource monitoring, scientific research, and on-the-ground remediation or restoration activities. The group is most proud of forming a place for dialogue between entities.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. The group considers the generation of increased public awareness of the resource or resource problem(s) to be essential to their continued problem-solving effort. The group listed the following keys to success: (1) communication, (2) funding, and (3) a love of place.

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Henderson Inlet Watershed Council

Focus of the Watershed Initiative

The Henderson Inlet watershed is located in western Washington. The focus of the group is on the entire basin, an area covering approximately 30,000 acres spread over one county. The upper watershed is a rapidly growing urban/suburban area, while the middle watershed is mostly rural/suburban. In addition, the Inlet is home to important populations of shellfish in the lower Puget Sound area. The human population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Lacey, with a population of approximately 35,000. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs. State government is a major employer in the area.

The Henderson Inlet Watershed Council was formed in 1989 to oversee implementation of the Henderson Inlet Watershed Action Plan, developed in response to concerns about the degradation of shellfish beds by nonpoint source pollution. Establishment of the Plan was primarily the result of the efforts of the Puget Sound Water Quality Authority. Since its formation, the group has been mostly concerned with issues of water quality related to storm water flows and failing septic systems, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species related to the listing of salmon and bull trout in the watershed, land-use management related to impervious surfaces, and general environmental degradation related to urbanization.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and the lack of enforcement of county regulations. Specific short-term goals include: (1) getting the county to enforce regulations, (2) stopping current nonpoint source pollution and preventing further degradation of shellfish beds, and (3) restoring summer water flows to Woodland Creek. Over the longer term, the goals of the group are to reopen shellfish beds to unrestricted status and to ensure that policies are in place to restore salmon runs.

Structure and Functioning of the Watershed Initiative

The group includes members from: one or more Indian tribe, the Thurston Conservation District, the city of Lacey, St. Martin's College, and citizens. Membership is open to all interested parties, although all members must be appointed by the Thurston County

Commissioners and live or have property interests in the watershed. The group is directed by volunteers. The group utilizes subcommittees, including Shellfish and Salmon. Meetings are held monthly. Issues are brought before the group by members, a shellfish grower, interest groups, city and county staff, and state agencies. The group utilizes a formal decision-making process selected by the group during its initial formation, based on a 75 percent supermajority.

The group has no budget. Major providers of in-kind services include the city of Lacey and Thurston County, used for administrative costs.

Accomplishments and Ongoing Activities

The group has completed the development of management plans and the publication of newsletters and/or brochures. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring, and other educational activities such as neighborhood meetings and workshops. The group is most proud of “maintaining water quality in spite of rapid population growth in the county.”

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals of conducting an extensive sanitary survey of the shoreline, and the relative unhelpfulness of federal and state agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal and/or state laws and local regulations, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, the generation of increased public awareness of the resource or resource problem(s), and reducing impervious surfaces. The group listed the following keys to success: (1) enforcement of existing regulations, (2) watershed residents buying into the process, and (3) reducing impacts associated with population growth.

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Henry's Fork Watershed Council

Focus of the Watershed Initiative

The Henry's Fork watershed is located in eastern Idaho. The focus of the watershed group is on the entire basin, an area covering approximately 1,700,000 acres spread over four or more counties. The watershed is 50 percent public land, with the upper basin popular with tourists and the lower basin being a predominantly agricultural area. The population of the focus area is 40,000, with the majority of the population distributed in rural areas. The largest city in the watershed is Rexburg, with a population of approximately 14,000. The local economy is struggling as it is not yet diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in agriculture and food processing, with recreation and tourism contributing additional jobs. The region is also politically very conservative.

The Henry's Fork Watershed Council was formed in 1993 in response to management problems associated with the depletion of the Island Park Reservoir and the subsequent sediment spill into the river. Establishment of the group was primarily the result of the efforts of the US Forest Service and the Bureau of Reclamation, the state Departments of Environmental Quality and Fish and Game, the state legislature, the Yellowstone Soil Conservation District, the Fremont Madison Irrigation District, and the Henry's Fork Foundation. Since its formation, the group has been mostly concerned with issues of water quality to ensure the viability of aquatic species, water supply/flow regimes related to agriculture, the maintenance of fish and wildlife and/or endangered species including the native Yellowstone Cutthroat Trout, and land-use management related to the preservation of open spaces and traditional farming and ranching communities.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, and the lack of local involvement in resource management. The mission/vision statement of the group is as follows: "The Henry's Fork Watershed Council is a grassroots, community forum that uses a non-adversarial, consensus-based approach to problem-solving and conflict resolution among citizens, scientists and agencies with varied perspectives. 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." Specific short-term goals include: (1) cooperating in resource studies and planning that transcend jurisdictional boundaries, while still respecting the mission, roles, water and other rights of each entity; (2) reviewing and critiquing proposed watershed projects, suggesting priorities for their implementation by appropriate agencies; and (3) identifying and coordinating funding sources for research, planning, and implementation in the long-term.

Structure and Functioning of the Watershed Initiative

The group includes active participants from seven federal agencies, seven state agencies, several local conservation districts, the primary local water district, several environmental groups, and a number of academics and citizens. Participation is open to all interested parties. The Council has been chartered by the Idaho Legislature, which appointed two voluntary co-facilitators: the Henry's Fork Foundation, and the Fremont-Madison Irrigation District. The Council utilizes subcommittees, including Water Quality, Native Trout, and Stream Restoration. The group is administered through the Henry's Fork Watershed Center. Meetings and field trips are held eight times per year. Issues are brought before the Council by agency representatives and concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus and collaborative implementation.

The annual budget of the group (not including the value of in-kind services) is approximately \$20,000. The major provider of funding is the Idaho Division of Environmental Quality, with in-kind services provided by the two co-facilitating organizations.

Accomplishments and Ongoing Activities

The Council has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring, scientific research, on-the-ground remediation or restoration activities, and other educational activities. The Council is most proud of its ability to bring diverse interest groups to the table to discuss natural resource issues in a non-confrontational manner.

Overall, the Council considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, most participants believe the problem is being solved at a rate/level greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and federal agencies. Areas of potential weakness include poor attendance by local officials and farmers. The group listed the following keys to success: (1) diverse and inclusive participation, (2) collaborative atmosphere, and (3) adequate financial support.

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Hood Canal Coordinating Council

Focus of the Watershed Initiative

The Hood Canal watershed is located in northwestern Washington. The focus of the group is on the entire basin, an area covering approximately 550 square miles spread over three counties. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Belfair, with a population of approximately 1,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and shellfish harvesting.

The Hood Canal Coordinating Council was formed in 1985 in response to rapid population growth and development coupled with increasing evidence of degraded water quality. Establishment of the group was primarily the result of the efforts of the Washington Department of Ecology. Since its formation, the group has been mostly concerned with issues of water quality related to shellfish harvesting, and the maintenance of fish and wildlife and/or endangered species related to the summer chum and chinook salmon.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination. The mission/vision statement of the group is as follows: "The Hood Canal Coordinating Council recognizes Hood Canal as a national treasure and will advocate and implement locally-appropriate action to protect and enhance the Canal's special qualities." Specific short-term goals include: (1) coordinating agency actions, (2) educating people about the watershed, and (3) planning for future management. Over the longer term, the goals of the group are "to improve regulatory decision-making and policy review by providing a forum for discussion of regional water quality related issues affecting the Hood Canal."

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Corps of Engineers, National Park Service, Environmental Protection Agency, the US Navy, and the National Marine Fisheries Service; the Shokomish Tribe and the Port Bamble S'Klallam Tribe; the Washington Departments of Fish and Wildlife, Environment, Housing, Parks, Natural Resources, and others; and Mason, Jefferson, and Kitsap Counties. Full membership is limited to federal and state agencies, although other groups can participate in other ways. The group is directed by a coordinator and a facilitator, funded by member contributions and state grants. The group utilizes subcommittees, including the Technical Work Group and the Education Committee. The group has an office, located in Quilcene, WA. Meetings are held monthly. Issues are brought before the group by the Executive Director and by member consensus. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). In past years, typical budgets were smaller as the group only recently received a grant from the Washington Department of Fish and Wildlife to become the lead entity for salmon habitat recovery projects in the area. Major providers of funding and in-kind services include the Washington Department of Fish and Wildlife in the amount of \$75,000 used for salmon habitat recovery; and member counties, tribes and ex-officio agencies in the amount of \$75,000 used for general activities and programs.

Accomplishments and Ongoing Activities

The group has completed the publication of a quarterly newsletter. In addition, the group has planned or is in the progress of completing the following activities: the development of management plans for summer chum and salmon habitat recovery, shared decision-making/negotiated problem-solving related to the Regional Water Quality Performance Standards, an annual state of the Hood Canal conference, and other educational activities. The group is most proud of providing a forum for discussion of and education about regional issues.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern, although the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be well-attended and efficiently run meetings, and the helpfulness of local, state and federal agencies. Areas of potential weakness include the inadequacy of funding to pay a Salmon Recovery Coordinator; the size, composition, and/or organizational structure of the group; and a perceived inadequacy of the decision-making process.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, the generation of increased public awareness of the resource or resource problem(s), and a regional

agreement on improved habitat protection strategies. The group listed the following keys to success: (1) adequate funding and staffing, (2) continued cooperation, and (3) education and public involvement.

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Jim Ford's Creek Watershed Advisory Group

Focus of the Watershed Initiative

The Jim Ford's Creek watershed is located in northern Idaho. The focus of the group is on the entire basin, an area covering approximately 66,000 acres spread over one county. The watershed is a mix of state, private, and industrial forest land. The Nez Perce Tribal Land is also in the watershed. The population of the focus area is less than 1,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Weippe, with a population of approximately 200. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The Jim Ford's Creek Watershed Advisory Group was formed in 1997 in response to an EPA Clean Water Act lawsuit settlement agreement and state legislation. Establishment of the group was primarily the result of the efforts of state agencies and the state legislature. Since its formation, the group has been mostly concerned with issues of water quality, the maintenance of fish and wildlife and/or endangered species, and land-use management.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and the lack of local involvement in resource management. Specific goals of the group include: (1) developing a watershed management plan using the TMDL process, (2) recommending specific actions to meet beneficial uses, and (3) ensuring public participation.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Natural Resources Conservation Service, Environmental Protection Agency, the Nez Perce Tribe, the State Soil Commission, Idaho Department of Environmental Quality, the State Department of Lands, the local city and county, and local farmers and ranchers. Membership is open to all interested parties, although approval of membership is required from the supervising Basin Advisory Group. The group is directed by a coordinator, funded by the Idaho Department of Environmental Quality. The group utilizes subcommittees, including the Technical Advisory Group. Meetings are held monthly. Issues are brought before the group through group discussion. The group utilizes a decision-making process that is at the discretion of the coordinator, reliant upon unanimous agreement.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. In past years, budgets were smaller as only local landowners' projects were going forward prior to 1997. Major providers of funding and in-kind services include the Idaho Department of Environmental Quality, the State Department of Lands, the Nez Perce Tribe, the State Soil Commission, and the Environmental Protection Agency.

Accomplishments and Ongoing Activities

The group has completed is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, on-the-ground remediation or restoration activities, conferences/workshops, and other educational activities. The group is most proud of the fact that the TMDL process is moving forward on schedule thanks to coordination with local landowners.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of state and local agencies. Areas of potential weakness include that the federal agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) developing a plan, (2) support of local landowners, and (3) monitoring.

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Lake Pend Oreille Watershed Advisory Group

Focus of the Watershed Initiative

The Lake Pend Oreille watershed is located in northern Idaho. The focus of the group is on the the Lake Pend Oreille watershed upstream of the Albeni Falls Dam to the Montana state line, an area confined within one county. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Sandpoint, with a population of approximately 5,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The Lake Pend Oreille Watershed Advisory Group was formed in 1998 in response to the potential Endangered Species Act listing of the bull trout. Establishment of the group was primarily the result of the efforts of local government. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to the impacts of the Albeni Falls Dam, water quality related to the potential impacts of proposed mines in Montana, the maintenance of fish and wildlife and/or endangered species such as the bull trout, land-use management related to urban/rural growth, poaching, and general environmental degradation from sedimentation.

From an "institutional" (or administrative) standpoint, the group is also concerned with the lack of local involvement in resource management, inadequate interagency or interjurisdictional coordination, transboundary impacts, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws. The mission/vision statement of the group is: "To develop and implement a locally accepted conservation plan which will provide for a population of bull trout with long-term viability and a harvestable surplus, while minimizing disruption to the lifestyles and industries of the areas population." Specific short-term goals include producing a conservation plan and strategy for recovery of the bull trout.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Forest Service, Fish and Wildlife Service, Natural Resources Conservation Service, Avista Water & Power, one or more Indian tribe, one or more state agencies, one or more local agencies, one or more water districts/organizations, one or more environmental groups, one or more non-governmental organizations, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a facilitator, funded by the Avista Corp. The group utilizes various subcommittees. Meetings are held as needed. Issues are brought before the group by soliciting ideas from members. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. If consensus is impossible to reach, majority rule is used. The group has no budget.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the development of management plans and on-the-ground remediation or restoration activities. Individuals and/or subcommittees conduct restoration activities within their authorities and budget. The group is most proud of its ability to work together given the different background and desires of the participants.

Overall, the group believes it is too early to tell whether or not it has been successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification in water allocation, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) different levels of government working better together, (2) being tolerant of others and their views, and (3) scientists need to recognize the difference between their own perceptions and the “hard truth.”

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Latah Creek Stream Team

Focus of the Watershed Initiative

The Latah Creek watershed is located in eastern Washington. The focus of the group is on the lower basin, an area covering approximately 150,000 acres spread over one county. The lower basin is mostly farmland, but includes increasing urban development. The population of the focus area falls within the range of 1,000 to 25,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Spokane, with a population of approximately 250,000. The local economy is moderate in strength and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs. The area is likely to account for 50 percent of the growth in the Spokane area over the next 20 years.

The Latah Creek Stream Team was formed in 1996 in response to severe damage caused by a flood event. Establishment of the group was primarily the result of the efforts of state government. Since its formation, the group has been mostly concerned with issues of water quality such as high turbidity, sedimentation, and fecal coliform; water supply/flow regimes related to low base flows; the maintenance of fish and wildlife and/or endangered species related to habitat loss; land-use management related to agricultural sediment contributions and urban development; and general environmental degradation. From an "institutional" (or administrative) standpoint, the group is also concerned with transboundary impacts, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Fish and Wildlife Service; Natural Resources Conservation Service; the state Departments of Ecology, Fish and Wildlife, and Transportation; the city and county of Spokane; the Spokane County Conservation District; the Hangman Hill Water District; and several private citizens. Membership is open to all interested parties. The group is directed by a coordinator and facilitator, funded by the Department of Ecology. The group does not utilize subcommittees. Meetings are held monthly. Issues are brought before the group by the facilitator, who gets ideas from the group. The group utilizes a formal decision-making process that is at the discretion of the coordinator/facilitator, reliant upon consensus.

Major providers of funding and in-kind services include the Natural Resources Conservation Service in the amount of \$15,000 used for flooding and erosion control measures; the US Fish and Wildlife Service in the amount of \$2,000 used for technical assistance; the state Department of Ecology in the amount of \$205,000 used for programs and group coordination; the state Department of Fish and Wildlife in the amount of \$2,000 used for technical assistance; the Conservation District in the amount of \$5,000 used for coordination and facilitation; and the city and county in the amount of \$4,000 used for technical assistance.

Accomplishments and Ongoing Activities

The group has completed shared decision-making/negotiated problem-solving. In addition, the group has planned or is in the progress of completing the development of a Flood Hazard Management Plan as well as conducting other educational activities such as watershed tours. The group is most proud of the Flood Hazard Management Plan, which has been the main focus of the group.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) continued support of the public, (2) agency involvement, and (3) getting something done.

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Little Butte Creek Watershed Council

Focus of the Watershed Initiative

The Little Butte Creek watershed is located in southwestern Oregon. The watershed is in the southern Cascade Range and extends westward from the slopes of Mt. McLoughlin into the Rogue Basin. Elevations in the watershed range from 1,200 feet where Little Butte Creek joins the Rogue River, up to 9,495 feet at the top of Mt. McLoughlin. The focus of the Little Butte

Creek Watershed Council is on the entire basin, an area covering approximately 238,600 acres spread over 2 counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in rural areas. The largest city in the region is Eagle Point, with a population of approximately 5,000. The local economy is weak and not diversified, featuring natural resource jobs mostly in the sectors of forestry and agriculture. Productive crop soils were destroyed by a 1964 flood; and therefore, the majority of agriculture is cattle, horses, and sheep, with hay being a major crop.

The Little Butte Creek Watershed Council was formed in 1992 in response to the Oregon legislature's pilot program on the Rogue/South Coast and Grande Ronde watersheds to involve local individuals in resource management efforts. Establishment of the group was primarily the result of the Oregon legislature's Strategic Water Management Group, the local County Commissioner's approval, and the actions of citizen activist group(s). Since that time, the Council has been primarily concerned with issues of water supply/flow regimes related to the 12,000 acre feet per year removed by trans-basin diversion; water quality (with temperature being the primary parameter of concern); the maintenance of fish and wildlife and/or endangered species such as the Coho and chinook salmon and the Steelhead; land-use management as it relates to riparian degradation and significant habitat modification; and general environmental degradation caused by rain or snow events, plus unstable soils/slopes that contribute to devastating flood events.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the need for compliance requirements, the need for more local involvement in resource management, and transboundary impacts. The mission/vision statement of the group is "To improve and maintain the general health, beauty, productivity and environmental quality of Little Butte Creek and its tributaries for the economic, aesthetic and environmental value of the region." Specific short-term goals include: (1) voluntarily eliminating push-up dams, (2) voluntarily fencing riparian zones where appropriate, and (3) conserving water. Over the longer term, the goals of the group are to make a difference in this watershed and on the Rogue River as a whole.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Environmental Protection Agency, National Marine Fishery Service, the Oregon Water Resources Department, the Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, the Jackson County Commissioners, the City of Eagle Point, the Medford Water Commission, the Rogue River Valley Irrigation District, one or more environmental groups, the Southern Oregon Land Conservancy, and the Eagle Point School District #9. Membership is open to all interested parties, but voting members must be stakeholders in the watershed.

The Council is directed by a Board of Directors with a coordinator and a projects administrator funded by the Oregon Watershed Enhancement Board. The group utilizes subcommittees, including Water Flow Task Force, Forestry, and Monitoring. Council meetings are held

monthly; the committees may meet more frequently to deal with special issues. Issues are brought before the group either through the Council or by local individuals. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation reliant upon consensus, or if that is impossible, by a super-majority of 90 percent.

The estimated annual budget of the group (including the value of in-kind services) far exceeds \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the US Fish and Wildlife Service, the Bureau of Reclamation, and the US Forest Service in the amount of \$803,000 used for riparian enhancement, irrigation conversion, monitoring equipment, and fish passage technology; state agencies including the Oregon Watershed Enhancement Board in the amount of \$652,929 used for coordination, on-the-ground projects, and education; and the Medford Water Commission in the amount of \$6,000 used for support.

Accomplishments and Ongoing Activities

The Little Butte Creek Watershed Council has completed the development of management plans for the watershed. The group also has the following activities planned or in progress: shared decision-making/negotiated problem-solving; resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The Council actively seeks ways to involve more local stakeholders in resource management efforts.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. The group believes the level/rate of success is greater than that possible through other problem-solving approaches because stakeholder involvement has been substantial and the volunteer project list is greater than the available funds.

Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and federal agencies. Areas of potential weakness include that the local governments have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water use, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) modifying Oregon water law; (2) agencies collaborating on issues; and (3) creating public/private partnerships.

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Little Spokane Watershed Council

Focus of the Watershed Initiative

The Little Spokane watershed is located in eastern Washington. The focus of the group is on the entire basin, an area covering approximately 1,200 square miles spread over three counties. The watershed is one of the more intact watersheds in the Inland Columbia River. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Spokane, with a population of approximately 250,000. The local economy is weak and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Little Spokane Watershed Council was formed in 1995 in response to a desire to nurture a more healthy, thriving, and restorative watershed. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use management, general environmental degradation, and economic issues.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, transboundary impacts, inadequate funding/attention being given to a natural resource problem, lack of local involvement in resource management, ineffective management programs or laws, and excessive growth. The mission/vision statement of the group is "to nurture a more healthy, thriving and restorative Little Spokane Watershed." Specific short-term goals include: (1) doing a nature mapping of the watershed, and (2) doing educational activities in local schools.

Structure and Functioning of the Watershed Initiative

The group includes members of various interests in the local area. Membership is open to all interested parties. The group is directed by a coordinator. The group utilizes subcommittees as needed. Meetings are held as needed. Issues are brought before the group by concerned parties

through phone, email, or word of mouth. The group utilizes a decision-making process that is largely at the discretion of the coordinator/facilitator, although each task group makes its own decisions in its own way. The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, shared decision-making/negotiated problem-solving, legal or policy research, on-the-ground remediation or restoration activities such as planting native plants, and workshops regarding species identification. In addition, the group has planned or is in the process of completing the following activities: resource monitoring, scientific research, periodic publication of newsletters and/or brochures, and other educational activities such as nature mapping.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals, and the perceived inadequacy of the decision-making process due to a lack of active participants.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed adequate funding as a key to success.

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Lower Columbia River Watershed Council

Focus of the Watershed Initiative

The Lower Columbia River watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 215,000 acres spread over two counties. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Clatskanie, with a population of approximately 2,000. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sector of forestry.

The Lower Columbia River Watershed Council was formed in 1997 in response to the Oregon Plan. Establishment of the group was primarily the result of the efforts of local citizens, with additional support from local government. Since its formation, the group has been mostly concerned with issues of water quality, the maintenance of fish and wildlife and/or endangered species related to salmon, and general environmental degradation related to erosion.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, transboundary impacts from upstream activities, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws that tend to be blanket approaches not well suited for specific problems. The mission/vision statement of the group is "To foster better stewardship and understanding of the Lower Columbia River Watershed resources in Columbia County, coordinate, cooperate and try to deal with issues in advance of resource degradation, encourage restoration of natural processes and functions where feasible, and help ensure sustainable watershed health, functions, and uses." Specific short-term goals include: (1) identifying watershed problems through a watershed assessment, (2) carrying out water quality monitoring programs, and (3) developing an action plan. Over the longer term, the goals of the group are "A balanced ecosystem approach that supports a healthy watershed and provides for sustainable natural resources and for an economic base and viable communities."

Structure and Functioning of the Watershed Initiative

The group includes members from: the Natural Resources Conservation Service, Environmental Protection Agency, and the US Geological Survey; one or more Indian tribe; the local Soil and Water Conservation District; city and county officials; a local Drainage District; Friends of Fox Creek; the Farm Bureau; and representatives from agriculture, forestry, aggregate mining, sports fishermen, and commercial fishermen. Membership is limited to those parties approved by the Council membership. The group is directed by a coordinator funded by grants. The group utilizes subcommittees, including a Technical Advisory Committee. The group has an office, located in the coordinator's home. Meetings are held monthly. Issues are brought before the group by members or other concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the Natural Resources Conservation Service in the amount of \$4,000 used for project planning; the state of Oregon in the amount of \$30,000 used for administrative expenses; and the local Soil and Water Conservation District, private citizens, and council members in the amount of \$25,000 used for project planning and technical assistance.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, water quality monitoring, on-the-ground remediation or restoration activities, and the publication of monthly newsletters in local papers. The group is most proud of its water quality monitoring program.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) education, (2) common sense, and (3) addressing real, as opposed to imagined, problems.

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Lower Nehalem Watershed Council

Focus of the Watershed Initiative

The Lower Nehalem watershed is located in the northwest Coast Range of Oregon. The focus of the Lower Nehalem Watershed Council is on the lower basin, an area that spans two counties and includes a 2,749-acre estuary. This section of the basin drains the Nehalem River south of the Sunset Highway (US Hwy 26). The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed near the coast in towns surrounding Nehalem Bay. The largest city in the region is Manzanita, with a population of approximately 730. The local economy is moderate in strength and moderately diversified.

The Lower Nehalem Watershed Council was formed in 1996 at behest of Governor John Kitzhaber to organize community councils and address the “threatened” listing of Coho salmon and other depleted native salmon and trout species. Establishment of the group was primarily the result of citizen/activist group(s). Since that time, the group has been mostly concerned with issues of water quality, the maintenance of fish and wildlife habitat, and general environmental degradation.

From an administrative standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to natural resource problems, a lack of local involvement in resource management, transboundary impacts, and inadequate interagency or interjurisdictional coordination. The mission/vision statement of the group is to be a “non-profit, volunteer organization dedicated to the protection, preservation and enhancement of the Nehalem Watershed through leadership, cooperation and education. As an advisory body, [the group’s] goal is to establish and support the implementation of a watershed management plan through consensus.” Specific short-term goals include: (1) election of new Council executives, (2) maintaining a role of meeting facilitator, and (3) updating the water monitoring Quality Assurance Plan.

Structure and Functioning of the Watershed Initiative

The Council includes members from the Oregon Departments of Forestry, Environmental Quality, and Fish and Wildlife; Natural Resource Conservation Service; several private timber companies; local citizens; and municipal and county governments. Membership is open to all interested parties up to a total of 40 members. The group is directed by a coordinator funded by the Oregon Watershed Enhancement Board, and utilizes subcommittees, including the Steering Committee, to achieve tasks. The Council maintains an office in Nehalem with a full time intern. Meetings are held monthly in Manzanita and conducted by a volunteer facilitator. Anyone can bring an issue before the Council. Decisions are made utilizing a process that has been predetermined by the group during its initial formation reliant upon consensus. If consensus cannot be reached, the bylaws now provide a means to vote at a later time.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. A majority of funding comes from the Oregon Watershed Enhancement

Board in the amount of \$27,500 used for the coordinator's salary and monitoring and assessment work. The Oregon Watershed Enhancement Board recently awarded another \$20,000 to the Council, with matching dollars provided by Resource Assistance for Rural Environments (RARE) Program supporters. The RARE Program, administered by the University of Oregon, provides technical support and 1,700 hours of service from post-graduate interns to work on specific projects in rural areas.

Accomplishments and Ongoing Activities

The Lower Nehalem Watershed Council has the following activities planned or in progress: (1) joined with the Upper Nehalem Council in contracting with Portland State University to complete a Nehalem Basin Watershed Assessment (projected finish February 2000); (2) based upon issues identified in the assessment, work together with the RARE intern to create a written Action Plan for prioritizing and developing restoration and educational projects; and (3) continued water quality monitoring to measure pH, temperature, turbidity, total coliform, dissolved oxygen, and conductivity. The Council is most proud of the one hundred plus volunteers that participated in the 1999 Nahalem Bay Clean-up Project.

The strengths of this Council appear to be the perceived adequacy of decision-making arrangements, and the helpful technical expertise/advice provided by state agency representatives. Areas of potential weakness include the fact that only a few people are active in project follow-up or participating in discussions; poorly attended meetings; past leadership problems; and inadequate funding to meet short-term goals. Overall, the Council considers itself to be relatively unsuccessful in addressing the natural resources problem of concern.

The group considers on-the-ground modification of the physical landscape to be a primary factor in their continued problem-solving efforts. The group listed the following keys to success: (1) leadership training; (2) leadership that can elicit trust from landowners, farmers, etc.; and (3) the availability of trained coordinators to help councils function well.

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Lower Payette River Watershed Advisory Group

Focus of the Watershed Initiative

The Lower Payette watershed is located in southwestern Idaho. The focus of the Lower Payette River Watershed Advisory Group is on the lower Payette River from the Black Canyon Dam to the confluence with the Snake River, an area covering approximately 300,000 acres spread over two counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Payette, with a population of approximately 10,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sector of agriculture.

The Lower Payette River Watershed Advisory Group was formed in 1995 in response to the need to develop TMDLs for the river. Since its formation, the group has been mostly concerned with issues of water quality, which is degraded by agricultural activity. Establishment of the group was primarily the result of the efforts of the Idaho Department of Environmental Quality and the local Soil Conservation District.

From an “institutional” (or administrative) standpoint, the group is also concerned with the lack of local involvement in resource management. Specific short-term goals include: (1) maintaining and restoring beneficial uses in the Payette River, (2) securing funding sources for implementation of best management practices, and (3) determining the appropriate water quality standards for the Payette River.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Bureau of Reclamation, Natural Resource Conservation Service, one or more state natural resource agencies, one or more local governments, and one or more water districts/organizations. Membership is open to all interested parties. The group is directed by a coordinator, and utilizes subcommittees, including a Technical Advisory Committee. Meetings are held monthly and quarterly. Issues are brought before the group through the submission of agenda items before each meeting. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include state agencies in the amount of \$10,000 used for administration.

Accomplishments and Ongoing Activities

The Lower Payette River Watershed Advisory Group has completed resource monitoring and scientific research. In addition, the group has planned or is in the process of completing the development of management plans, on-the-ground remediation or restoration activities, and the publication of newsletters and/or brochures.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies. Areas of potential weakness include the perceived inadequacy of decision-making arrangements, and poorly attended meetings except during times of conflict.

The group considers the following actions to be essential to their continued problem-solving efforts: voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) stakeholder involvement, (2) education, and (3) awareness of the problem.

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Lower Rogue Watershed Council

Focus of the Watershed Initiative

The Lower Rogue watershed is located in southwest Oregon. The focus of the Lower Rogue Watershed Council is on the lower basin, an area covering approximately 322,000 acres spread over 1 county. The population of the focus area falls within the range of 5,000 to 25,000, with

the majority of the population distributed in an equal mix between rural areas and towns, and includes a significant retiree community. The largest city in the region is Gold Beach, with a population of approximately 2,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism (particularly in commercial sport fishing), and agriculture.

The Lower Rogue Watershed Council was formed in 1995 because the region was chosen by the state as one of two "model" areas to form watershed councils to address salmonid and other resource issues at a watershed scale. Establishment of the group was primarily the result of the US Forest Service, the Oregon Watershed Enhancement Board, the Oregon Department of Fish and Wildlife, and the County Commissioners. The creation of the group followed earlier problem-solving attempts involving the President's Northwest Forest Plan. Since its formation, the group has focused on issues of water quality related to temperature, dissolved oxygen, and turbidity; the maintenance of fish and wildlife and/or endangered species, such as the coho salmon and steelhead; and land-use management practices including sustainable resource extraction and the prevention of damage or degradation of other resources in the process.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the transboundary effects of water quality, overfishing, and dams; and the lack of local involvement in resource management. The mission/vision statement of the group is "To help Foster, develop and coordinate a basin-wide approach to resource planning and management; to protect, enhance and restore the natural resources of the entire Rogue Basin through a framework of assessing the Lower Rogue's watershed conditions and trends; and to implement and monitor proven practices and test new management practices designed to support environmental integrity and economic stability, for the communities of the Lower Rogue Watershed." Specific short-term goals include: (1) improving fish passage, (2) reducing threats to highly productive areas (salmonid core areas), (3) fencing and planting riparian areas, (4) storm-proofing forest roads to reduce sediment, and (5) educating school children on watershed ecology and natural resource management.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, the Oregon Department of Fish & Wildlife, the County Commission, one or more environmental groups, one or more non-governmental organizations including the Port of Gold Beach and the Curry Anadromous Fishermen, one or more academic or citizens groups, and other participants. Membership is open to all, but voting membership is limited. The group is directed by a coordinator funded by the Oregon Watershed Enhancement Board, and does not utilize subcommittees. The group has an office, located at the Curry Soil and Water Conservation District office. Meetings are held monthly. Issues are brought before the group by the coordinator who formulates the agenda. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services

include the US Forest Service in the amount of \$3,000 used for technical design; the Oregon Watershed Enhancement Board, Oregon Department of Fish and Wildlife, and Oregon Department of Environmental Quality in the amount of \$99,000 used for coordination and projects; the Curry Soil and Water Conservation District in the amount of \$10,000 used for office supplies; and other agencies including the National Fish & Wildlife Foundation and Oregon State University Extension in the amount of \$82,000 used for projects and education.

Accomplishments and Ongoing Activities

The Lower Rogue Watershed Council has completed the following activities: the development of management plans; on-the-ground remediation or restoration activities, including fencing and planting riparian zones, replacing culverts, and removing unstable fill soil; publication of a quarterly newsletter; and other educational activities, such as a wetland demonstration area, education symposium, and a watershed steward program. In addition, the group has the following activities in progress: shared decision-making/negotiated problem-solving where all landowners jointly evaluate the resource, and water quality monitoring. The group is most proud of their Lobster Creek Partnership which is a coordinated planning, management, and restoration effort.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. The group believes the level/rate of success is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; and the adequacy of funding to meet short-term goals. An area of concern is the occasionally poor attendance at meetings.

The group considers the following actions to be essential to their continued problem-solving efforts: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and education. The group listed the following keys to success: (1) partnerships (agency/landowner/council), (2) coordinated resource evaluation and planning, and (3) citizen involvement.

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Malheur/Owhyee Watershed Council

Focus of the Watershed Initiative

The Malheur/Owhyee watershed is located in eastern Oregon. The focus of the Malheur/Owhyee Watershed Council is on the entire basin, an area covering approximately 3,000,000 acres spread over 1 county. The watershed ranges in elevation between 2,000 feet to 5,000 feet. In the lower elevations there is intensely irrigated agriculture. The middle range is dominated by livestock grazing, and the upper range is forested. The BLM is major land manager, controlling some 2,100,000 acres. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Ontario, with a population of approximately 12,000. The local economy is weak and moderately diversified, featuring natural resource jobs mostly in agriculture.

The Malheur/Owhyee Watershed Council was formed in 1995 in response to the watershed being listed under the Clean Water Act section 303(d) as having water quality problems. Establishment of the group was primarily the result of citizen/activist group(s). Since that time, the group has primarily concerned itself with issues of water quality, such as sediment, bacteria, temperature, algae, and flow modification. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate interagency or interjurisdictional coordination as seen by conflicts between the Bureau of Land Management, landowners; and environmental groups. The group’s mission/vision statement is “To lead the effort to conserve, protect, and enhance all watershed resources for optimum economic and environmental benefits within the Malheur watershed.” Specific short-term goals include: (1) reducing soil loss from cropland, and (2) controlling noxious weeds. Over the longer term, the goals of the group include removing streams from the 303(d) list, improving rangeland, and meeting standards for urban runoff.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Natural Resource Conservation Service; the Oregon Department of Environmental Quality, Oregon Department of Agriculture, Oregon Department of Fish & Wildlife, Oregon State University Cooperative Extension, Oregon State Parks; the local County Health Department, County Court, Soil and Water Conservation District, the Owhyee Irrigation District, Vale Irrigation District, Warm Spring Irrigation District, Oregon Environmental Council, Idaho Rivers project, and one or more academic or citizens groups.

Membership is open to all interested parties but the group tries to hold membership to 25. The group is directed by a coordinator and facilitator funded by the Oregon Watershed Enhancement Board, and utilizes subcommittees. The group has an office, located at the Malheur County Soil and Water Conservation District office. Meetings are held monthly. Issues are brought before the group by committees or interest groups. Decisions are made

utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the Natural Resources Conservation Service in the amount of \$7,500 used for office costs and transportation; the Oregon Watershed Enhancement Board in the amount of \$35,000 used for coordinator and administrative costs; and local agencies including the Malheur County Soil and Water Conservation District in the amount of \$15,000 used for supplies, clerical, and transportation costs.

Accomplishments and Ongoing Activities

The Malheur/Owhyee Watershed Council has completed the development of management plans including the Malheur Basin Assessment, and the Bully Creek Watershed Action Plan. The group is in the process of completing a management plan for the Owhyee as well. The group has the following activities in progress: shared decision-making/negotiated problem-solving involving conflicts between the Bureau of Land Management and landowners; resource monitoring, including a 4 year old ongoing water quality monitoring program; multiple on-the-ground remediation or restoration activities; publication of a quarterly newsletter; and ongoing planning for conferences/workshops. The group is most proud of completing two assessment plans and achieving a level of cooperation between all participants.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; well-attended and efficiently run meetings; and the adequacy of funding to meet short-term goals. Areas of potential weakness include the perceived inadequacy of decision-making arrangements. The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) coordination, (2) communication, and (3) cooperation.

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Model Watershed Project

Focus of the Watershed Initiative

The Lemhi River watershed is located in east-central Idaho. The focus of the group is on the three sub-basins of the Lemhi River, an area covering approximately 1,699,000 acres spread over 2 counties. The two counties in the focus area are about 90 percent federally owned, although nearly 98 percent of the river bottoms where fish spawning and rearing occurs are privately owned. The area is considered a high mountain desert with low rainfall and extremely high and low temperatures. The rivers are the lifeblood of the region and provide irrigation for agricultural communities. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and towns/cities. The largest city in the region is Salmon, with a population of approximately 3,300. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and mineral and/or energy production.

The Model Watershed Project was formed in 1992 in response to the decline of salmon and steelhead runs in the Lemhi River basin and the desire of locals to be ahead of the curve in watershed restoration with relation to fish passage and habitat. Establishment of the group was primarily the result of the efforts to the Lemhi Soil and Water Conservation District and the local irrigation district. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to fish passage barriers that were present due to irrigation diversion dams, and the maintenance of the three salmon species in the basin that have been listed as endangered species.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with inadequate interagency or interjurisdictional coordination, and ineffective management programs or laws. Several permits have to be obtained before doing any work near streams or wetlands. The Model Watershed Project has worked to coordinate the permitting process and assist landowners with agency requirements. The mission/vision statement of the group is "To provide a basis of coordination and cooperation between local, private, state, tribal, and federal fish and land managers, land-users, landowners, and other affected entities to manage biological, social and economic resources to protect, restore, and enhance anadromous and resident fish habitat." Specific short-term goals include: (1) providing safe and timely passage of migrating fish through critical reaches of the watersheds, (2) protecting spawning areas by ensuring that gravels are managed to preclude the loss of habitat, and (3) protecting and enhancing water quality to ensure maximum juvenile fish survival. Over the longer term, the goals of the group are "To enhance and restore anadromous and resident fish habitat and achieve and maintain a balance between resource protection and resource use on a holistic watershed level."

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, and Natural Resources Conservation Service; the Shoshone Bannock Tribes; the state Department of Fish and Game and Soil Conservation Commission; the local Lemhi and Custer Soil and Water Conservation Districts; the Lemhi County Commissioners; the Lemhi Irrigation District; the Round Valley Canal Company; Trout Unlimited; the Lemhi County Cattle and Horse Growers Association; and landowners from each sub-watershed. Membership is open to all interested parties.

The group is directed by a coordinator funded by a grant from the Bonneville Power Administration. The group utilizes subcommittees that consist of technical committees that work in each watershed and an Advisory Committee that oversees policy. The group has an office, located at the coordinator's contact place. Meetings are held monthly. Issues are brought before the group by members of the Technical or Advisory Committees. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the US Forest Service, Bureau of Reclamation, and Fish and Wildlife Service used for technical assistance and projects; the state Fish and Game and Soil Conservation Commission used for technical assistance, administration, and projects; the local Natural Resources Conservation Service and the Lemhi and Custer Soil and Water Conservation Districts used for administration of grant funding and projects; and landowners who contribute cost-sharing for project implementation.

Accomplishments and Ongoing Activities

The group has completed the following activities: a Model Watershed Plan for management, publication of newsletters and/or brochures, and a successful Salmon Symposium. In addition, the group has the following activities planned or in progress: shared decision-making/negotiated problem-solving, resource monitoring, on-the-ground remediation or restoration activities, and other educational activities such as publishing news articles and visiting schools. The group is most proud of helping to change some irrigation diversion dams to allow fish passage while maintaining water deliveries.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the adequacy of funding to meet short-term goals; and the helpfulness of local, state and federal agencies. Areas of potential weakness include that the meetings are sometimes not well-attended.

The group considers the following actions to be essential to their continued problem-solving effort: changes in state or federal law, a fundamental reallocation of agency resources and priorities, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) a willingness of private landowners to accept new ideas and improve natural resource uses, (2) good attitudes by local agency people when working with landowners, and (3) community efforts and public awareness of issues affecting fish passage and habitat.

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Nisqually River Management Program

Focus of the Watershed Initiative

The Nisqually River watershed is located in western Washington. The focus of the group is on the entire basin, an area covering approximately 493,000 acres spread over three counties. The Nisqually Watershed runs from the Nisqually Glacier on the flank of Mount Rainier to Puget Sound at Nisqually Delta. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Yelm, with a population of approximately 1,300. The local economy is moderate in strength and moderately diversified. A significant percentage of the region's population is employed in natural resources related jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The Nisqually River Management Program was formed in 1987 upon passage of the Nisqually River Management Plan by the state legislature in response to a desire to proactively preserve the unique natural, economic, and cultural resources of the watershed. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes; water quality related to fecal coliform from agricultural wastes and temperature issues related to the degradation of the riparian ecosystem; the maintenance of fish and wildlife and/or endangered species; land-use management related to creating a long term management plan for the upper watershed, Mount Rainier National Park, and the Nisqually National Wildlife Refuge; and general environmental degradation related to siltation from historical logging practices. The group is interested in retaining instream flows for salmonids and managing stormwater impacts

in urbanizing sub-basins. The group also wants to increase public access and responsible management of recreational resources which might include removing residents from the floodplain.

From an “institutional” (or administrative) standpoint, the group is concerned with problems associated with inadequate interagency or interjurisdictional coordination related to surface sand and gravel mining in the region, transboundary impacts related to effluent plumes from wastewater treatment plants in the area, inadequate funding/attention being given to a natural resource problem related to the cleanup of toxic sites and the protection of riparian areas to support salmon recovery, the lack of local involvement in resource management, and ineffective management programs or laws related to the enforcement of land-use regulations (particularly regarding septic tanks). The mission/vision statement of the group is the implementation of the Nisqually River Management Plan through collaboration, education and advocacy. Specific short-term goals include: (1) coordinating salmon recovery efforts in the watershed, (2) coordinating the review of water resource issues throughout the watershed, and (3) completing the development of an educational website on the watershed and program.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, National Park Service, the US Department of Defense out of Fort Lewis, and Natural Resources Conservation Service; the Nisqually Tribe; the state Departments of Ecology, Fish and Wildlife, Natural Resources, and Parks & Recreation; the local Thurston and Pierce County Conservation Districts; Thurston, Pierce, and Lewis counties; environmental groups such as the Nisqually Delta Association and the Tahoma Land Conservancy; local citizens; and other participants including private corporations and local municipal entities. Membership is open to all interested parties, although voting members are limited to those specified at the outset of the process.

The group is directed by a coordinator funded by the state legislature via the Department of Ecology. The group utilizes subcommittees, including Natural Resources, Education, and Public Access. The group has an office, located at the Washington Department of Ecology. Meetings are held monthly. Issues are brought before the group either through individual Council members, citizens, subcommittees, or as a result of collective strategy planning. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is \$75,000, provided by the state Department of Ecology for staff support. From 1991 to 1995, annual budgets averaged \$100,000.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, the publication of newsletters and/or brochures, research symposia, annual watershed festivals, and other educational activities including student watershed congresses and teacher trainings. In addition, the group has the following activities planned or in progress: resource monitoring, scientific research, and on-the-ground remediation or restoration activities focused primarily on riparian areas.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the group believes the level/rate of success is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) stable staff support, (2) broad inclusiveness, and (3) education.

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North Fork John Day Watershed Council

Focus of the Watershed Initiative

The North Fork John Day watershed is located in eastern Oregon. The focus of the group is on the mid-basin, an area spread over four or more counties. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly

rural areas. The largest city in the region is Long Creek, with a population of approximately 220. The local economy is weak and not diversified. A significant percentage of the region's population is employed in natural resources jobs, mostly in the sectors of agriculture and/or ranching. The area is undergoing a transformation from a traditional resource extraction economy towards tourism with a somewhat reduced role for agriculture and forestry.

The North Fork John Day Watershed Council was formed in 1994 in response to the formation and adoption of the Oregon Watershed Enhancement Board. Establishment of the group was primarily the result of the efforts of local citizens, the local governments, and a local tribe. Since its formation, the group has been mostly concerned with issues of fish and wildlife maintenance of the threatened steelhead in the basin, water supply/flow regimes related to achieving a balance between instream flow requirements and agricultural needs, and water quality related to temperature. From an "institutional" (or administrative) standpoint, the group is concerned with problems associated with the lack of local involvement in resource management. The mission/vision statement of the group is "to cooperate in the planning, funding and implementation of actions that enhance and sustain the health of the watershed, honor tribal treaty rights, and maintain the long-term economic stability of individuals and communities that rely on the watershed's natural resources." Specific short-term goals include: (1) recommending and administrating programs to enhance/restore resources, (2) collecting and compiling data upon which to base future activities, and (3) soliciting funding to achieve program goals.

Structure and Functioning of the Watershed Initiative

The group includes members from: one or more Indian Tribes, one or more local agencies, one or more non-governmental organizations, one or more academics or citizens, and other participants. Membership is limited to 13 positions that were determined at the beginning of the process.

The group is directed by a coordinator funded by the Oregon Watershed Enhancement Board. The group does not utilize subcommittees. The group has an office, located in Monument. Meetings are held monthly. Issues are brought before the group by council members, agencies, and concerned groups or citizens. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 and \$75,000. Budgets have grown in recent years as the watershed council itself has grown. Major providers of funding and in-kind services include the federal Natural Resources Conservation Service in the amount of \$10,000 used for technical assistance; the Oregon Department of Fish and Wildlife in the amount of \$5,000 used for technical assistance; the Soil and Water Conservation District in the amount of \$15,000 used for administration, office space, and other expenses; and the Confederated Tribes of Warm Springs in the amount of \$8,000 used for technical assistance.

Accomplishments and Ongoing Activities

The group has the following activities planned or in progress: the development of management plans, shared decision-making/negotiated problem-solving related to solving a dispute over removing a dam, water quality monitoring, on-the-ground remediation or restoration activities involving dam removal and riparian revegetation, publication of a quarterly newsletter, a conference planned for the spring of 2000, and other educational activities including working with local high schools. The group is most proud of the successful completion of its push-up dam removal projects.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, the group believes the level/rate of success is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and federal agencies. Areas of potential weakness include that the local governments have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) patience by individuals and the council; (2) interagency cooperation; and (3) specific goals that are measurable.

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Port Orford Watershed Management Council

Focus of the Watershed Initiative

The Port Orford watershed is located in southwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 7,500 acres spread over one county. The

watershed is within the city limits of Port Orford and the urban growth boundary. Primary concerns are residential development and timber harvesting and their impacts on the city's municipal water supply. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in an equal mix of rural areas and cities/towns. The largest city in the region is Port Orford, with a population of approximately 1,000. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and commercial and recreational fishing.

The Port Orford Watershed Management Council was formed in 1994 in response to a timber harvest and subsequent landslide on the property directly upstream from Port Orford's municipal reservoir, which caused unacceptable levels of turbidity in Port Orford's primary municipal water supply. Establishment of the group was primarily the result of the efforts of the city of Port Orford. Since its formation, the group has mostly been concerned with issues of water supply/flow regimes; water quality problems related to logging and salt water infiltration; the maintenance of fish and wildlife and/or endangered species related to the listing of the Coho salmon as threatened; land-use management related to the current timber laws that do not protect municipal water supplies; and general environmental degradation related to increased residential development and roads, which are causing nonpoint source pollution.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, ineffective management programs or laws, and county zoning issues. The mission/vision statement of the group is "to protect and enhance the Port Orford watershed resources through cooperative efforts of the Port Orford Watershed Council, governmental agencies, property owners, businesses, and citizens of the Port Orford watershed area." Specific short-term goals include: (1) protecting the city's municipal water supply, and (2) proposing and carrying out projects that accomplish its goals. Over the longer term, the goals of the group are to protect the ecosystems of the watersheds that the council covers.

Structure and Functioning of the Watershed Initiative

The group includes members from the city of Port Orford, residents and citizens of the watershed, and the coordinator of the South Coast Coordinating Council. Membership is limited to people who reside in the city or the watershed. The group is directed by the city of Port Orford. The group utilizes subcommittees, including Newsletter, Wetlands Interpretive, and Water Monitoring. Meetings are held monthly. Issues are brought before the group by council members, the city officials, and the public. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Nearly all of the funding for the group comes from the city of Port Orford and is used for copies and mailings. Additional funding comes from granting organizations in varying amounts used for specific projects.

Accomplishments and Ongoing Activities

The group has completed the following activities: shared decision-making/negotiated problem-solving; on-the-ground remediation or restoration activities, including culvert and bridge replacement, and the installation of fish ladders; and the publication of several newsletters. The group has the following activities planned or in progress: the development of management plans, water quality monitoring, legal or policy research related to permits for timber harvesting in the watershed, and other educational activities. The group is most proud of completing a fish passage ladder at the reservoir, replacing bridges and culverts with a fish passage ladder, and obtaining funding for a wetlands interpretive center.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the group believes the level/rate of success is greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; and the helpfulness of local, state and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals of purchasing key watershed properties.

The group considers the following actions to be essential to their continued problem-solving effort: changes in state or federal law, a substantial modification of land-use practices, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) funding which allows the purchase of key properties in the watershed, (2) laws which are strictly enforced with fines that truly deter violations, and (3) good technical assistance from resource agencies.

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Puyallup River Watershed Council

Focus of the Watershed Initiative

The Puyallup River watershed is located in western Washington, near Puget Sound. The focus of the group is on the entire basin, an area covering approximately 948 square miles spread

over one county. The basin is very diverse and extends from Mount Rainier National Park at 14,411 feet to the waters of Commencement Bay in Tacoma. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Tacoma, with a population of approximately 280,000. The local economy is moderate in strength and highly diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and mineral and/or energy production.

The Puyallup River Watershed Council was formed in 1995 in response to the Lower Puyallup Non-Point Pollution Action Plan adopted by Pierce County in that year. The Action Plan required the creation of a non-partisan group to oversee the implementation of the plan's recommendations. Establishment of the group was primarily the result of the efforts of the Washington Department of Ecology and Pierce County to satisfy the requirements of the Action Plan. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes, water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with inadequate interagency or interjurisdictional coordination, transboundary impacts, inadequate funding/attention being given to a natural resource problem, the lack of local involvement in resource management, and ineffective management programs or laws. The mission/vision statement of the group is "To provide an informational forum to give those in the watershed the opportunity to promote programs to restore, maintain, and enhance the watershed in order to protect its environmental, economic, and cultural health." Specific short-term goals include: (1) salmonid recovery, (2) education and outreach, and (3) creating a forum to bring everyone in the watershed together. Over the longer term, the goals of the group are to divide into sub-watershed groups based on smaller basins and to sustain the Council.

Structure and Functioning of the Watershed Initiative

Membership of the Council includes: the cities of Auburn, Carbonado, Bonney Lake, Buckley, Federal Way, Fife, Milton, Orting, Enumclaw, Pacific, Puyallup, South Prairie, Sumner, Tacoma, and Wilkeson; the US Forest Service, Fish and Wildlife Service, National Park Service, the Natural Resources Conservation Service, Environmental Protection Agency, and the US Geological Survey; the Puyallup and Muckelshoots Indian Tribes; the state Conservation Commission; the state Departments of Fish and Wildlife, Ecology, and Natural Resources; the Puget Sound Water Quality Action Team; Pierce County; Pierce County Conservation District; Washington State University Cooperative Extension; Pacific Lutheran University; University of Washington; Citizens for a Healthy Bay; Puget Sound Salmon Enhancement Group; Foothills Rails to Trails; Trout Unlimited; Farm Bureau; Cattleman's Association; the Boeing Company; Champion Pacific Timberlands; Puget Sound Energy; EnCo Corporation; the Pierce County Regional Water Association; and local citizens. Membership is open to any person who lives, plays, or works in the watershed.

The group is directed by a coordinator funded by Pierce County and the Washington Department of Ecology. The group utilizes committees, including Education, Fish and Wildlife, Water Issues, Upper Puyallup Non-Point Action, Basin Affiliates, Inter-Governmental Relations, Culture & Heritage, Citizens Action, and Operations. Meetings are held monthly. Issues are brought before the group by the coordinator. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon consensus. The group has no official budget. Pierce County and the Washington Department of Ecology contribute \$50,000 each to be used for staff salaries.

Accomplishments and Ongoing Activities

The group has completed the development of management plans. In addition, the group has the following activities planned or in progress: shared decision-making/negotiated problem-solving, resource monitoring, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of a workshop for elected officials in 1998 and two grant projects related to salmon recovery.

Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; and the helpfulness of local and state agencies. Areas of potential weakness include the inadequacy of funding to meet short-term and long-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: changes in state or federal law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modification of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s).

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Rickreall Watershed Council

Focus of the Watershed Initiative

The Rickreall Creek watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 64,000 acres. The headwaters develop in managed forests and feed the city of Dallas reservoir, which has a capacity of 500 million cubic feet of water. Below the dam, Rickreall Creek meanders through steep gullies and into the Dallas city limits where 26 acres of park and private homes line the waterway. The effluent from Dallas' wastewater treatment plant is below the city limits, about nine miles before the creek flows into the Willamette River.

The watershed is highly rural, with the exception of the City of Dallas (population of 13,000). The local economy is moderate in strength and moderately diversified. Local employers include managed forestry, a lumber mill, an electronic chip manufacturer, retail stores, the hospital, schools, government, and several small manufacturers. Homebuilding in the area has been restricted to 175 homes annually for the past several years based on wastewater treatment capacity. The limitation will continue pending the City's ability to access additional fresh water for future needs.

The Rickreall Watershed Council was formed in 1995 in response to water quality and quantity problems. Establishment of the group was primarily the result of the efforts of Polk County and the City of Dallas. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to a lack of water during the summer months for urban and agricultural uses, and poor water quality during drought conditions.

The mission/vision statement of the group is: "[T]o share information, reduce duplication of activities, help address watershed management issues in the Rickreall basin and to provide a framework for coordination and cooperation among key interests. To foster better stewardship and understanding of Rickreall watershed resources. To promote a balanced ecosystem that supports a health watershed which provides for an economic base and viability of the community." Specific short-term goals include developing an action plan and projects.

Structure and Functioning of the Watershed Initiative

Members of the Rickreall Watershed Council include: farmers, urban and rural residents, environmentalists, timber interests, mining interests, manufacturers, and various governmental representatives. Membership is limited to one representative from each stakeholder group, each one with an alternate.

The group utilizes committees, including Outreach, Assessment, and Oversight. These committees meet monthly to work on projects. Other ad hoc committees are formed as needed. All decisions are made by consensus. No quorum is specified; business is done by those in attendance. The Council has developed By-laws and a set of behavioral rules. Members who

disagree with a proposed motion may “consent” rather than blocking a decision by making consensus impossible.

The annual budget of the Council is approximately \$60,000. The Council is funded by various grants and in-kind services from the city and county. Currently, the Rickreall Watershed Council plans to outsource the half-time coordinator and operations position to a third party. Polk County is the Fiscal Agent of the group.

Accomplishments and Ongoing Activities

The Council has completed all of its organizational functions, including its Charter, By-laws, Mission Statement, and Rules of Conduct. Through a year-long schedule of presentations by each stakeholder, the Council has come to understand the function and viewpoint of others. The meeting atmosphere has become much less contentious and more constructive. Informally, members have agreed to bring up problems and potential projects from their own area of interest, rather than point to the perceived problems of other stakeholders.

A current grant is funding the Rickreall Watershed Council’s assessment of Rickreall Creek. Future instream projects will be planned based on that assessment. Outreach activities have publicized the Council’s activities. A logo and poster contest was conducted by the Dallas Public Library. A web-site is planned for 2000. Arrangements to sponsor environmental video programs on the local cable channel have been completed. A tree planting project is scheduled for 2000. The group expects to focus on public information, small high visibility projects, and voluntary partnering for municipal and agricultural projects. The group listed the following keys to success: (1) making it voluntary; (2) discussing issues; and (3) having incentive to do projects.

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Riparian Conservation Agreement Working Group

Focus of the Watershed Initiative

The focus of the working group is the Salmon River basin in eastern Idaho. The focus area includes approximately 3,000,000 acres spread over 1 county. Elevations in the basin range from 4,000 to 10,000 feet. The high elevation lands are primarily federal lands with the bottoms lands mostly privately owned. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Salmon, with a population of approximately 3,000. The local economy is moderate in strength and highly diversified. A significant percentage of the region's population is employed in natural resources jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and mineral and or energy production.

The Riparian Conservation Agreement Working Group was formed in 1997, inspired by Catron County's (New Mexico) advocacy of a county right to be involved in decision-making. Establishment of the group was primarily the result of the efforts of citizens, with additional assistance from federal and local agencies. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to dewatering of streams, water quality related to the listing of some streams as water quality impaired, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation. From an "institutional" (or administrative) standpoint, the group is concerned with problems associated with ineffective management programs or laws, inadequate interagency or interjurisdictional coordination, and the lack of local involvement in resource management.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, Natural Resources Conservation Service, one or more Indian tribe, one or more state agencies, one or more local agencies, one or more environmental groups, one or more water districts/organizations, one or more non-governmental organizations, and one or more academics or citizens. Membership is open to all interested parties.

The group is directed by a volunteer appointed by Lemhi County. Meetings are held monthly. Issues are brought before the group by interested parties. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon majority rule. The group has no budget.

Accomplishments and Ongoing Activities

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground

improvements. In addition, the group believes the level/rate of success is greater than that possible through other problem-solving approaches and most participants believe the problem is being solved.

Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. The group believes that the continued problem-solving effort will require maintaining a complement of people with the energy to meet and discuss what is right and fair. The group listed communication as a key to success.

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Sandy River Basin Watershed Council

Focus of the Watershed Initiative

The Sandy River watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 508 square miles over two counties. The upper section of the watershed is US Forest Service land, the middle section is mostly private land, and the lower section is both Bureau of Land Management and private land. In addition, there is federal Wild & Scenic River status along the upper and lower portions of the watershed, with additional state designation on the lower section only. There is also an endangered species of salmon in the watershed. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Sandy, with a population of approximately 5,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The Sandy River Basin Watershed Council was formed in 1997 in response to Oregon Governor Kitzhaber's program for creating watershed councils. Establishment of the group was primarily the result of the efforts of citizen/activists. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to the uses of the city of Portland, water quality, the maintenance of fish and wildlife and/or endangered species, land-use management related to the county's liberal policies toward issuing permits for

development, and general environmental degradation related to the lack of enforcement of existing regulations.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, the transboundary impacts of tourism from Portland, inadequate funding/attention being given to the natural resource problems, and ineffective management programs or laws. The mission/vision statement of the group is “To protect the natural, cultural, and historical resources of the Sandy River Basin.” Specific short-term goals include: (1) removing Marmot Dam from the Sandy River, (2) eliminating hatchery programs from the basin, and (3) increasing wild/native stocks of fish. Over the longer term, the goals of the group are to involve government, business, and citizens on the council to address the ever increasing issues in the basin. The group believes the mission statement cannot be implemented without the support of everyone who lives and recreates in the basin.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Multnomah and Clackamas Counties, the Metro Regional Parks and Greenspaces program, the cities of Sandy and Portland, and academics and/or citizens. Membership is limited to the parties set out as members in the bylaws. The group is directed by a volunteer coordinator. The group utilizes subcommittees including, Hatchery Fish, Oregon Watershed Enhancement Board grant, and others not yet in action. The group has an office, located in Eagle Creek, OR. Meetings are held monthly. Issues are brought before the group in reaction to current events, such as a relicensing of Marmot Dam, applications for logging, and mining operations. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon a super-majority of 66 percent. The group has no budget.

Accomplishments and Ongoing Activities

The group has just completed its Phase I Assessment and Action Plan, which included a public involvement process. In addition, the group has planned or is in the process of completing the following activities: hiring a paid coordinator, resource monitoring, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of successfully completing the Phase I Assessment and Action Plan.

Areas of strength of this watershed initiative appear to be the adequacy of the decision-making process, well-attended and efficiently run meetings, and the adequacy of funding to meet short-term goals. Federal, state, and local agencies have been moderately helpful. Areas of potential weakness include that the current size, composition, or organizational structure of the group is believed to be inadequate.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water allocation, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s).

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Scappoose Bay Watershed Council

Focus of the Watershed Initiative

The Scappoose Bay watershed is located in northwestern Oregon. The focus of the group is on the entire basin, an area covering approximately 50,000 acres located mostly within one county. The upper watershed is dominated by private industrial forestland with some Bureau of Land Management lands, while the lower watershed is a mixture of residential, industrial, and agricultural diked farmland adjacent to the Columbia River. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is St. Helens, with a population of approximately 6,000. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, agriculture and/or ranching, and minerals and/or energy production. Many residents commute to jobs in Portland.

The Scappoose Bay Watershed Council was formed in 1998 in response to a statewide effort to empower local communities to solve problems. Establishment of the group was primarily the result of the efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality related to high temperatures and turbidity, the maintenance of fish and wildlife and/or endangered species such as the listed Steelhead and Coho, and land-use management related to agriculture and mining.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws. The group believes that the government has placed a lot of

responsibility in the lap of local councils to improve conditions, but the government support has been questionable at times. In addition, a power and resource struggle has surfaced between past federally funded groups who have been the “managers” and the new local groups seeking resources. The mission of the group is to clean up the water in the basin and increase fish populations. Specific short-term goals include: (1) doing a watershed assessment, (2) doing public outreach, and (3) striving for sustainability.

Structure and Functioning of the Watershed Initiative

The group has included members from: the US Bureau of Land Management and Natural Resources Conservation Service; the Oregon Departments of Forestry, Fish and Wildlife, and Water Resources; the Scappoose Drainage District; one or more environmental groups; one or more non-governmental organizations; local cities; private timber managers; and many teachers and citizens. Membership is open to all interested parties. The group is directed by elected officers and local volunteers. The group utilizes subcommittees, including the Assessment Committee and others. Meetings are held bi-monthly. Issues are brought before the group by members and concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$60,000 to \$110,000, a substantial increase from past years. Major providers of funding and in-kind services include state agencies in the amount of \$75,000, local agencies in the amount of \$20,000, and local business contributors in the amount of \$25,000.

Accomplishments and Ongoing Activities

The group has completed on-the-ground revegetation and instream restoration activities. In addition, the group has planned or is in the process of completing the following activities: resource monitoring, scientific research, and other educational activities such as a watershed festival. The group is most proud of its student monitoring and education programs, its fish trap and monitoring program, and its grant to conduct a watershed assessment.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring showing on-the-ground improvements. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; the drive and knowledge of the members; well-attended and efficiently run meetings; and the helpfulness of federal and state agencies. Areas of potential weakness include that some local agencies have only been slightly helpful, and the inadequacy of funding to hire paid staff.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, securing paid staff, the generation of additional technical data or knowledge about the resource,

and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) public education, (2) resource pooling, and (3) changes in resource use.

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Siuslaw Watershed Council

Focus of the Watershed Initiative

The Siuslaw watershed is located in western Oregon. The focus of the group is on the entire basin, an area covering approximately 492,000 acres spread mostly over one county. The Siuslaw River originates in the Oregon Coast Range west of the city of Eugene and winds through the Coast Range, entering the Pacific Ocean two miles west of Florence. Public lands constitute over half of the watershed's land area, with the remaining portion in private industrial or citizen ownership. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Florence, with a population of approximately 7,000. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching. The focus area has been heavily logged and fished since the late 1800s, leading to a 99 percent reduction in Coho Salmon runs. Logging activity is at an all time low due to the listing of endangered species native to the Coast Range forests.

The Siuslaw Watershed Council was formed in 1996 in response to the Oregon Plan for Salmon and Watersheds, and followed earlier efforts focused primarily on regulatory responses on agency-managed lands. Establishment of the group was primarily the result of the efforts of the local Siuslaw Soil and Water Conservation District, along with assistance from the US Forest Service, the Bureau of Land Management, the Oregon Department of Fish and Wildlife, the Oregon Department of Agriculture, and the Governor's Watershed Enhancement Board. Since its formation, the group has been mostly concerned with the maintenance of fish and wildlife and/or endangered species related to salmon habitat, and water quality related to contamination and erosion control.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem (especially long-term funding for monitoring efforts), inadequate interagency or interjurisdictional coordination, transboundary impacts on ocean fish, and the lack of local involvement in resource management. The mission/vision statement of the group is as follows: "The Siuslaw Watershed Council supports sound economic, social and environmental uses of natural and human resources in the Siuslaw River basin. The Council encourages cooperation among public and private watershed entities to promote awareness and understanding of watershed functions by adopting and implementing a total watershed approach to natural resource management and production." Specific short-term goals include: (1) obtaining stable funding for the coordinator, (2) carrying on education and outreach efforts, and (3) successfully completing current tasks. Over the longer term, the goals of the group are "(1) to provide a basin-wide framework for coordination, cooperation, and citizen involvement in improving and maintaining the health of the Siuslaw watershed, (2) to promote protection, conservation, restoration, and enhancement of fish, wildlife, forest, timberland, cropland, and water quality and quantity in the Siuslaw watershed, (3) to contribute to the social and economic stability and productivity of families and communities within the watershed by supporting and attracting resources for local employment, and (4) to promote monitoring of biological, physical, and social components of the Siuslaw watershed."

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, and Natural Resources Conservation Service; the Coos, Lower Umpqua and Siuslaw Confederate Tribes; the Oregon Department of Fish and Wildlife; the Siuslaw Soil and Water Conservation District; and one or more academics or citizens including the Siuslaw School District. Membership is open to all interested parties. The group is directed by a coordinator, funded by the Oregon Watershed Enhancement Board. The group utilizes subcommittees, including Projects, Outreach, and ad hoc committees for specific issues. The group has an office, located in the Mapleton US Forest Service facility. Meetings are held monthly. Issues are brought before the group by the coordinator, the executive board, the technical team or by interested citizens. The group utilizes a formal decision-making process that is reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the US Forest Service, Fish and Wildlife Service, Natural Resources Conservation Service, and Bureau of Land Management used for technical support and office expenses; the state Department of Fish and Wildlife and the Oregon Watershed Enhancement Board used for technical support and project coordination; the Siuslaw Soil and Water Conservation District used for administrative support; member dues; and donations from the timber industry used for council coordination.

Accomplishments and Ongoing Activities

The group has completed the following activities: on-the-ground remediation or restoration activities, conferences/workshops, scientific research related to salmonid populations, and the publication of a monthly newsletter. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, a watershed assessment, and other educational activities such as informational pamphlets for landowners. The group is most proud of shared decision-making and the general perception that diversity is welcomed, desired, and important to group success.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of state and federal agencies. Areas of potential weakness include the inadequacy of funding to pay a coordinator and for on-the-ground projects; and local agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) adequate long-term funding, (2) a high level of volunteer participation, and (3) the stabilization of government policies.

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Smith's Fork Coordinated Resource Management Program

Focus of the Watershed Initiative

The Smith's Fork watershed is located in western Wyoming. The focus of the group is on the middle basin, an area covering approximately 500,000 acres spread over two counties. The topography in the watershed includes mountains, foothills, and rangelands. In addition, the watershed includes endangered species candidates, a wilderness study area, and twenty-three grazing permittees. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Cokeville, with a population of approximately 900. The local economy is moderate in strength and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching, and mineral and/or energy production.

The Smith's Fork Coordinated Resource Management Program was formed in 1994 in response to the need for an educational program on coordinated resource management. Establishment of the group was primarily the result of the efforts of the state government, with additional help from federal and local agencies. Creation of the group followed earlier problem-solving efforts that focused mostly on litigation. Since its creation, the group has been mostly concerned with issues of livestock and wildlife management, water quality related to TMDLs and aquatic habitat for native salmonids, the maintenance of fish and wildlife and/or endangered species, general environmental degradation, and problems associated with noxious weeds.

From an "institutional" (or administrative) standpoint, the group is also concerned with ineffective management programs or laws, inadequate interagency or interjurisdictional coordination, transboundary impacts, and inadequate funding/attention being given to a natural resource problem. Specific short-term goals include: (1) developing a management plan with specific management objectives, (2) educating participants, and (3) assessing current conditions and management. Over the longer term, the goals of the group are to foster sustainable management.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Bureau of Land Management, one or more state agencies, one or more local agencies, one or more water districts/organizations, one or more environmental groups, one or more non-governmental organizations, local landowners, grazing permittees, and other citizens. Membership is open to all interested parties.

The group is directed by a coordinator and utilizes subcommittees for specific issues. Meetings are held quarterly or as necessary. Issues are brought before the group by the steering committee. The group utilizes a decision-making process that is at the discretion of the coordinator, reliant upon consensus. The group has no budget, but receives some in-kind services from the Bureau of Land Management, Wyoming Game and Fish, and the Smith's Fork Grazing Association.

Accomplishments and Ongoing Activities

The Smith's Fork Coordinated Resource Management Program has completed the following activities: the development of management plans related to animal grazing and monitoring, shared decision-making/negotiated problem-solving surrounding issues of animal management, resource monitoring, scientific research, a state Coordinated Resource Management conference, and other educational activities including tours. The group is most proud of helping to create better communication between diverse interests.

Overall, the group considers itself to be somewhat successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvement. Areas of strength of this watershed initiative appear to be the adequacy of funding to meet short-term goals, and the helpfulness of local and state agencies. Areas of potential weakness include the inadequacy of the size, composition, and organizational structure of the group, which can be attributed to poor management coordination; and inefficient or not well-attended meetings.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) commitment, (2) communication, and (3) perseverance.

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South Fork Snake River Watershed Advisory Group

Focus of the Watershed Initiative

The South Fork of the Snake River is located in eastern Idaho. The focus of the group is on the entire basin, an area spread over two counties. The population of the focus area falls within the

range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Idaho Falls, with a population of approximately 50,000. The local economy is moderate in strength and highly diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The South Fork Snake River Watershed Advisory Group was formed in 1997 in response to a desire of the people in the watershed to make management decisions. Establishment of the group was primarily the result of the efforts of local citizens, and the state and local governments. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation. From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and the lack of local involvement in resource management. The mission of the group is to work with the people on the creation of a TMDL framework and on 303 listing. Specific short-term goals include: (1) working on 303(d) listing of streams, and (2) cleaning up the watershed.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, one or more state agencies, one or more local agencies, one or more water districts/organizations, one or more environmental groups, one or more non-governmental groups, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by the people who come to meetings. The group utilizes subcommittees. Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. The group is self-funded and received no financial support from government agencies.

Accomplishments and Ongoing Activities

The group has completed shared decision-making/negotiated problem-solving and the publication of newsletters and/or brochures. In addition, the group has planned or is in the process of completing the following activities: the development of management plans, resource monitoring, scientific research on best management practices, on-the-ground remediation or restoration activities, and other educational activities. The group is most proud of forming the watershed group.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the

problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following key to success: involving the people of the watershed and using their talents.

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Southwest Basin Native Fish Watershed Advisory Group

Focus of the Watershed Initiative

The focus of the advisory group is the Middle Snake River Basin in western Idaho, an area covering approximately 12 million acres spread over ten counties. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Boise, with a population of approximately 150,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The Southwest Basin Native Fish Watershed Advisory Group was formed in 1997 in response to the implementation of Idaho's Bull Trout Conservation Plan, which was also a way to try to keep the protection of the bull trout in the state's hands. Establishment of the group was primarily the result of the efforts of Idaho Division of Environmental Quality and the Idaho Department of Fish and Game. Since its formation, the group has been mostly concerned with the maintenance of fish and wildlife and/or endangered species, such as the Bull and Redband Trout; water quality related to excess sedimentation; water supply/flow regimes related to migration barriers, conservation pools, and alternative water releases; land-use management related to roads, forest practices, grazing, urbanization, recreation and mining; and brook trout hybridization.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, inadequate interagency or interjurisdictional coordination related to the US Fish and Wildlife Services lack of participation in the effort, and transboundary impacts. Specific short-term goals include: (1) initiating the second phase of the Governor’s Bull Trout Conservation Plan, (2) completing review of the problem assessments, and (3) evaluating the new administration’s commitment to this watershed effort.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Reclamation, Idaho Department of Fish and Game, Idaho Division of Environmental Quality, Idaho Department of Lands, the Boise County Commission, one or more water districts/organizations, Idaho Rivers United, Gem State Fly Fishers, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a facilitator, funded by the state. The group utilizes subcommittees, including the Technical Advisory Group. Meetings are held monthly. Issues are brought before the group as agenda items developed by the group. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the US Forest Service in the amount of \$60,000 used for technical service, the state of Idaho in the amount of \$90,000 used for on the ground projects, the Idaho Department of Environmental Quality in the amount of \$50,000 used for administration and technical expenses, the Idaho Department of Fish and Game in the amount of \$50,000 used for administration and technical expenses, Idaho Department of Land in the amount of \$30,000 used for administration and technical expenses, and volunteers in the amount of \$110,000 used for technical service and monitoring.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans (including 13 problem assessments); shared decision-making/negotiated problem-solving for immediate recovery actions performed; resource monitoring of fish and stream conditions; on-the-ground remediation or restoration activities, which included installing fish ladders, extirpating brook trout, and retrofitting culverts; and conferences/workshops on the problem assessment development. In addition, the group has planned or is in the process of completing the following activities: the development of conservation plans, resource monitoring, scientific research on temperature stresses and genetics, on-the-ground remediation or restoration activities, and other educational activities. The group is most proud of helping the state of Idaho to understand the level of bull trout abundance and distribution in southwest Idaho.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the perceived adequacy of the decision-making process, well-attended and efficiently run meetings, the adequacy of funding to meet short-term goals, and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inability of the technical support participants to keep up with the information demands of the full group.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) respect of all parties' opinions, (2) effective facilitation, and (3) results.

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Tenmiles Lakes Basin Partnership

Focus of the Watershed Initiative

The Tenmiles Lakes watershed is located along southern coastline of Oregon. The focus of the group is on the entire basin, an area covering approximately 97 square miles spread over two counties. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Lakeside, with a population of approximately 1,600. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The Tenmiles Lakes Basin Partnership was formed in 1994 in response to attempts by a nearby city to dam two of the Tenmiles Lakes. Establishment of the group was primarily the result of the efforts of federal, state, and local government, along with a Tribe and the local citizens. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use

and/or management, and general environmental degradation. From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service; one or more Indian tribe; state agencies, including the Oregon Department of Fish and Wildlife, the Oregon Department of Environmental Quality, and the Oregon Department of Forestry; one or more local agencies; one or more environmental groups; and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator, funded by the Oregon Watershed Enhancement Board. The group utilizes subcommittees, including Budget, Projects, and others. The group has an office, located in Lakeside. Meetings are held quarterly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the Oregon Watershed Enhancement Board, and the Department of Environmental Quality.

Accomplishments and Ongoing Activities

The group has planned or is in the progress of completing the following activities: the development of management plans, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, and conferences/workshops.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and local agencies. Areas of potential weakness include that federal agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s).

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Wheeler Point Watershed Council

Focus of the Watershed Initiative

The Wheeler Point watershed is located in northeastern Oregon. The focus of the group is on the entire basin, an area spread over one county. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Fossil, with a population of approximately 600. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and agriculture and/or ranching.

The Wheeler Point Watershed Council was formed in 1997 by motivated private citizens. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes related to flows in late season, the maintenance of fish and wildlife and/or endangered species related to a native run of steelhead, land-use management, and general environmental degradation from erosion. From an "institutional" (or administrative) standpoint, the group is also concerned with the transboundary impacts of western Oregon creating laws for eastern Oregon residents. Specific short-term goals are to develop an action plan. Over the longer term, the goals of the group are to improve the overall health of the watershed and to prevent legislation on land management.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, Natural Resources Conservation Service, the Confederated Tribes of Warm Springs, and the Wheeler Soil and Water Conservation District. Membership is open to all interested parties. The group is directed by a coordinator, funded by the Oregon Watershed Enhancement Board. The group has an office, located in the Oregon State Forestry Department. Meetings are held quarterly. The group utilizes a decision-making process that is largely ad hoc and unspecified, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include the Oregon Watershed Enhancement Board in the amount of \$3,000 used for operating costs.

Accomplishments and Ongoing Activities

The group has planned or is in the progress of completing the development of management plans, resource monitoring, and on-the-ground remediation or restoration activities. The group is most proud of just getting started.

Overall, the group considers itself to be highly successful in addressing the natural resource problems of concern, as illustrated by the high level of support and participation they are receiving from the community. Areas of strength of this watershed initiative appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) participation, (2) funding sources, and (3) speedy results.

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Williams Creek Watershed Council

Focus of the Watershed Initiative

The Williams Creek watershed is located in southwestern Oregon. The focus of the Williams Creek Watershed Council is on the entire basin, an area covering approximately 52,000 acres spread over 2 counties. The watershed is in the Siskiyou Mountains and contains core Coho salmon habitat. The population of the focus area falls within the range of 1,000 to 5,000, with

the population distributed mostly in rural areas. The only town in the watershed is Williams, with a population of approximately 3,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, wildcrafting herbs, mushrooms, cedar boughs, and other cottage industries. The upslope land in the watershed is used for forestry. The valley land-use is used for agricultural and rural residential. Fifty-two percent of watershed is publicly owned, mostly by the Bureau of Land Management.

The Williams Creek Watershed Council was formed in 1996 in response to a feeling that the interests of the local citizens were not reflected by the activities of the larger Applegate Watershed Council in the area. The local citizens wanted to have their own council representing local interests. Establishment of the group was primarily the result of citizens and a non-profit organization that helped the citizen's group to achieve non-profit status. The formation of the group followed earlier problem-solving attempts involving more ad hoc citizen activism.

Since the group's formation, it has been primarily concerned with issues of water supply/flow regimes, water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation. The surface water in the watershed is over-appropriated. The group is working with landowners to gain more instream rights and to utilize conservation measures to leave more water in the streams for fish. The group is actively monitoring water quality. Some of the watershed's stream segments are on the 303(d) list. One of the group's most important foci is trying to protect populations of coho, chinook and steelhead salmon. Much of watershed has been cut over, road density is high and residential development is increasing. The group emphasizes restoration of degraded areas and protection of pristine places.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with inadequate interagency or interjurisdictional coordination between the different public land management agencies that manage land in the watershed. In addition, the group is concerned with ineffective management programs or laws. The group is trying to instill concepts of restoration and attention to the importance of aquatic resources. Specific short-term goals include: (1) completing an assessment of the watershed, (2) completing an action plan to prioritize restoration projects, and (3) increasing outreach and education to the community on watershed issues. Over the longer term, the goals of the group include educating the community on issues of watershed health, working with local stakeholders to improve aquatic conditions in the watershed, and coordinating restoration and monitoring efforts with other regional groups.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Bureau of Land Management, Fish and Wildlife Service, and Environmental Protection Agency; the Oregon Department of Forestry; the county of Josephine and the Soil and Water Conservation District; the Siskiyou Project, Klamath

Siskiyou Wildlands Center, and other watershed groups; and one or more academic or citizens groups. Membership is open to all interested parties, but the board is limited to 15 individuals.

The group is directed by a coordinator. The group has an office, located at downtown Williams in the Fire Department building. Meetings are held monthly. Issues are brought before the group by anyone as agenda items. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon majority rule. However, the group usually reaches consensus.

The estimated annual budget of the group (including the value of in-kind services) falls within the range of \$20,000 to \$75,000. This is a substantial increase from past years, attributable to having recently received a \$50,000+ grant from the Oregon Watershed Enhancement Board to conduct an assessment. Major providers of funding and in-kind services include federal agencies such as the Bureau of Land Management used for a liason from the Council and for resource assessments; state agencies such as the Oregon Department of Fish and Wildlife and the Oregon Department of Forestry used for road gates and assessment support; local agencies such as the Natural Resources Conservation Service and the Soil and Water Conservation District used for landowner incentive programs; and other agencies such as Oregon Trout used for Salmon Watch training.

Accomplishments and Ongoing Activities

The Williams Creek Watershed Council has completed the following activities: shared decision-making/negotiated problem-solving (as seen by the fact that they have written this into their bylaws), and on-the-ground remediation or restoration activities, including planting over 40,000 trees in the watershed. In addition, the group is in the process of completing the following activities: the development of management plans, which includes working on a mission statement and developing long-term objectives; resource monitoring with the Applegate River Watershed Council on several water quality monitoring projects; the publication of two direct mail brochures; other educational activities, including monthly speaker forums on watershed issues; and other activities including a watershed assessment. The group is most proud of having a well rounded and active board, getting a grant for the assessment, and working well with the agencies.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following activities to be essential to its continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource

problem(s). The group listed the following keys to success: (1) citizen participation and citizen awareness of maintaining and improving watershed health; (2) good working relationships with agencies and other groups; and (3) prioritization of projects in order of importance.

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Winchester Lake Cleanup Watershed Advisory Group

Focus of the Watershed Initiative

The Winchester Lake watershed is located in northern Idaho. The focus of the group is on the Winchester Lake, which is in the lower basin and is an area covering approximately 80 acres spread over one county. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Lewiston, with a population of approximately 25,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching.

The Winchester Lake Cleanup Watershed Advisory Group was formed in 1998 in response to dying fish in Winchester Lake and a need to clean it up. Establishment of the group was primarily the result of the efforts of local citizens, with additional assistance from federal and state agencies and a local Indian Tribe, and followed earlier problem-solving efforts of local citizens. Since its formation, the group has been mostly concerned with issues of water quality, and the maintenance of fish and wildlife and/or endangered species. From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem. The mission of the group is to cleanup Winchester Lake by 2004. Specific short-term goals include: (1) studying the Lake to prioritize efforts, and (2) obtaining funding for on the ground projects. Over the longer term, the goals of the group are to keep water quality good in the Lake.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, Natural Resources Conservation Service, and the US Geological Survey; one Indian Tribe; and one or more local agencies (including two local mayors). Membership is open to all interested parties. The group is directed by a coordinator and assisted by a facilitator. Meetings are held monthly. Issues are brought before the group through surveys and by concerned parties. The group utilizes a formal decision-making process that is at the discretion of the coordinator, reliant upon majority rule. The group has no budget.

Accomplishments and Ongoing Activities

The group has completed the following activities: shared decision-making/negotiated problem-solving, resource monitoring, and the publication of newsletters and/or brochures. In addition, the group has planned or is in the process of completing the following activities: the development of management plans, scientific research, legal or policy research, on-the-ground remediation or restoration activities, and conferences/workshops.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements, and the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals.

The group considers a substantial modification of land-use practices to be essential to their continued problem-solving effort. The group listed the following key to success: assistance from federal, state, and county agencies.

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Winchuck Watershed Council

Focus of the Watershed Initiative

The Winchuck watershed is located in southwestern Oregon. The focus of the Winchuck Watershed Council is on the lower eight miles of the basin, an area covering approximately 5,000 acres spread over 1 county. The majority of the watershed (75 percent) is federally owned. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Brookings, with a population of approximately 5,000. The local economy is weak and not diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, and fishing.

The Winchuck Watershed Council was formed in 1994 as a result of the receipt of state dollars for projects. Establishment of the group was primarily the result of state legislation, and followed earlier problem-solving attempts involving a sportsman's club formed to manage fish hatch boxes to help restock the river. Since the group's formation, it has been primarily concerned with issues of general environmental degradation that affect land ownership. From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with transboundary impacts of decisions made out of the area that restrict fishing and land-use. The mission/vision statement of the group is "to improve the overall health of the river." Specific short-term goals include: (1) stabilizing the stream bank, and (2) providing more fishing opportunities.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, and the Natural Resource Conservation Service; the state fish and wildlife departments; a fisherman's group; and landowners. Membership is open to all interested parties. The group does not have a coordinator or facilitator and does not utilize subcommittees. Meetings are held as needed. Issues are brought before the group by any interested party. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon consensus.

The group has no budget. Major providers of in-kind services include the federal Natural Resources Conservation Service used for funding of fences and trees, and the local Soil Conservation District used for supervision of work.

Accomplishments and Ongoing Activities

The Winchuck Watershed Council has completed the development of management plans. In addition, the group is in the progress of resource monitoring and on-the-ground remediation or restoration activities, including tree planting and fencing off stream water from stock animals. The group is most proud of fencing cattle out of the lower reach and off stream watering.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies. The group considers the following actions to be essential to its continued problem-solving effort: changes in federal or state law, and on-the-ground modification of the physical landscape. The group listed the following keys to success: (1) local decision-making, (2) funding with the ability to shift dollars between projects, and (3) support from local people and agency representatives.

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Yakima River Basin Watershed Planning

Focus of the Watershed Initiative

The Yakima watershed is located in central Washington. The focus of the Yakima River Basin group is on the entire basin, an area covering approximately four million acres, spread over three counties. The watershed runs from the top of the Cascade Range southeast to the confluence with the Columbia River in central Washington. The population of the focus area falls within the range of 250,000 to 1 million, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Yakima, with a population of approximately 60,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, and energy and mining. The watershed includes federal forests, recreation areas, manmade storage reservoirs, agriculture, rangeland, federal land, tribal lands, twenty five cities, three counties, and state lands. In addition, there is a largescale processing and distribution of agricultural products from the basin.

The Yakima River Basin Watershed Planning organization was formed in 1994 in response to dry water years when there was no water for the economy and for fish. Establishment of the group was primarily the result of local government and citizen/activist activity. The group was organized by the Tri-County Water Resource Agency, whose membership includes representatives from each of the three counties, two cities, and three water purveyors (irrigation districts). Creation of the group followed earlier problem-solving attempts involving litigation.

Since the group's formation, it has primarily focused on issues of water supply/flow regimes related to the need to increase water supplies, water quality related to the need to have clean return flows to the Yakima River, the maintenance of fish and wildlife and/or endangered species, and the improvement in habitat protection.

From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the inadequate interagency or interjurisdictional coordination. Despite the presence of a state law calling for locally driven watershed planning, some parties feel that state agencies are attempting to drive the process without involving local individuals. The mission/vision statement of the group is to "assure responsible management of water resources today to protect and preserve water for the future." Specific short-term goals include: (1) developing a plan, (2) implementing programs to improve salmon recovery, and (3) providing more cool, clean water for people and fish. Over the longer term, the goals of the group include providing consistent and adequate water to meet all economic, cultural, and environmental needs in the Yakima River Basin.

Structure and Functioning of the Watershed Initiative

The Planning Unit of the group includes members from: one or more local governments; one or more water and port districts; one or more non-governmental organization; one or more academic or citizens groups; state agencies, including the Departments of Ecology, Fish and Wildlife, and Transportation; federal agencies, including the US Forest Service, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Natural Resource Conservation Service, Environmental Protection Agency, U.S. Geological Survey, National Marine Fisheries Service, and the Bonneville Power Administration; and other participants, including water rights holders. Membership is open to all interested parties. The Planning Unit was appointed as prescribed in the Washington State Watershed Planning Act.

A paid coordinator and consulting services are provided to assist the Planning Unit in developing an assessment of the problems in the watershed and then to develop a watershed plan to assign responsibilities to correct those deficiencies. The Planning Unit utilizes subcommittees, including Water Quality, Quantity, Habitat, and Groundwater. A Steering Committee coordinates activities and prepares materials for the Planning Unit meetings. Planning Unit meetings are held monthly. Planning Unit meetings are conducted under Robert's Rules of Order for all purposes except the adoption of Plan elements, which are adopted or rejected by consensus. The group has an office, located in Yakima.

The estimated annual budget of the group (including the value of in-kind services) exceeds \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the Natural Resources Conservation Service, Corps of Engineers, state agencies and local governments. The Washington Department of Ecology granted \$670,000, as provided for in the Watershed Planning Act, to be used for watershed planning. Local counties, cities, and irrigation districts also provide in-kind and technical assistance.

Accomplishments and Ongoing Activities

The Yakima River Basin is in the process of completing the following activities: the development of management plans, which includes starting the assessment phase for water quantity and quality, habitat, and groundwater; shared decision-making/negotiated problem-solving, which includes working together to develop a comfortable process; legal or policy research; on-the-ground remediation or restoration activities; and the publication of newsletters about watershed planning which are being sent to all 161 planning members and many others requesting to be included on the mailing list. In addition, the group has the following activities planned: resource monitoring that will be included in the assessment phase and beyond; conferences/workshops; and other educational activities. The group is most proud of the interest of all participants to improve the management of natural resources in the watershed.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data for water quality and quantity demonstrating on-the-ground improvements. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group as shown by the assertion that the organization can and will reorganize itself if necessary to accomplish its goals; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local and federal agencies. Areas of potential weakness include that state agencies, federal agencies, and the Yakima Indian Nation have continued to work outside the local planning process in areas concerning water quantity and habitat protection.

The group considers the following actions to be essential to its continued problem-solving effort: a modification of land-use practices, a modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape including additional stored water, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) trust among interest groups; (2) commitment to implementation of the plan; and (3) leaving prejudices at the door.

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Yamhill Basin Council

Focus of the Watershed Initiative

The Yamhill River and Chehalem watershed are located in northwestern Oregon. The focus of the group is on the entire region, an area covering approximately 800 square miles spread over four or more counties. These watersheds are Coast Range tributaries of the Willamette River. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is McMinnville, with a population of approximately 25,000. The local economy is strong and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching. There is very diverse agricultural production in the watershed.

The Yamhill Basin Council was formed in 1995 in response to concerns about limited drinking water supplies in many small communities and the listing of many streams in the area as water quality limited. Establishment of the group was primarily the result of the efforts of local Yamhill and Polk Counties, along with the Yamhill Soil and Water Conservation District. Since its formation, the group has been mostly concerned with issues of water quality related to bacteria, temperature, flow modification, dissolved oxygen, toxics, and chlorophyll; water supply/flow regimes related to municipal water supplies for a growing region; the maintenance of fish and wildlife and/or endangered species such as winter steelhead and cutthroat trout; and land-use management issues.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, and coordinating data collection. The mission/vision statement of the group outlines the following principles and goals: "Work to address natural resource management issues in the Yamhill river Basin and foster cooperation and coordination among those with a stake in the basin's future. Achieve a balance between economic development and environmental protection that responds to local needs. Encourage wise watershed stewardship in advance of resource degradation and regulatory action. Develop solutions in response to local needs while considering local impacts." Specific short-term goals include: (1) identifying on-the-ground restoration projects, (2) improving knowledge about watershed conditions, and (3) raising awareness about water quality/habitat issues.

Structure and Functioning of the Watershed Initiative

The group includes members from the Bureau of Land Management; the Confederate Indian Tribes of Grand Ronde; Yamhill and Polk Counties; the cities of McMinnville, Newberg and Dayton; the Yamhill Soil and Water Conservation District; the Perrydale Water District; the Friends of Yamhill County; the Native Plant Society; the Small Woodlands Association; the Water Improvement District; the local Chamber of Commerce; other citizens and activists; and representatives of the agriculture and forestry industries. Membership is limited to 24

“official” members representing stakeholder groups, although other citizens are not limited in project participation.

The group is directed by a coordinator, who is funded by state grants, local government, and local contributions. The group utilizes subcommittees, including Fish and Wildlife, Roadside Water Quality, Water Supply, Watershed Assessment, and Temperature Monitoring. The group has an office, located in the Yamhill Soil and Water Conservation District offices. Meetings are held monthly. Issues are brought before the group by council members and the community through the coordinator, or issues are just brought up at the meetings. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. The decision-making process is regularly reviewed and updated as necessary.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey), an increase from past years. Major providers of funding and in-kind services include the Natural Resources Conservation Service and the Bureau of Land Management in the amount of \$7,000 used for general support; the Oregon Watershed Enhancement Board in the amount of \$50,000 used for the coordinator salary and projects; and a variety of local agencies including the counties, cities, Soil and Water Conservation District, and local citizens in the amount of \$20,000 used for coordinator’s salary and projects.

Accomplishments and Ongoing Activities

The group has completed temperature monitoring and the publication of a quarterly newsletters. In addition, the group has planned or is in the process of completing the following activities: the development of management plans for recreation and water supply, shared decision-making/negotiated problem-solving for road issues, legal or policy research, on-the-ground remediation or restoration activities, and conferences/workshops. The group is most proud of improving relations and coordination between diverse interests.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) involving key stakeholders, and (2) building trust.

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Young's Bay Watershed Council

Focus of the Watershed Initiative

The Young's Bay watershed is located in northwest Oregon. The focus of the Young's Bay Watershed Council is on the entire basin, an area covering approximately 191 square miles spread over 1 county. The focus area consists of three small river systems, which are tributaries to the Columbia River at Young's Bay. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest nearby city is Astoria, with a population of approximately 10,000. The local economy is moderate in strength and not diversified, featuring natural resource jobs mostly in the sectors of forestry and commercial fishing. Over two-thirds of the land in the focus area is state and private industrial forests, with the remainder in lowland agriculture, diked and tide gated salmonid habitat. The watershed is impacted by the threatened and endangered listing of several salmonids, as well as the Oregon Plan for Salmon and Watersheds.

The Young's Bay Watershed Council was formed in 1997 in response to the Oregon Watershed Enhancement Board and the Oregon Plan for Salmon and Watersheds. Establishment of the group was primarily the result of state agencies, local governments, state legislature, citizen/activist groups, and followed earlier problem-solving attempts involving the Oregon Department of Fish and Wildlife and the Oregon Forest Practices Act, as well as other progressive programs of the state natural resources agencies. Since its creation, the group has been mostly concerned with issues of: water supply/flow regimes as it relates to small municipalities drawing down salmon streams creating low-flow situations; water quality matters such as dissolved oxygen, turbidity, temperature, aquatic plants and river segment listings under the Clean Water Act 303(d); endangered species of steelhead and salmon listed in the Columbia Basin; land-use and/or management issues related to forestry, agriculture and all related sediment and riparian health issues; and general environmental degradation related to blocked fish passage, salmon hatchery problems, and Columbia River dredging.

From an "institutional" (or administrative) standpoint, the group is concerned with problems of transboundary impacts associated with Columbia River dredging by the Corps of Engineers and upstream ports like Portland, OR. The group is also concerned with inadequate

funding/attention being given to do Endangered Species Act listings and the subsequent work necessary to repair, mitigate and resolve habitat and watershed health issues. Additionally, the group is concerned about the lack of local involvement in resource management because the large private forest holdings impact watershed lands downstream. Finally, the group thinks there is inadequate interagency or interjurisdictional coordination.

Specific short-term goals include: (1) for 1999-2000, a contracted/complete assessment of the watershed using Oregon Watershed Enhancement Board protocols; (2) for 2000-2001, developing an action plan and project plans to improve watershed health; and (3) for 2001 and beyond, plan, fund and complete projects to improve watershed health and fish habitat.

Structure and Functioning of the Watershed Initiative

The group includes members from: the National Park Service and Natural Resource Conservation Service, the Oregon Departments of Forestry and Fish and Wildlife, Clatsop Soil and Water Conservation District, City of Astoria, one or more water districts/organizations, representatives of the Astoria High School and Clatsop Community College, and other participants such as local landowners. Membership is open to all interested parties.

The group is directed by a coordinator funded by the Oregon Watershed Enhancement Board and agency matching money. The group utilizes subcommittees, including Data Collection, Grant Writing, and Monitoring. Meetings are held monthly. Issues are brought before the group by members, partner agencies and issues identified by Oregon Watershed Enhancement Board and other state agencies. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) falls within the range of \$20,000 to \$75,000. This is an increase from past years, due to recently securing a \$66,000 grant to link its assessment coordinator with two other councils. Major providers of funding and in-kind services include the National Park Service in the amount of \$8,000 used for general support, computers, Geographic Information System (GIS) support, and staff costs; state agencies such as the Oregon Department of Forestry, Oregon Department of Fish and Wildlife, Governors Watershed Enhancement Board, and the Oregon Department of Environmental Quality in the amount of \$48,447 used for salary, aerial photos, and technical assistance; local agencies such as the Oregon State University Extension and Clatsop Soil and Water Conservation District in the amount of \$1,650 used for office and administrative costs and training; and other agencies such as Portland State University and Clatsop Community College in the amount of \$3,900 used for student data-gathering and GIS system setup.

Accomplishments and Ongoing Activities

The Young's Bay Watershed Council has completed the following activities: on-the-ground remediation or restoration activities such as tree planting, and large wood and debris placement; conferences/workshops in conjunction with the Oregon State University extension watershed

steward curriculum; and other educational activities such as monitoring workshops. In addition, the group has the following activities planned or in progress: the publication of newsletters and/or brochures; the development of management plans after an assessment completes an action planning process; shared decision-making/negotiated problem-solving consistent with all aspects of Young's Bay Watershed Council; resource monitoring related to water quality and fish presence; and scientific research. The group is most proud of receiving grant funding and finding an assessment coordinator to begin future planning.

Overall, the group considers itself to be relatively unsuccessful up to this point in addressing the natural resource problems of concern, mostly because the group has just started. But over the long-term, the group is very confident of success. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; and the helpfulness of state agencies and the National Park Service. Areas of potential weakness include the perceived inadequacy of decision-making arrangements; inadequate stakeholder representation; the inadequacy of funding to meet short-term goals because the group needs money for sampling water quality; and the unhelpfulness of local governments and the Corp of Engineers.

The group considers the following actions to be essential to its continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) more funding for coordinator support and projects, (2) better coordination of federal and state agencies, and (3) a realization by the general public of the benefits of a healthy watershed to all aspects of life.

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Chapter 9

Selected Watershed Initiatives in the Great Basin Region



Source: Hydrologic Unit Maps of the United States, 1928, 1980. Orig. Cartography by Jiri Freuden, July 1935. Updated by CU Cartographic Lab/March 2001.

groups of the Great Basin do not have the same level of funding and inter-group coordination found in California or the Northwest. They typically reflect the rural values and interests characteristic of the region, and are often administered out of the local conservation district offices. As population center continue to rapidly grow in the region, however, groups are emerging to address a greater diversity of concerns.

The Great Basin contains vast areas of sparsely populated desert lands. Lacking an ocean drainage, the Great Basin is a hydrologic “sink” with streams terminating in lakes and wetlands. Water resources are scarce in most areas, and the watersheds themselves tend to be large, dispersed drainages covering hundreds of thousands of highly arid acres. These geographic characteristics are reflected in the relatively small number of active watershed initiatives. Most efforts are concentrated in the farmlands of western Utah and the eastern foothills of the Sierra Nevadas in western Nevada.

Many of the watershed initiatives of the Great Basin are concerned with water quality impacts caused by mining and agriculture—the primary historical uses of land in the region—and issues of water supply for irrigation. Lacking the highly developed state programs found in other regions of the West, the

Jordan River Watershed Council

Focus of the Watershed Initiative

The Jordan River watershed is located in north-central Utah. The focus of the group is on the entire basin, an area covering approximately 480,000 acres spread over one county. The population of the focus area is approximately 1,000,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Salt Lake City, with a population of approximately 250,000. The local economy is strong and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs. There is a significant influence from the Mormon communities in the area.

The Jordan River Watershed Council was formed in 1993 in response to concerns about poor coordination and communication regarding the management of the watershed. Establishment of the group was primarily the result of the efforts of local government. Since its formation, the group has been mostly concerned with wetland conservation, water quality issues related to impaired uses, water supply/flow regimes, land-use management issues related to the development of sensitive areas, and general environmental degradation related to hydrologic modification of streams.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, the lack of local involvement in resource management, and ineffective management programs or laws. Specific short-term goals include: (1) identifying the nature and extent of the environmental problems, (2) formulating and implementing enhancement programs, and (3) educating the public about impacts and solutions.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Natural Resources Conservation Service, Environmental Protection Agency, and the US Geological Survey; six state agencies; fifteen local agencies; one or more water districts/organizations; and one or more environmental groups (non-voting). Membership is limited to government entities only, although non-voting members can attend meetings and stakeholder subcommittees are being used.

The group is directed by a coordinator and facilitator, both funded by Salt Lake County. The group utilizes subcommittees, including Riparian, Abandoned Mine, Stormwater, and Lake. The group has an office. Meetings are held monthly. Issues are brought before the group through the vision statement, current projects, and requests. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 and \$75,000. Major providers of funding and in-kind services include the local Salt

Lake County Public Works Department in the amount of \$60,000 used for water quality, flood control, and restoration work; all other participants combined contribute approximately \$25,000 as in-kind services.

Accomplishments and Ongoing Activities

The group has completed or is in the progress of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, the publication of newsletters and/or brochures, and conferences/workshops. The group is most proud of its restoration projects at Decker Lake, on the Jordan River, and in Mill Creek, and of its abandoned mine treatment assessment in Alta.

Overall, the group considers itself to be relatively successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; the well-attended and efficiently run meetings; the adequacy of the funding to meet short-term goals; and the helpfulness of local, state, and federal agencies. Approximately \$10 million will be spent on Jordan River restoration in the next 3-4 years.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape and habitat, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s).

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Otter Creek Steering Committee

Focus of the Watershed Initiative

The Otter Creek watershed is located in north-central Utah. The focus of the group is on the entire basin, an area covering approximately 240,000 acres spread over one county. The

watershed is 39 miles long and includes mountains, valleys, and plateaus, with elevations ranging from 6,200 feet to 11,600 feet. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Koosharem, with a population of approximately 300. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching.

The Otter Creek Steering Committee was formed in 1990 in response to concerns about water quality impairments. Establishment of the group was primarily the result of the efforts of the federal government, with additional assistance from state and local agencies. Since its formation, the group has been mostly concerned with issues of water quality, water supply/flow regimes, stream bank degradation, and the loss of riparian habitat. From an "institutional" (or administrative) standpoint, the group is also concerned with the inadequate funding/attention being given to a natural resource problem. Specific short-term goals include: (1) restoring stream banks, (2) improving rangeland, and (3) improving riparian habitat.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, Corps of Engineers, Natural Resources Conservation Service, Environmental Protection Agency, one or more Indian tribes, the Utah Department of Environmental Quality, the Utah Department of Agriculture and Forestry, and one or more local agency. Membership is open to all interested parties. The group is directed by a coordinator, funded by the Natural Resources Conservation Service. The group has an office, located in Richfield, UT. Meetings are held quarterly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process that is at the discretion of the coordinator, reliant upon consensus.

The group has no budget. Major providers of in-kind services include the Environmental Protection Agency's 319 program and the Natural Resources Conservation Service in the amount of \$500,000.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, shared decision-making/negotiated problem-solving efforts, resource monitoring, scientific research, on-the-ground remediation or restoration activities, the publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of its coordinated resource management plan.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas

of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; the well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal and state agencies. Areas of potential weakness include that local agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification in water allocation, voluntary behavioral and/or ideological changes by local resource users and groups, and on-the-ground modification of the physical landscape. The group listed the following keys to success: (1) rangeland improvement, (2) riparian enhancement, and (3) streambank stabilization.

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Steamboat Creek Watershed Program

Focus of the Watershed Initiative

The Steamboat Creek watershed is located in western Nevada. The focus of the group is on the entire basin, an area covering 17.5 miles of river spread over one county. Steamboat Creek is considered the major nonpoint source of pollution to the Truckee River, contributing excess sediment, nitrogen, boron, arsenic, phosphorus, and trace metals attributable to old mining impacts and geothermal activity. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Reno, with a population of approximately 162,000. The local economy is moderate in strength and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Steamboat Creek Watershed Program was formed in 1995 in response to pollution from old mining sources and agriculture. In addition, a sewage treatment plant at the end of the Creek needed to meet Clean Water Act discharge requirements. Establishment of the group was primarily the result of the efforts of the local Washoe-Storey Conservation District and the Nevada Division of Environmental Protection. Since its formation, the group has been mostly concerned with issues of water quality; water supply/flow regimes related to the demands of the fast growing urban areas; the maintenance of fish and wildlife and/or endangered species, since

currently only the tributaries to the creek can sustain fish populations; and land-use management issues related to agricultural practices that contribute to phosphorus loading.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, the lack of local knowledge of the need for riparian buffers, and ineffective management programs or laws pertaining to stormwater and construction regulations. The mission/vision statement of the group is: “The Steamboat Creek Restoration Project is a community-wide, cooperative effort to restore, enhance and preserve the Steamboat Creek watershed.” Specific short-term goals include: (1) getting local governments to adopt the Steamboat Creek Restoration Plan, (2) hiring a Watershed Coordinator to implement restoration projects, and (3) developing a Geographic Information System to integrate data.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Fish and Wildlife Service, Corps of Engineers, Environmental Protection Agency, Natural Resources Conservation Service, the Pyramid Lake Paiute Tribe, the Nevada Division of Environmental Protection, the Washoe-Storey Conservation District, Washoe County Parks Department, two citizen advisory boards, and Washoe County Water Resources. Membership is open to all interested parties. The group is directed by a coordinator and facilitator, both of whom are funded through an Environmental Protection Agency section 319 grant. The group utilizes subcommittees and has an office, located at the Washoe-Storey Conservation District office in Reno. Meetings are held monthly. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). In past years, typical budgets have been different because the group is now receiving implementation funding as well as mitigation funding for restoration. Major providers of funding and in-kind services include the Natural Resources Conservation Service and the University of Nevada Reno Cooperative Extension Service used for technical review, the Nevada Department of Environmental Protection in the amount of \$120,000 through a Clean Water Act grant used for administration and implementation, and the Washoe-Storey Conservation District in the amount of \$30,000 used for technical review.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of the Steamboat Creek Restoration Master Plan, publication of newsletters and/or brochures, and other educational activities including presentations given to various entities. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, and on-the-ground remediation or restoration activities. The group is most proud of completing the

Steamboat Creek Restoration Master Plan and having developed partnerships and interest among developers, engineers, and others throughout the community.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the helpfulness of local, state and federal agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of additional technical data or knowledge about the resource. The group listed the following keys to success: (1) consistent funding, and (2) voluntary cooperation and support.

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Upper Carson River Management Group

Focus of the Watershed Initiative

The Upper Carson River is located in western Nevada. The primary focus of the group is on two counties in the upper basin, but the group is also concerned with the remainder of the basin. The watershed encompasses an area of almost 1,000 square miles. The population of the focus area falls within the range of 100,000 to 250,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Carson City, with a population of approximately 51,000. The local economy is moderate in strength and moderately diversified, with a significant gaming industry. There is not a significant percentage of the region's population employed in natural resource jobs.

The Upper Carson River Management Group was formed in 1994 in response to a variety of management problems. Establishment of the group was primarily the result of the efforts of local conservation districts, along with assistance from state and federal agencies, the Washoe Tribe, citizens/activists, and agricultural and industry interests. Since its formation, the group has been mostly concerned with issues of land-use management as it relates to managing ranching, open space, and urbanization. In addition, the group is also concerned with water quality associated with old mines in the watershed and a waste management facility; water supply/flow regimes, particularly related to extreme events; the maintenance of fish and wildlife and/or endangered species; and general environmental degradation related to fire, erosion, and the loss of plants and wildlife.

From an “institutional” (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem, inadequate interagency or interjurisdictional coordination, and the lack of local involvement in resource management. The mission/vision statement of the group is: “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 ecosystem. The system will provide abundant agricultural products, clean water, healthy living conditions, wildlife, recreation and planned urbanization that encourages the safe natural capture, storage, release and use of the water in the watershed.” Specific short-term goals include: (1) obtaining a regional Corp of Engineers 404 permit to address Carson River erosion problems, (2) developing a watershed education program, and (3) developing a regional approach to Carson River system stabilization. Over the longer term, the goals of the group are “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.”

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Natural Resource Conservation Service, Environmental Protection Agency, and the US Geological Service; the Washoe Tribe; one or more state agencies; one or more local agencies including the Douglas County, Carson City, Alpine, and Carson Valley Conservation Districts; and one or more water districts/organizations. Membership is open to all interested parties. The group is directed by a coordinator paid through a Clean Water Act 319 grant. The group has an office, located in the Gardnerville Natural Resources Conservation District office. Meetings are held approximately monthly. Issues are brought before the group at the meetings either by concerned participants or by the coordinator. The group uses a decision-making process that is at the discretion of the coordinator, generally reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey), an increase from past years. Major providers of

funding and in-kind services include local agencies such as the Carson Valley Conservation District used for administrative support.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, the prioritization of issues, on-the-ground remediation or restoration activities, publication of semi-annual newsletters in conjunction with a conservation district, planning a conservation workshop with the Carson Valley Conservation District, and various other educational activities. The group is most proud of completing the management plan.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the perceived adequacy of the decision-making process; the adequacy of the size and organizational structure of the group; and the helpfulness of local, state and federal agencies. Areas of potential weakness include poor meeting attendance and structure, and the inadequacy of funding to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, the modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following key to success: (1) participation of local citizens, landowners, and agencies; (2) funding; and (3) education.

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Weber County River Keeper Program

Focus of the Watershed Initiative

Weber County is located in north-central Utah. The focus of the River Keeper is on the entire region, an area covering approximately 351,000 acres. There are two primary rivers in the county, along with reservoirs and streams. The watershed in the county is part of the Great Basin and receives between 12-14 inches of precipitation annually. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Ogden, with a population of approximately 70,000. The local economy is moderate in strength and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Weber County River Keeper Program was formed in 1995 in response to concerns about pollution and river education needs, along with the need to monitor and advocate for river health. Establishment of the position was primarily the result of the efforts of local government. One person oversees the entire program, in consultation with appropriate governmental and private interests. Since the creation of the position, the River Keeper has been primarily concerned with issues of water quality, water supply/flow regimes, the maintenance of fish and wildlife and/or endangered species, land-use management, and general environmental degradation from pollution sources.

From an "institutional" (or administrative) standpoint, the River Keeper is also concerned with transboundary impacts, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws. Specific short-term goals are focused on education. Over the longer term, the goal of the River Keeper is to help inform the public about the choices that will be necessary to preserve the watershed for future generations.

Structure and Functioning of the Watershed Initiative

The River Keeper works with the following organizations: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Environmental Protection Agency, one or more state agencies, one or more local agencies, one or more water districts/organizations, one or more environmental groups, and one or more academics or citizens. The River Keeper is directed by a Citizen Advisory Council. The River Keeper has an office, located at Weber Center. Meetings are held as necessary. Issues are brought before the River Keeper by concerned parties.

The estimated annual budget of the River Keeper (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include federal agencies and local agencies, including the County, used primarily for salary and transportation.

Accomplishments and Ongoing Activities

The River Keeper has planned or is in the process of completing the following activities: resource monitoring, scientific research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, and other educational activities including visiting every school within the Ogden/Weber County School Districts and being involved with a scientific multi-faceted engineered wetland in cooperation with three Universities and others. The River Keeper is most proud of coordinating 1,431 volunteer cleanup hours last year.

Overall, the River Keeper Program considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the River Keeper believes the problem is being solved. Areas of strength of this watershed initiative appear to be the meetings are well-attended and efficiently run, the funding is adequate to meet short-term goals, and state and local agencies have been very helpful. Areas of potential weakness include that the federal agencies have not been helpful.

The River Keeper considers the following actions to be essential to its continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The River Keeper listed the following keys to success: (1) education, (2) wetland proliferation, and (3) stormwater control.

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urban focus, addressing issues of water quality, riparian degradation, and municipal drinking water supply. Out on the plains, the focus is primarily on agricultural issues like irrigation supply, nutrient and sediment loading, and livestock waste.

Bad River Water Quality Project

Focus of the Watershed Initiative

The Bad River watershed is located in central South Dakota. The watershed is about 60 percent rangeland and 40 percent cropland, with highly erodible cropland and fragile clay rangeland predominant. The area is a popular for recreation and sport fishing. The focus of the Bad River Water Quality Project is on the lower basin, an area covering approximately 700,000 acres contained within one county. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population found mostly in towns/cities. The largest city in the region is Fort Pierre, South Dakota, with a population of approximately 1,950. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of agriculture and/or ranching.

The Bad River Water Quality Project was formed in 1989 primarily in response to high levels of sedimentation from erosion entering Lake Sharp (a Missouri River Impoundment), creating local flooding and reducing power generation from Oahe Dam. The group is concerned mainly with issues of water quality, fish and wildlife maintenance, land-use management, and general environmental degradation. Sediments have adversely affected water quality, which in turn has had an impact on the area's sport fishing and tourism assets. Government land-use regulation and control is a concern to the group, as is loss of riparian areas due to the effects of grazing and other land-use practices.

Establishment of the group was primarily the result of efforts by the Stanley County Conservation District, with assistance also provided by the U.S. Natural Resources Conservation Service, and the South Dakota Department of Environment and Natural Resources. The establishment of the group followed earlier problem-solving attempts involving voluntary, non-coordinated, non-targeted and non-holistic land treatment activities. From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with the limited scope of land treatments and a need for developing awareness and concern throughout the entire watershed.

The group has no formal mission statement, but specific short-term goals of the group include: (1) developing public awareness of the problem and the need for improvement, (2) developing an increased landowner/operator awareness of increased land stewardship, and (3) controlling sedimentation through land treatment. Over the longer term, a primary goal of the group is to reduce sediment from erosion by 40 percent.

Structure and Functioning of the Watershed Initiative

The group includes members or participants from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Corps of Engineers, Natural Resource Conservation Service, Environmental Protection Agency, U.S. Geological Survey, and US Farm Service Agency; one or more Indian tribes; one or more state natural resource agencies; one or more local governments; one or more water districts/organizations; non-governmental organizations, including Pheasants Forever and High Plains Wildlife (a sportsmen's organization); and participating landowners/operators. Membership in the group is limited to financial and in-kind contributors. The group is directed by a coordinator who is funded by the Environmental Protection Agency's 319 program and Conservation District funds. The group has an office located at Fort Pierre, South Dakota. Meetings are held monthly. Issues are brought before the group by staff reports, an open public forum, and by word-of-mouth to supervisors participating in meetings. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, relying primarily upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include several federal agencies, state agencies, local government, and landowners. U.S. Fish and Wildlife contributes funds, totalling 2 percent of the group's budget, which are used for ponds for wildlife uses and sediment control. The Environmental Protection Agency provides 319 administration funds representing 20 percent of the budget, and the Natural Resources Conservation Service contributes land treatment planning and financial assistance representing 30 percent of the group's budget. The South Dakota Department of Environment and Natural Resources provides funds used for land treatment amounting to 10 percent of the budget. At the local level, the County Commission and the Conservation District provide leadership and funding representing 8 percent of the budget combined, and individual landowners provide valuable in-kind services estimated at 30 percent of the group's total budget.

Accomplishments and Ongoing Activities

The Bad River Water Quality Project is involved with several activities and projects currently planned or in progress, including: land management and treatment with landowners/operators to achieve erosion reduction; shared decision-making and negotiated problem-solving; resource monitoring for paired watershed water quality and land cover studies; on-the-ground remediation or restoration activities including riparian revegetation, farmstead and feedlot windbreaks, and erosion control structures; publication of project brochures; and a video presentation. In addition, the group has successfully completed an Environmental Protection Agency Regional Conference presentation as well as state and local conference presentations, and has ongoing public meetings and tours. Among its accomplishments, the group is most proud of achieving the reduction of sediment from one tributary from 80.7 tons/acre-foot of run-off at the beginning of the project to 10.2 tons/acre-foot of run-off five years later. The group is also proud of its 90 percent landowner participation in the watershed program.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Most participants believe the problem is being solved.

Areas of strength of this watershed initiative appear to be the size and composition of the group, the adequacy of decision-making arrangements, the adequacy of funding to meet short term goals, well-attended and efficiently run meetings, and the helpfulness of local, state, and federal agencies/government. Areas identified as essential to the continued success of the group include: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and generation of increased public awareness of the resource or resource problem(s).

The group listed the following keys to success: (1) intensive coordination and communications with project landowner participants, (2) education to gain support of local governmental agencies, and (3) going the extra step to work cooperatively with all state and federal agencies involved.

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Big Dry Creek Watershed Association

Focus of the Watershed Initiative

The Big Dry Creek Watershed is located in north-central Colorado. The focus of the group is on the entire basin, an area covering approximately 70,600 acres spread over four counties. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Westminster, with a population of approximately 99,000. The local economy is strong and highly diversified. A portion of the region's population is employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching. Approximately 30 percent of the watershed land is agricultural. The area is undergoing rapid growth and is in a transition from agricultural to mixed uses.

The Big Dry Creek Watershed Association was formed in 1997 in response to a proposed change in the stream standard for ammonia that had the potential to impact wastewater dischargers. Establishment of the group was the result of a joint effort between the US Department of Energy at Rocky Flats and local governments in Broomfield, Westminster, and Northglenn, working under a grant from the Environmental Protection Agency. Since its formation, the group has been mostly concerned with water quality issues related to wastewater discharges and nonpoint source pollution, flow regime issues related to stormwater impacts, the health of the aquatic community, and general environmental degradation related to erosion and sedimentation.

From an “institutional” (or administrative) standpoint, the group would like to ensure adequate enforcement of the existing erosion/sediment control and stormwater quantity and quality control ordinances. The mission/vision statement of the group is “To develop a sound scientific understanding of water quality flow, aquatic life and habitat conditions in the Big Dry Creek watershed for the purposes of (1) environmentally responsible decision-making with regard to land and stream uses, and (2) identifying measures to improve and protect the stream.” Specific short-term goals include: (1) continuing instream water quality flow and biological monitoring, (2) analyzing collected data, and (3) determining organizational structure, which could include non-profit status.

Structure and Functioning of the Watershed Initiative

The group includes members from: the Natural Resources Conservation Service; Environmental Protection Agency; US Department of Energy; the Colorado Water Quality Control Division; the Colorado Division of Wildlife; the local governments of Westminster, Broomfield, and Northglenn; one water district; and the Colorado State University Cooperative Extension service. Membership is open to all interested parties. The group is directed by a steering committee and a coordinator, funded by an Environmental Protection Agency grant for the last three years. The group does not utilize formal subcommittees, but forms task groups as needed. Meetings are held monthly to bi-monthly. Issues are brought before the group by group discussion during the meetings or through phone, email, or other correspondence. The group utilizes a decision-making process that is largely ad hoc and unspecified, reliant upon consensus among financially contributing members.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey), which includes the monthly instream monitoring program costs. The receipt of two Environmental Protection Agency Regional Geographic Initiative grants and a 319 grant have produced a significant budget increase over the last three years. Major providers of funding and in-kind services include: the Environmental Protection Agency and the Colorado Water Quality Control Commission in the form of a 319 grant used for funding the watershed coordinator, publicity, stakeholder development, biological sampling and data analysis; the Department of Energy used for biological sampling, video production and miscellaneous monitoring; the Natural Resources Conservation Service used for educational materials and other resources; and the cities of Westminster, Broomfield, and Northglenn used for sampling of water quality and biology.

Accomplishments and Ongoing Activities

The group has completed the following activities: monthly water quality and flow monitoring, bi-annual biological and fish sampling during low-flow periods, a mission and goals brochure, a two-year in review newsletter, and participation in community events such as the “Build a Path to the Pond” project with the city of Westminster. In addition, the group has planned or is in the process of completing the following activities: an engineering analysis of stream conditions, additional newsletters focusing on best management practices in urban and agricultural areas, a video on the watershed, and other educational activities. The group is proud of having diverse participation in the group and collecting sound scientific data upon which to base decisions.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the group is developing a sound scientific understanding of the issues to better target future problem-solving efforts. Areas of strength of this watershed initiative appear to include: the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; efficiently run meetings with good attendance; adequate funding to achieve short-term goals; and assistance from federal, state and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) solid funding base to conduct needed activities, (2) regular and effective communication with stakeholders, and (3) identification of stakeholders who need to be at the table.

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Big Spring Creek Watershed Partnership

Focus of the Watershed Initiative

The Big Spring Creek watershed is located in central Montana. The focus of the Big Spring Creek Watershed Partnership is on the mid-watershed, an area covering approximately 100,000 acres spread over one county. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Lewistown, with a population of approximately 7,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, and agriculture.

Lewistown and surrounding areas are where most development and land-use activities are occurring in the watershed. The group is focused particularly on the Big Springs site, where one of the largest freshwater springs in the U.S. is located, and on the existing known spring recharge sites in the upper watershed. The area is undergoing growth and development with subsequent land-use changes, so it is believed that a collaborative watershed effort is necessary.

The Big Spring Creek Watershed Partnership was formed in 1994, primarily to enhance and protect Big Spring Creek. Problems with which the group is highly concerned include protection of the source springs area for the city of Lewistown, maintaining existing water quality in Big Spring Creek, the development of TMDL standards, the maintenance of fish and wildlife and/or endangered species related to improving certain stream reaches and maintaining trout populations on Big Spring Creek and its tributaries, land-use management related to developing a "Managing Community Growth" plan with Montana St. University Extension Service for Lewistown (with the support of the County Commissioner and the city of Lewistown), and the clean-up of an abandoned railroad yard and oil refinery.

Establishment of the group was primarily the result of information and coordination provided by the Natural Resources Conservation Service. In addition, the Fergus County Conservation District received a Clean Water Act section 319 grant to help create the group. From an "institutional" (or administrative) standpoint, the group is also concerned with problems associated with inadequate interagency or interjurisdictional coordination.

The group's mission/vision statement is "to promote cooperative resource management of the 255,000 acre Big Spring Creek Watershed. Through a spirit of cooperation and sharing, the mission is to coordinate efforts that will enhance, conserve, and protect the natural resources, the quality of life, and the economic vitality of the area." Specific short-term goals include: (1) enhancing watershed education and understanding, (2) improving water quality, and (3) enhancing stream and fishery conditions.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Natural Resource Conservation Service, Environmental Protection Agency, the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Montana Department of Fish and Wildlife, the city of Lewistown, the Fergus County Commissioners, a representative from the Lewistown school district, Boy Scouts of America, Society of American Foresters, and many citizens, landowners, school teachers, and small business people. Membership is open to all interested parties. The group is directed by a coordinator and a facilitator, and utilizes subcommittees, including the Brewery Flats Stream Restoration Committee and the Trail Committee. The group has an office at the Natural Resources Conservation Service Fergus County Conservation District. Meetings are held monthly. Issues are brought before the group by motions and consensus. Decisions are made utilizing a consensus process that allows agenda items to be reviewed and discussed at meetings.

The estimated annual budget of the group (including the value of in-kind services) is between \$30,000 and \$50,000. Major providers of funding and in-kind services include: the Natural Resources Conservation Service, the US Environmental Protection Agency, and the US Fish and Wildlife Service used for coordination, technical assistance and administration; state Department of Environmental Quality used for the development of water quality best management practices and stream restoration; Fergus County used for administration; and a variety of sources from other agencies.

Accomplishments and Ongoing Activities

The Big Spring Creek Watershed Partnership has completed the publication of newsletters and/or brochures and other educational activities. The local schools are involved in the effort to plan an education center. A well-head protection group has been recently formed to identify and protect the important geologic recharge zone area of the Big Snowy Mountains. This group is working with the city of Lewistown as part of the waterline replacement to secure and protect the Big Springs site at the State Fish Hatchery. Work in progress of the group includes: on-the-ground remediation or restoration activities such as one of the largest stream restoration projects in the state, a railroad yard clean-up, and creation of an environmental education center; workshops such as presentations at public meetings; the development of management plans under a Clean Water Act Section 319 grant; shared decision-making/negotiated problem-solving in the context of stream restoration and contamination investigation efforts; resource

monitoring of water quality; and fisheries surveys. The group is most proud of the coordination and collaboration of a diverse group of people, agencies, citizen groups and schools to improve the Big Spring Creek and facilitate clean-up efforts.

Overall, the group feels it has been moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Areas of strength of this watershed initiative appear to include: the adequacy of size, composition, and structure of the group; perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings (a local businessman chairs the meetings with a developed agenda); and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the fact that while funding is adequate to meet short-term goals, there will be more needed for trail/environmental center development.

The group identified the following actions as essential to the continued problem-solving efforts: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s).

The group identified the following keys to success of their effort: (1) starting with a plan and goals but being able to to revise and add things as needed, (2) education and awareness, and (3) local issues and values.

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Big Thompson Watershed Forum

Focus of the Watershed Initiative

The Big Thompson watershed is located in north-central Colorado. The focus of the group is on the entire basin, an area covering approximately 900 square miles spread over two counties. The focus area is comprised of three distinct drainage basins, which are defined as the topographic watersheds which drain into (1) the Big Thompson River upstream of its confluence with the Little Thompson River, (2) Horsetooth Reservoir, and (3) Carter Lake Reservoir. In addition, the watershed receives water diverted from the Western Slope (from the

Colorado River Basin on the other side of the continental divide) through the Colorado-Big Thompson project.

The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Loveland, with a population of approximately 50,000. The local economy is strong and moderately diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Big Thompson Watershed Forum was formed in 1997 in response to evidence of declining water quality, such as fish kills and taste and odor problems in treated drinking water. In addition, participants saw the need to prepare for source water assessment and protection activities. Establishment of the group was primarily the result of the efforts of local government representatives from municipalities, a water conservancy district, and a local teacher. Since its formation, the group has been mostly concerned with issues of water quality and water supply/flow regimes to the extent that flows affects water quality.

From an "institutional" (or administrative) standpoint, the group is also concerned with optimizing interagency or interjurisdictional coordination that will result in less duplication and more effective voluntary actions, and transboundary impacts related to the positive/negative impacts of the trans-basin diversion in the watershed. The mission/vision statement of the group is "to assess and protect water quality in the Big Thompson River. Where water is diverted into this area from other watersheds, the Big Thompson Watershed Forum will cooperate with water quality assessment and protection efforts led by the Colorado Water Quality Control Division or local teams from the other watersheds." Specific short-term goals include: (1) building an effective voluntary watershed protection program, (2) facilitating cooperative water quality assessment and the voluntary exchange of information, and (3) reducing or eliminating existing and potential water quality problems in the Big Thompson Watershed. Over the longer term, the goals of the group are "to serve as a forum that fosters stakeholder teamwork in conducting watershed assessments, identifying priority protection measures, educating affected interests, and promoting voluntary practices that protect the Big Thompson Watershed and the quality of its waters. Water quantity issues are an integral and indispensable aspect of water quality and will be addressed as such by this forum."

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Reclamation, Fish and Wildlife Service, National Park Service, Natural Resources Conservation Service, the Environmental Protection Agency, the US Geological Survey, one or more state agencies, one or more local agency, one or more water districts/organizations, one or more environmental groups, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator, paid for through member contributions. The group utilizes subcommittees, including Watershed Assessment and Outreach. The group has an office, located in Loveland. Meetings are held monthly. Issues are brought before the group by members suggesting an issue to the coordinator, and then having that issue placed on the

agenda for a board meeting. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000, an increase from past years. Major providers of funding and in-kind services include federal agencies such as the Environmental Protection Agency, the US Department of Agriculture, and the Department of Interior in the amount of \$30,000 used for projects; and varied local agencies in the amount of \$75,000 used for general operations and projects.

Accomplishments and Ongoing Activities

The group has completed a conference/workshop. In addition, the group has planned or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring, on-the-ground remediation or restoration activities, and the publication of newsletters and/or brochures. The group is most proud of establishing an effective watershed protection forum with strong political and financial support.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the rate/level of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state and local agencies. Areas of potential weakness include a perceived inadequacy of the decision-making process.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, the generation of increased public awareness of the resource or resource problem(s), and the potential modification of land-use practices. The group listed the following keys to success: (1) having a paid coordinator, (2) having committed members, and (3) having a clear mission, goals, and objectives.

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Cherry Creek Basin Water Quality Authority

Focus of the Watershed Initiative

The Cherry Creek watershed is located in central Colorado. The focus of the group is on the entire basin, an area covering approximately 245,500 acres spread over two counties. The focus area includes the drainage basin of Cherry Creek from its headwaters beginning at the Douglas and El Paso county lines to the dam at Cherry Creek Reservoir. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Aurora, with a population of approximately 250,000. The local economy is strong and highly diversified. There is not a significant percentage of the region's population employed in natural resource jobs.

The Cherry Creek Basin Water Quality Authority was formed in 1988 in response to a desire to preserve the water quality of Cherry Creek and Cherry Creek Reservoir. Establishment of the group was primarily the result of the efforts of local government. Since its formation, the group has been mostly concerned with issues of water quality in general, and phosphorus loadings in particular.

From an "institutional" (or administrative) standpoint, the group is also concerned with the disagreement among member entities on water quality standards. The mission/vision statement of the group is as follows: "The CCBWQA promotes the preservation of water quality in the Cherry Creek watershed through mitigation of urban impacts for the benefit of the public for recreation, fisheries, water supplies, and other beneficial uses within the economic ability of the Authority."

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Corps of Engineers, the Natural Resources Conservation Service, one or more state agencies, one or more local government agencies, one or more water districts/organizations, and other participants. Membership is limited to parties identified as Authority members in Colorado Revised Statutes Title 25. The group is directed through a management contract with R.S. Wells, L.L.C. The group utilizes subcommittees, including the Executive Committee and Technical Review Committee. The group has an office, located in the offices of R.S. Wells. Meetings of the Board of Directors are held quarterly. Issues are brought before the group through the Technical Review Committee. The group utilizes a formal decision-making process that is currently determined by the Board of Directors, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include Colorado State Parks, local land-use agencies, and private property owners through tax money.

Accomplishments and Ongoing Activities

The group has completed various construction projects at Cherry Creek Reservoir to improve water quality. In addition, the group is in the process of completing the development of a master management plan. The group is most proud of its water quality construction projects.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and local agencies. Federal agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, and on-the-ground modification of the physical landscape. The group listed the following keys to success: (1) cooperation among member entities, and (2) continued construction of pollution reduction facilities.

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Deep Creek Plan

Focus of the Watershed Initiative

The Deep Creek watershed is located in central Montana. The focus of the Deep Creek watershed group is on the middle and lower basin, an area covering approximately 50,000 acres spread over one county. This portion of the watershed has a mountain valley stream with a low gradient, partially managed by the US Forest Service and partly controlled by private irrigators. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Townsend, with a population of approximately 3,500. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of forestry, recreation and tourism, agriculture, energy, and mining.

The Deep Creek Plan was formed in 1991, primarily due to concerns over sediment loads and fishery aspects of the stream. Establishment of the group was primarily the result of a local stream and lake committee. Since its formation, the group has focused on the following issues: water supply/flow regimes, such as dewatering by irrigation; water quality, particularly as influenced by sediment loads; and the maintenance of fishery benefits. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, and a lack of local involvement in resource management. Specific short-term goals include: (1) restoration of the stream, (2) restoration of fisheries (trout), and (3) determining low cost "fixes" for local use. Over the longer term, the goals of the group are to have a stable fishery and trout spawning stream that will contribute to Missouri River and lake trout populations.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Fish and Wildlife Service, Natural Resource Conservation Service, the Environmental Protection Agency, the Montana Department of Environmental Quality, one or more local governments, one or more water districts/organizations, and the County Stream and Lake Committee. Membership is open to all interested parties. The group is directed by a coordinator funded by Environmental Protection Agency 319 funds. Meetings are held twice yearly. Issues are brought before the group by the Conservation District and Coordinator. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon the coordinator to check progress on TMDL parameters.

The estimated annual budget of the group (including the value of in-kind services) falls within the range of \$20,000 to \$75,000. Major providers of funding and in-kind services include the Environmental Protection Agency's 319 grant used for stream restoration, and the Montana Department of Environmental Quality used for monitoring and TMDL preparedness.

Accomplishments and Ongoing Activities

The Deep Creek Plan has the following projects in progress: resource monitoring of a TMDL designated stream, scientific research such as economic and site feasibility studies on the different stabilization methods, and on-the-ground remediation or restoration projects. The group is planning the publication of newsletters and/or brochures, and is organizing a conference. The group is most proud of restoring the fisheries as shown by a near doubling in the numbers of fry in one year and the local voluntary cooperation with irrigation districts to regulate sediment loads and dewatering.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. The rate of success is believed to be greater than that possible through other problem-solving approaches because the fish population is up and the sediment loads are down. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; and the

helpfulness of local, state, and federal agencies. Areas of potential weakness listed by the group include the fact that funding is inadequate to meet the short-term goals of stream bank stabilization.

Factors the group identified as essential components of their continued problem-solving effort include: on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group considers the following as keys to success: (1) the commitment by locals, (2) communication, and (3) not committing to something too large to begin with to ensure a measure of success.

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Graham & Norton County Non-Point Source Program

Focus of the Watershed Initiative

Graham & Norton Counties are located in north-central Kansas. The focus of the watershed initiative is on the water quality in both counties, an area covering approximately 1,152,000 acres. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Norton, with a population of approximately 3,000. The local economy is weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching, and mineral and/or energy production.

The Graham & Norton County Non-Point Source Program was formed in 1993 in response to water quality concerns in the two counties. Establishment of the group was primarily the result of the efforts of the State Conservation Commission and a local conservation district. Since its formation, the group has been mostly concerned with water quality issues related to nitrates, pesticides/herbicides, bacteria, phosphorus, and TMDLs; and land-use and/or management issues related to cattle waste, brine contamination, septic systems, and abandoned water wells.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem. Specific short-term

goals include: (1) providing cost-share assistance to develop livestock waste facilities, (2) providing cost-share assistance to replace or repair failing septic systems, and (3) providing cost-share assistance to plug abandoned water wells.

Structure and Functioning of the Watershed Initiative

The group includes members from the Natural Resources Conservation Service, one or more state agencies, and one or more local agency. Membership is limited because it is a state funded program. The group is directed by a coordinator, funded by the state of Kansas. The group has an office, located in the Hill City USDA building. Meetings are held monthly. Issues are brought before the group through feedback from landowners, first hand accounts, and through correspondence. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon unanimous agreement.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000, a slight reduction from past years if the value of technical assistance is considered. The State Conservation Commission provides 100 percent of the group's budget for use in their nonpoint source program.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of its work on livestock waste facilities.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; the adequacy of funding to meet short-term goals; well-attended and efficiently run meetings; and the helpfulness of federal, state and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) having a management plan, (2) implementation of that plan, and (3) funding.

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Hillsdale Water Quality Project, Inc.

Focus of the Watershed Initiative

The Hillsdale watershed is located in the eastern region of Kansas. The focus of the group is on the entire basin, an area covering approximately 144 square miles spread over four counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Gardner, with a population of approximately 4,300. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or recreation.

The Hillsdale Water Quality Project was formed in 1993 in response to concerns about taste and odor problems in the region's drinking water. Establishment of the group primarily resulted from the efforts of the US Environmental Protection Agency, the Kansas Department of Health and the Environment, and the Lake Region Conservation District. Since its formation, the group has been mostly concerned with issues of water quality associated with phosphorus loading. From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate funding/attention being given to a natural resource problem. The mission/vision statement of the group is as follows: "The Hillsdale Water Quality Project will develop a partnership among communities in the Hillsdale watershed to improve and protect the natural resource conditions to achieve improved water quality." Specific short-term goals include: (1) lowering the sediment flowing into the lake, (2) lowering the phosphorus entering the lake, and (3) generating a long-term funding source.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Corps of Engineers, Natural Resources Conservation Service, Environmental Protection Agency, and the US Geological Survey; the Kansas Department of Health and Environment; one or more local governments, including Miami, Johnson, Douglas, and Franklin counties; one or more water districts/organizations; and one or more non-governmental organizations including schools and other civic groups. Membership is open to all interested parties. The group is directed by a coordinator, funded through grants. The group utilizes subcommittees, including Water Quality,

Institutionalization, Pollution Control, and Information and Education. The group has an office, located at the contact person's address. Meetings are held monthly. Issues are brought before the group by committees. The group utilizes a formal decision-making process, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey), but has dropped in recent years due to the loss of state grant funds. Major providers of funding and in-kind services include federal agencies in the amount of \$20,000, state agencies in the amount of \$10,000, local agencies in the amount of \$100,000, and other revenue sources in the amount of \$150,000.

Accomplishments and Ongoing Activities

The group has completed the following activities: the development of management plans, and shared decision-making/negotiated problem-solving. In addition, the group has planned or is in the process of completing the following activities: resource monitoring, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, and other educational activities. The group is most proud of bringing together local partners willing to share responsibility for decision-making.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; the well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of federal, state, and local agencies.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) support for volunteers, (2) awareness of issues, and (3) recognition of success.

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James Creek Watershed Initiative

Focus of the Watershed Initiative

The James Creek watershed is located in central Colorado. The watershed is surrounded by douglas fir, spruce, ponderosa pine, and steep walled valleys with high energy hydrology, and igneous and metamorphic geology. The focus of the James Creek Watershed Initiative is on the entire basin, an area covering approximately 12,000 acres spread over 1 county. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Jamestown, which is a former mining town with a population of approximately 280. The local economy is weak and dependent on the proximity to metropolitan areas, such as Boulder.

The James Creek Watershed Initiative was formed in 1996, primarily in response to the difficulty in complying with drinking water standards for turbidity. Establishment of the group was mainly the result of citizen/activist activity, and followed earlier problem-solving attempts involving a flood mitigation study. Since its formation, the group has focused on issues of water quality such as sediment loading, erosion, and acid mine drainage; gathering of baseline water quality data; the maintenance of wildlife corridors and naturally reproducing trout populations; land-use management issues such as the degradation of riparian corridors, soils, and plant communities from off highway vehicles; and mined land reclamation and floodway mitigation.

From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with the interactions between the local town and federal land managers, inadequate funding/attention being given to a natural resource problem, illegal and irresponsible off highway vehicle use, general environmental degradation, lack of local involvement in resource management, and inadequate interagency or interjurisdictional coordination. The mission/vision statement of the group is to “engage the community in protecting the quality of the drinking water and the ecosystem surrounding it.” Specific short-term goals include: (1) developing geographic information system (GIS) capabilities for improved data sharing, (2) continuing water quality and macroinvertebrate sampling, and (3) reclaiming certain damaged and eroded areas. Over the longer term, the goals of the group include: maintaining habitat integrity, preventing degradation, facilitating cooperation, educating and involving stakeholders, and gathering baseline water quality data.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service; Environmental Protection Agency; the Colorado Division of Wildlife; the Colorado Division of Minerals and Geology; the Town of Jamestown; Boulder County Health Department; the Left Hand Ditch Company; the Southern Rockies Ecosystem Project; the Jamestown Area Musicians (JAM); individuals from University of Denver, the University of Colorado, and Colorado State University; and local citizens. Membership is open to all interested parties.

The group is directed by a coordinator funded by the US Environmental Protection Agency. The group uses a facilitator and subcommittees, including Forest Management and the Hiking Club. The group has an office, located in a private home. In addition, the group expects to be granted 501(c)(3) non-profit status very soon. If that occurs, the group will be governed by a five person Board of Directors. Meetings are held quarterly. Issues are brought before the group by individuals or sub-committees. Decisions are made utilizing a process that is largely ad hoc and unspecified, generally reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include (with percentages of overall budget in brackets): Environmental Protection Agency's Regional Geographic Initiative for Program Development (50 percent), an Environmental Protection Agency's Source Water Protection Grant (30 percent), and Colorado Division of Wildlife (15 percent) funding for water quality assessment.

Accomplishments and Ongoing Activities

The James Creek Watershed Initiative has completed the following activities: the development of workplans and timelines for each grant cycle; on-the-ground remediation or restoration activities including cleanups/trash hauling, wetland/meadows restoration, and a prescribed burn; and the publication of a newsletter. The group has the following activities planned or in progress: negotiations with the U.S. Forest Service for road closures, resource and water quality monitoring, and a watershed protection plan and watershed ordinance amendments. The group is most proud of both creating the group and that the citizens are now taking ownership in the quality of their natural resources.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. The level/rate of success is believed to be greater than that possible through other problem-solving approaches. Areas of strength of this watershed initiative appear to be a favorable local political climate, the perceived adequacy of decision-making arrangements, well-attended and efficiently run meetings, the adequacy of funding to meet short-term goals, and the helpfulness of state and federal agencies. Areas of potential weakness include a lack of continued funding, and a lack of resources by otherwise supportive local governments.

Actions the group listed as essential to their continued problem-solving effort include: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) public awareness and involvement; (2) strong vision, goals, objectives and action items; and (3) adequate financial and technical resources.

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Muddy Creek Task Force

Focus of the Watershed Initiative

The Muddy Creek watershed is located in north-central Montana. The focus of the group is on the lower basin, an area covering approximately 200,000 acres spread over two counties. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Great Falls, with a population of approximately 60,000. The local economy is moderate in strength and moderately diversified. The region has 50,000 acres of irrigated land with return flows into this small stream. In addition, there is a significant military base in the area that adds to the economy.

The Muddy Creek Task Force was formed in 1992 in response to a lack of progress regarding management problems over the preceding 20 years. Establishment of the group was primarily the result of the efforts of the Montana Department of Natural Resources and Conservation, with additional assistance from the US Bureau of Reclamation, the Natural Resources Conservation Service, and the local Cascade County Conservation District. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to irrigation return flows, water quality related to sediment, and land-use management related to irrigation and grazing.

From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to the natural resource problem. In the past, the federal government made significant financial contributions to the irrigation projects. Now, those projects are owned by local people with less money and resources to adequately maintain them. Specific short-term goals include: (1) reducing erosion/sediment load in the river, (2) reducing return flows, and (3) improving fisheries. Over the longer term, the goals of the group are to stabilize the stream to benefit all water users.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Bureau of Reclamation, Fish and Wildlife Service, Natural Resources Conservation Service, Environmental Protection Agency, and US

Geological Survey; the Montana Department of Natural Resources and Conservation; the Montana Department of Fish, Wildlife and Parks; the Montana Department of Environmental Quality; the Cascade County and Teton Conservation Districts; an irrigation district; the Canoe Club and Sportsmen Club; and local landowners. Membership is open to all interested parties who are involved or impacted by the problems being addressed.

The group is directed by a coordinator funded through an Environmental Protection Agency grant. Meetings are held as necessary. Issues are brought before the group at each meeting and as a result of outreach by the coordinator. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 and \$75,000. Major providers of funding and in-kind services include (with percentages of the group's overall budget in brackets): the Bureau of Reclamation (18 percent) used for Bureau projects; the Montana Department of Natural Resources and Conservation (50 percent) used for stream restoration; the Montana Department of Fish, Wildlife and Parks (5 percent) used for stream restoration; the county and conservation districts (6 percent) used for administrative needs; an irrigation district (20 percent) used for equipment and manpower; and environmental groups (1 percent) used for manpower.

Accomplishments and Ongoing Activities

The group has completed the development of a management plan, which included prioritizing workload, tasks, and needs. In addition, the group has the following activities planned or in progress: shared decision-making/negotiated problem-solving; resource monitoring; scientific research by the Bureau of Reclamation to demonstrate new ideas; on-the-ground remediation or restoration activities, which include stream restoration, tree planting and other land management issues; publication of newsletters and/or brochures as needed; conferences/workshops; and other educational activities, such as tours and slide shows to keep people informed. The group is most proud of reducing erosion by 75 percent, from 200,000 tons to 50,000 tons annually.

Overall, the group considers itself to be very successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements. In addition, the group believes the level/rate of success is greater than that possible through other problem-solving approaches, and most participants believe the problem is being solved.

Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of the decision-making structure; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or

ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) including all stakeholders, (2) having small successes for people to see, and (3) hiring a coordinator.

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Musselshell River Basin Water Management Advisory Committee

Focus of the Watershed Initiative

The Musselshell River watershed is located in central Montana. The focus of the Musselshell River Basin Water Management Advisory Committee is on the entire basin, an area covering approximately 6,000,000 acres spread over 4 or more counties. The population of the focus area falls within the range of 5,000 to 25,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Roundup, with a population of approximately 3,000. The local economy is moderate in strength and not diversified, featuring natural resource jobs mostly in the sectors of agriculture.

The Musselshell River Basin Water Management Advisory Committee was formed in 1993, in response to chronic dewatering and misappropriation of water. Establishment of the group was primarily the result of the federal Bureau of Reclamation and Natural Resources Conservation Services, and the state Department of Natural Resources and Conservation. The basin was classified as a chronically dewatered watershed by the Montana Department of Natural Resources and Conservation in April, 1995. Since its formation, the group has been mostly concerned with issues of water supply/flow regimes related to the equitable distribution of contract and natural flow water; water quality related to TDMLs and sediment transport; maintenance of both a warm water (lower basin) and cold water (upper basin) fishery for fish and wildlife maintenance and/or endangered species; and land-use management as it pertains to water quality and quantity.

From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, general environmental degradation, and the lack of local involvement in resource

management. Specific short-term goals include managing storage facilities to get the best utilization of available resources.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Bureau of Reclamation; Natural Resource Conservation Service; U.S. Geological Survey; the Montana Department of Natural Resources and Conservation; the Montana Department of Environmental Quality; the Montana Department of Fish, Wildlife and Parks; three local conservation districts and six counties; and several water districts/organizations. Membership is open to all interested parties.

The group is directed by a coordinator. Meetings are held twice yearly. Issues are brought before the group during the new business portion of meetings. Decisions are made utilizing a process that is largely ad hoc and unspecified, reliant upon consensus.

The group has no budget. Major providers of in-kind services include the US Bureau of Reclamation and the Natural Resources Conservation Service used for Technical assistance; the Montana Department of Water Resources and Conservation, and the Department of Environmental Quality used for technical assistance; and the Deadman Basin Water Users Association and the Upper Musselshell Water Users Association used for water management activities.

Accomplishments and Ongoing Activities

The Musselshell River Basin Water Management Advisory Committee has completed the following activities: the development of management plans for the local reservoir; scientific research on the management of the Musselshell River basin; legal or policy research on the plan to fill the reservoir; a Know Your Watershed conference/workshop; and other educational activities such as irrigation workshops, water measurement workshops, and technical education. The group is in progress of completing resource monitoring of water quantity and quality. The group is most proud of the agreement between the Upper Musselshell Water Users Association and the Deadman's Basin Water Users Association to fill the reservoir.

Overall, the group considers itself to be relatively unsuccessful in addressing the natural resource problems of concern, as illustrated by the lack of monitoring data demonstrating on-the-ground improvements. Areas of strength of this watershed initiative appear to be the perceived adequacy of decision-making arrangements and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the awkward size of group, occasionally poor meeting attendance (largely depending on the time of year), and the inadequacy of funding to meet short-term goals.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-

ground modification of the physical landscape, and the generation of additional technical data or knowledge about the resource. The group listed the following keys to success: (1) economic motivation of participants, (2) government regulation forcing changes, and (3) legal action making compromise a cost-effective alternative.

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Owl Mountain Partnership

Focus of the Watershed Initiative

The North Platte watershed originates in north-central Colorado. The focus of the group is on the upper basin, an area covering approximately 70,400 acres spread over one county. Elevation in the focus area varies from 7,000 feet in valley bottoms to 12,900 feet in the state forest. The average annual rainfall is approximately 16 inches. There are only 33 frost-free days in the focus area each year. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed mostly in rural areas. The largest city in the region is Walden, with a population of less than 1,000. The local economy is weak and not diversified. There is a significant percentage of the regions population employed in natural resource jobs in the sectors of agriculture and/or ranching.

The Owl Mountain Partnership was formed in 1993 as a result of the efforts of the federal Bureau of Land Management, the Colorado Department of Wildlife, and the North Park Habitat Partnership Program. Since its formation, the group has been mostly concerned with issues of land-use and/or management, water quality, and the maintenance of fish and wildlife and/or endangered species. From an “institutional” (or administrative) standpoint, the group is also concerned with the lack of local involvement in resource management. The mission/vision statement of the group is “To serve the economic, cultural, and social needs of the community while developing adaptive long-term landscape management programs, policies, and practices that ensure ecosystem sustainability.” Specific short-term goals include: (1) creating partnerships that build trust and teamwork, (2) developing and implementing ecosystem management plans, and (3) communicating knowledge gained to the public.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, the Natural Resources Conservation Service, the Colorado Division of Wildlife, the Colorado State Forest Service, Colorado State University, and other participants such as landowners. Membership is open to all interested parties. The group is directed by a coordinator funded through various grants. The group utilizes subcommittees, including: Budget, Projects, Outreach, and Planning.

The group has an office. Meetings are held monthly. Issues are brought before the group usually by the group's steering committee and occasionally by other interested parties. The watershed initiative utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the federal Bureau of Land Management and Environmental Protection Agency's 319 funding in amounts that vary yearly, used for projects, outreach and administration; the US Forest Service provides in-kind rent; and the US Fish and Wildlife Service provides the use of a field vehicle. State agency support comes from the Colorado Division of Wildlife in the amount of \$20,000 used for projects and administration and the State Land Board in varying amounts used for a grazing plan and projects. Local agency support comes from the North Park Habitat Partnership Program in varying amounts used for projects, monitoring, and administration and the North Park School District for Geographic Information System and outreach expenses.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, resource monitoring, publication of newsletters and/or brochures, and other educational activities. Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; the adequacy of funding to meet short-term goals; and the helpfulness of state and federal agencies. Areas of potential weakness include that the local agencies have only been slightly helpful.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s).

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Sun River Watershed

Focus of the Watershed Initiative

The Sun River watershed is located in central Montana. The focus of the Sun River Watershed is on the entire basin, an area covering approximately 1.4 million acres spread over 3 counties. The watershed is 110 miles long, beginning in headwaters of the Rocky Mountain Front and meeting the Missouri River at Great Falls. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in mostly rural areas. The largest city in the region is Great Falls, with a population of approximately 60,000. The local economy is moderate in strength and moderately diversified with a prominent military base.

The Sun River Watershed initiative was formed in 1994 in response to the need to improve water quality and quantity of the Sun River, in part through coordinating many ongoing projects. Establishment of the group was primarily the result of the federal Bureau of Reclamation, the state Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, and local conservation districts. The formation of the group followed earlier problem-solving attempts involving isolated projects. Since its formation, the group has primarily been concerned with issues of water supply/flow regimes related to the impacts from return flows and flow fluctuations, water quality related to erosion/sedimentation, and land-use management related to irrigation. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to the problems. The mission/vision statement of the group is to be “a watershed Project to benefit all water users in the basin.” Specific short-term goals include: (1) reducing erosion/sediment load, (2) reducing return flows, and (3) improving fisheries. Over the longer term, the goals of the group include maintaining and/or improving a viable agricultural economy.

Structure and Functioning of the Watershed Initiative

The group includes members from: federal agencies, including the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Natural Resource Conservation Service, Environmental Protection Agency, and the U.S. Geological Survey; state Departments of Natural Resources and Conservation, Fish and Wildlife Protection, Environmental Quality, and Transportation; Cascade County; three conservation districts; the City of Great Falls; Fort Shaw Irrigation District and Greenfields Irrigation District; the Audubon, Canoe Club, and hunting club; and local citizens. Membership is open to all interested parties.

The group is directed by a coordinator funded by Environmental Protection Agency grant money under section 319 of the Clean Water Act, and a facilitator from the Natural Resources Conservation Service. The group utilizes subcommittees, including subcommittees dealing with weeds, monitoring, and others as needed. Meetings are held quarterly. Issues are brought before the group by anyone at meetings. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey), with project funding up to \$500,000 annually. Major providers of funding and in-kind services include (with percentages of the group's overall budget in brackets) the Bureau of Reclamation (20 percent) used for Bureau of Reclamation projects; the US Forest Service (5 percent) used for land management; the Environmental Protection Agency (30 percent) used for section 319 purposes; the state Department of Natural Resources and Conservation (5 percent) used for stream restoration; the state Department of Fish and Wildlife Protection (5 percent) used for stream restoration; the state Department of Environmental Quality (2 percent); conservation districts (2 percent) used for administration; irrigation districts (30 percent) used for manpower and funds; and environmental groups (1 percent) used for manpower.

Accomplishments and Ongoing Activities

The Sun River Watershed initiative has completed the development of long-term management plans to help prioritize work. In addition, the group has the following activities in progress: shared decision-making/negotiated problem-solving; resource monitoring, including using US Geological Survey gauging stations, photo points, and Geographic Information System mapping; on-the-ground remediation or restoration activities, including stream restoration, tree planting, and land management programs; the publication of newsletters and/or brochures; conferences/workshops; and other educational activities including outreach, slide shows, and briefings. The group is most proud of creating a sense of teamwork with many players.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. In addition, most participants believe the problem is being solved at a level/rate greater than that possible through other problem-solving approaches since the "old system"

lacked a clear leader. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; the adequacy of funding to meet short-term goals; and the helpfulness of local, state, and federal agencies. Areas of potential weakness include the perceived inadequacy of decision-making arrangements, and poorly attended or inefficiently run meetings related to the fact that the group feels there is too much going on with too many meetings.

The group believes the following actions are essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) teamwork, (2) coordinator, and (3) erosion control.

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Upper South Platte Watershed Protection Association

Focus of the Watershed Initiative

The Upper South Platte watershed is located in central Colorado. The focus of the group is on the upper basin, an area of highly diverse geography above Chatfield Reservoir which includes five counties. The population of the focus area falls within the range of 250,000 to 1,000,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Denver, with a population of approximately 503,000. The local economy is moderate in strength and highly diversified. There is a significant percentage of the region's population employed natural resource jobs, mostly in the sectors of tourism and/or recreation, and agriculture and/or ranching. Other residents of the area commute to employment in the Denver/Colorado Springs areas.

The Upper South Platte Watershed Protection Association was formed in 1998 in response to concerns about water quality and quantity. Since its formation, the group has been mostly

concerned with issues of water quality, water supply/flow regimes, land-use and/or management, and general environmental degradation.

From an “institutional” (or administrative) standpoint, the group is concerned with inadequate funding/attention being given to water quality problems, inadequate interagency or interjurisdictional coordination, transboundary impacts, and a lack of local involvement in resource management. Specific short-term goals include: (1) characterizing quality data, and (2) education. Over the longer term, the goals of the group are to facilitate ecosystem rehabilitation and management to improve and protect water quality and quantity.

Structure and Functioning of the Watershed Initiative

The group includes members from: federal agencies, including the US Forest Service, Bureau of Land Management, and the Natural Resources Conservation Service; one or more state agencies; one or more local agencies; one or more water districts/organizations; and one or more non-governmental organizations. Membership is open to any group. The group is directed by a Board of Directors and utilizes subcommittees. Meetings are held monthly. Issues are brought before the group through focus groups, which utilize a decision-making process reliant on consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the federal Environmental Protection Agency, which provided an initial grant of \$40,000 used to evaluate existing water quality data; state and local agencies in the amount of \$100 per member for dues; and other parties which provide donations.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans for water management practices, resource monitoring consisting of collection and characterization of water quality data, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities. The group is most proud of just creating the group.

Overall, the group considers itself so new that it cannot evaluate whether or not it has been successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; and the perceived adequacy of the decision-making process. Meetings are well-attended and efficiently run. Federal agencies have been moderately helpful; and local and state agencies have been very helpful. Areas of potential weakness include that funding is inadequate to meet short-term goals and longer-term protection efforts.

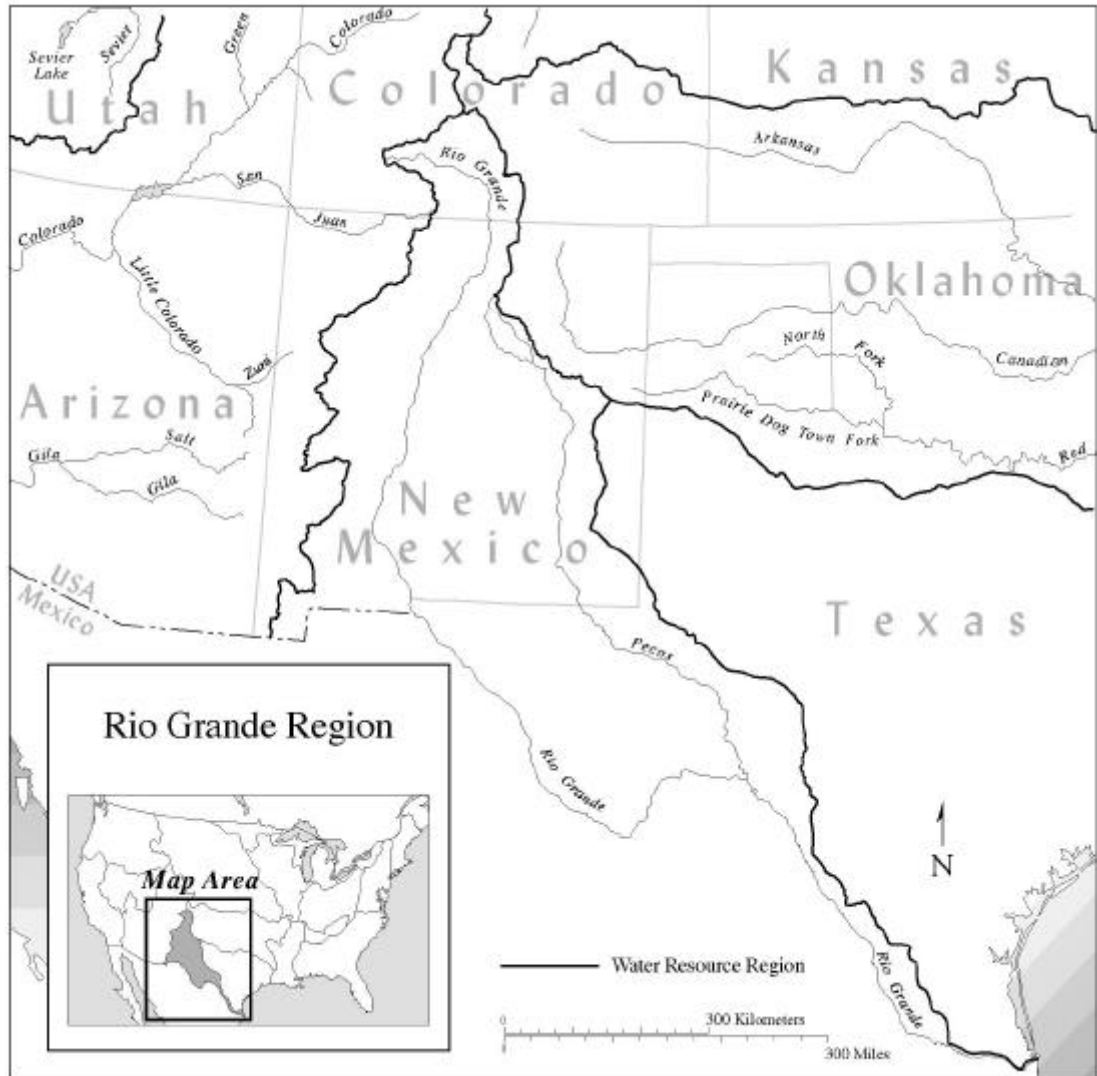
The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following key to success: support of the public with subsequent political action to effect policy and land-use practices.

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Chapter 11

Selected Watershed Initiatives in the Rio Grande Region



Beginning in southern Colorado and flowing south through New Mexico into Texas, the Rio Grande River eventually becomes the border between the U.S. and Mexico. The *Source Book* is primarily concerned with the northern half of this vast basin. The Rio Grande is under tremendous strain from urban growth, industrial pollution and agriculture. While management by watershed initiatives is not as developed or prominent in this area as in other parts of the West, the issues faced are equally diverse and complex.

New Mexico has taken steps to encourage regional watershed planning groups through legislation (NRLC, 1998). The state of Colorado, in a less formal manner, also has taken steps to encourage the formation of groups in the headwaters. Nonetheless, the region does not appear to have an abundance of watershed initiatives. This may simply be a reflection of the aridity and sparse population in much of the basin, an obvious point of contrast with the more active watershed management scene of the Pacific Northwest. It is also likely that the *Source Book* fails to capture the community-based activities occurring through the acequias and tribal pueblos of northern New Mexico. The role of tribal water managers is likely to grow in coming years, as the Environmental Protection Agency increasingly delegates state-like powers regarding water quality to tribal governments.

Alamosa River Watershed Project

Focus of the Watershed Initiative

The Alamosa River watershed is located in south-central Colorado. The upper half of the watershed is in the Rio Grande National Forest, while the lower half is in the San Luis Valley. Elevation of the watershed ranges from 13,300 feet along the Continental Divide to approximately 7,600 feet near the confluence with the Rio Grande mainstem. The focus of the Alamosa River Watershed Project is the entire basin, an area covering approximately 127,000 acres spread over 4 counties. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in rural areas. The population consists of a majority of low-income people of color, mostly Hispanic. The largest city in the region is La Jara, with a population of approximately 800. The local economy is weak and moderately diversified, featuring natural resource jobs mostly in the agricultural sector.

The Alamosa River Watershed Project was formed in 1995 primarily to address issues of erosion caused by channel straightening and contamination from abandoned mines. As a result, the group is highly concerned with water supply/flow regimes, water quality, the maintenance of fish and wildlife, and land-use management issues. Erosion has damaged irrigation headgates, making it difficult to get water from the river to fields and livestock. Acid mine drainage from Summitville Mine wiped out all of the fish in the river in 1990. Metals and acidity from that spill have damaged metal irrigation structures, crops and livestock. Riparian meadows and habitat have been degraded by channel straightening and overgrazing.

Establishment of the group was primarily the result of efforts by the Conejos County Soil Conservation District and the Natural Resources Conservation Service, which followed earlier problem-solving attempts involving ad hoc local organizing. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with transboundary impacts of the Summitville Mine. The mine is in Rio Grande County, but all the pollution flows into Conejos County. In addition, this project is intended to address the inadequate funding being given to the natural resource problems and the lack of local involvement in resource management.

This project is designed to be grassroots-driven. The mission/vision statement of the group is to "Identify the diverse interests and resource issues of concern to all users of the Alamosa River watershed." According to the group, this vision has been met and activities undertaken to act on public concerns. Specific short-term goals include: (1) installing erosion control demonstration projects, (2) improving riparian habitat, (3) educating and involving the public. Over the longer term, the goals of the group include: restoring/stabilizing the river, improving water quality, involving/educating the public, and improving riparian habitat.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Natural Resource Conservation Service, the Colorado Division of Water Resources, Conejos County Soil Conservation District, Alamosa-La Jara Water Conservancy District, ranchers, farmers, water users, and private citizens. Anyone can join the group, however, membership on the steering committee is limited. All meetings are open to the public. The group is directed by a coordinator funded by Conejos County Soil Conservation District and Environmental Protection Agency. The group has an office, located at in the Natural Resources Conservation Service building in La Jara. Meetings are held once every one and a half months, on average. Issues are brought before the group by citizens and/or committee members. Decisions are made utilizing a process that is largely ad hoc and unspecified. The group relies upon consensus to make decisions; if consensus is not possible, a vote is held.

The estimated annual budget of the group (including the value of in-kind services) falls within the range of \$20,000 to \$75,000. Major providers of funding and in-kind services include (with percentages of the group's total budget in brackets): Environmental Protection Agency funding (75 percent) used for administrative, construction, and public education; local agency support (20 percent), from the Conejos County Soil Conservation District, used for the coordinator and to start-up the watershed education project; and other agencies (5 percent)—including Trout Unlimited, Conejos County Conservation District, Alamosa-La Jara Water Conservancy District, and the Rio Grande Water Conservation District—used for construction, labor, and equipment.

Accomplishments and Ongoing Activities

The Alamosa River Watershed Project has completed several projects, including: the development of management plans; shared decision-making/negotiated problem-solving; monitoring of erosion-control projects; riparian grazing management; on-the-ground remediation or restoration activities such as willow planting, grass seeding, and grazing management; the publication of a semi-annual newsletter called "Alamosa River News and Notes"; numerous public meetings; and other educational activities such as field tours, an educational video, and press releases. The group is most proud of its erosion-control demonstration projects and riparian restoration efforts.

Overall, the group believes it is very successful in addressing water supply and land-use issues and moderately successful in addressing water quality and fish and wildlife maintenance issues. The best evidence to illustrate this success is monitoring data demonstrating on-the-ground improvements. Most participants believe the problem is being solved.

Areas of strength of this watershed initiative appear to be the size of the group, the adequacy of decision-making arrangements, well-attended and efficiently run meetings, and the helpfulness of local, state, and federal governments. An area of potential weakness is funding, which is only adequate to meet short-term goals. Areas listed by the group as essential components of long-term problem-solving include: changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) public involvement and education, (2) local support, and (3) adequate funding.

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Pecos River Native Riparian Restoration Organization

Focus of the Watershed Initiative

The Pecos River watershed is located in southeastern New Mexico. The focus of the Pecos River Native Riparian Restoration Organization is on the lower basin, an area covering approximately 5,000 acres spread over 1 county. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in towns/cities. The largest city in the region is Artesia, NM, with a population of approximately 15,000. The Pecos River floodplain is located just east of Artesia. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of agriculture, energy, and mining.

The Pecos River Native Riparian Restoration Organization was formed in 1992 in response to the need to control the expansion of Salt Cedar in the floodplain, which is detrimental to native plants and animals. Establishment of the group was primarily the result of a citizen activist group and a non-profit organization. Since its formation, the group has been mostly concerned

with issues of water supply/flow regimes, water quality, the maintenance of fish and wildlife and/or endangered species, land-use and/or management, and general environmental degradation. From an “institutional” (or administrative) standpoint, the group is also concerned with problems associated with inadequate funding/attention being given to a natural resource problem, general environmental degradation, transboundary impacts, and inadequate interagency or interjurisdictional coordination. Specific short-term goals include: (1) controlling salt cedar, (2) re-establishing native vegetation, and (3) preventing water loss to evapotranspiration to keep more water in the river system.

Structure and Functioning of the Watershed Initiative

The group includes ad hoc members from: the US Bureau of Land Management, Bureau of Reclamation, Natural Resource Conservation Service, one or more state natural resource agencies, one or more local governments, one or more water districts/organizations, one or more environmental groups, one or more non-governmental organizations, and one or more academic or citizens groups. Membership is open to all interested parties. The group is directed by a coordinator. Meetings are held monthly. Issues are brought before the group by members and the public. Decisions are made utilizing a process that has been pre-determined by the group during its initial formation, reliant upon majority rule.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include federal, state, and local agencies.

Accomplishments and Ongoing Activities

The Pecos River Native Riparian Restoration Organization has completed the following activities: the development of management plans, resource monitoring, scientific research, and legal or policy research. The group is in the process of completing the following: on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, and other educational activities.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data demonstrating on-the-ground improvements. Areas of strength of this watershed initiative appear to be the adequacy of size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; well-attended and efficiently run meetings; and the adequacy of funding to meet short-term goals. According to the group, local, state, and federal agencies have been moderately helpful to the effort.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a substantial modification in water allocation, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of

the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed determination as the key to success.

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Rio Grande/Rio Bravo Coalition

Focus of the Watershed Initiative

The Rio Grande basin extends from southern Colorado to the Gulf of Mexico. The focus of the Rio Grande/Rio Bravo Basin Coalition is on the entire basin including the major tributaries (Conchos, Pecos and others), an area covering approximately 182,000 square miles spread over three states and two countries, which complicates management/restoration efforts. The population of the focus area is over 13,000,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. One of the largest cities in the region is Albuquerque, with a population of over 500,000. Other major cities include El Paso and Monterrey, Mexico. The local economy is moderate in strength to weak and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of agriculture and/or ranching, and mineral and/or energy production.

The Rio Grande/Rio Bravo Coalition was formed in 1996 and was an outgrowth of a 1994 conference at which over 140 participants discussed the impediments/challenges to a sustainable river basin. The organization was catalyzed by the efforts of five US and Mexican Universities to develop broad based strategies for sustainable development. Since its formation, the group has been mostly concerned with issues of sustainability of the basin. From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination. The mission statement of the group is "to facilitate local communities in restoring and sustaining the environment, economies, and the social well-being of the Rio Grande/Rio Bravo Basin." Specific short-term goals include: (1) developing capacity of grassroots organizations, (2) building a united constituency for confronting the problems in the basin, and (3) involving the public through educational events. Over the longer term, the goals of the group are to be a voice for the basin, provide wide-scale

public awareness of river and sustainability issues, and support local projects and organizations by building better networks.

Structure and Functioning of the Watershed Initiative

The membership of the coalition is very broad, including members from Indian tribes, local governments, environmental groups and other non-governmental organization, academia, and citizens. Membership is limited to those parties that agree to adhere to the mission statement and principles of the group. The group is directed by two co-directors, one from Mexico and one from the US. Both positions are funded through foundations/donors. Board meetings are held twice yearly. The group has three offices: one in El Paso, one in Laredo, and one in Ciudad Juarez, Mexico. Issues are brought before the group through a periodic survey and by direct communication between members and staff. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) exceeds \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include (with percentages of the group's overall budget in brackets): the Environmental Protection Agency (2 percent) used for conferences, the New Mexico Border Health Office (7 percent) used for local water quality education, universities (13 percent) and foundations (65 percent) used for general program development, and donors (13 percent).

Accomplishments and Ongoing Activities

The group has completed the following activities: a biannual conference and an annual celebration called the Dia Del Rio, which draws over 10,000 participants. In addition, the group has planned or is in the process of completing the following activities: the development of a statement of a sustainable basin with benchmarks, and the publication of newsletters and/or brochures.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this watershed initiative appear to be the perceived adequacy of the decision-making process, well-attended and efficiently run meetings, the adequacy of funding to meet short-term goals, and the assistance of federal agencies. Areas of potential weakness include the inadequacy of the size, composition, and organizational structure of the group since the basin is so large; and the relative unhelpfulness of local and state agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) developing a relationship with the players, (2) trying to make people feel like the door is always open to their participation, and (3) keeping faith in the process that results will come.

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Rio Puerco Watershed Management Committee

Focus of the Watershed Initiative

The Rio Puerco watershed is located in northwestern New Mexico. The focus of the Rio Puerco Watershed Management Committee is on the entire basin, an area covering approximately 2 million acres spread over 3 counties. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and towns. The largest city in the region is Grants, with a population of approximately 14,000. The local economy is moderate in strength and moderately diversified, featuring natural resource jobs mostly in the sectors of recreation and tourism, agriculture, and energy and mining. The watershed is socially and ecologically complex with elevations ranging from 9,000 feet to 4,000 feet and an intermingled land ownership pattern consisting of federal, state, tribal, and private land.

The Rio Puerco Watershed Management Committee was formed in 1996 as the result of federal legislation. Establishment of the group was primarily the result of the federal Bureau of Land Management, and followed earlier problem-solving attempts involving issue workgroups, federal land-use plans, and court decisions. Since its formation, the group has been mostly concerned with issues of water quality related to the high sediment loads in the Rio Puerco, the maintenance of fish and wildlife and/or endangered species related to meeting mandates and avoiding future listings, and land-use management related to historical land uses with environment concerns that impact healthy plant communities and wildlife populations.

From an “institutional” (or administrative) standpoint, the group is concerned with problems associated with inadequate interagency or interjurisdictional coordination, inadequate attention/funding being given to the natural resource problem, the lack of local involvement in resource management, and general environmental degradation. Specific short-term goals include: (1) identifying best management practices, (2) educating users and interests, and (3) promoting/funding on-the-ground improvement projects and practices. Over the longer term,

the goals of the group include ensuring that the Rio Puerco water meets established water quality standards.

Structure and Functioning of the Watershed Initiative

The group includes members from: the US Forest Service, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Natural Resource Conservation Service, Environmental Protection Agency, U.S. Geological Survey, one or more Indian tribes, one or more state natural resource agencies, one or more local governments, one or more water districts/organizations, one or more environmental groups, and one or more non-governmental organizations. Membership is open to all interested parties.

The group is directed by a coordinator and facilitator funded by the Bureau of Land Management. The group utilizes subcommittees, including Highway 44, BMP's, Projects, Reports, and many others. Meetings are held monthly. Issues are brought before the group by any member. Decisions are made utilizing a process that is reliant upon consensus. The group has no budget. All participants contribute to the extent possible.

Accomplishments and Ongoing Activities

The Rio Puerco Watershed Management Committee is in the process of completing the following activities: resource monitoring related to project implementation and monitoring, scientific research, on-the-ground remediation or restoration activities (the principle focus of the group), publication of a report to Congress, and other educational activities such as outreach in local Navajo Chapters through the Joint Land Board. The group is most proud of the work of its project subgroups and the creation of ranking criteria.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that the level/rate of success is believed to be greater than that possible through other problem-solving approaches. All stakeholders are involved in the design and approval of projects. Areas of strength of this watershed initiative appear to be the adequacy of the size, composition, and structure of the group; the perceived adequacy of decision-making arrangements; and well-attended and efficiently run meetings. Areas of potential weakness include the fact that funding is inadequate to meet short-term goals.

The group considers the following actions to be essential to its continued problem-solving effort: a substantial modification of land-use practices, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, the generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) commitment, (2) communication, and (3) flexibility.

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Santa Fe Watershed Association

Focus of the Watershed Initiative

The Santa Fe watershed is located in north-central New Mexico. The focus of the group is on the entire basin, an area covering approximately 170 square miles spread over one county. The watershed has its headwaters in the Sangre de Cristo mountains at approximately 12,000 feet and meets the Rio Grande at around 5,000 feet while traveling through the city of Santa Fe, old farming communities, and natural areas. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed mostly in cities/towns. The largest city in the region is Santa Fe, with a population of approximately 60,000 and a rich history of Spanish culture. The local economy is strong and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of tourism and/or recreation.

The Santa Fe Watershed Association was formed in 1997 in response to concerns by the group's founder that citizens and agencies needed to come together to deal with the problems of the watershed. Since its formation, the group has been mostly concerned with issues of land-use management related to the improvement of agricultural techniques, and water supply/flow regimes related to enhancing the stream flow for aesthetics, biological viability, aquifer recharge, and agriculture. From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws. In addition, the group feels that systematic problems are not addressed in a meaningful way. The mission/vision statement of the group is as follows: "The Santa Fe Watershed Association is concerned with the long-term integrity of the watershed of the Santa Fe River, from Lake Peak to the Rio Grande. We take action to protect and restore the river and watershed through research and education, participation in governmental permitting and planning processes, and celebration and service projects."

Specific short-term goals include: (1) getting organized and staying active; (2) connecting people to the watershed through monitoring, hikes, and service projects; and (3) serving as the voice of the watershed in the political arena. Over the longer term, the goals of the group are: (1) to create linkages and fill the gaps in the watershed/river management programs, (2) to

assist various watershed interests in finding their common ground, and (3) to strive toward a biologically viable, stable river that reflects the health of its watershed.

Structure and Functioning of the Watershed Initiative

The group includes participants from: the US Forest Service, National Park Service, the New Mexico Environment Department, the city and county of Santa Fe, the Acequia Madre and La Cienega Ditch Association, the Audubon Society, the Canyon Preservation Trust, 1000 Friends of New Mexico, the Santa Fe Community Foundation, and many other concerned citizens. Membership is open to all interested parties, although agency representatives are not voting members.

The group is directed by a coordinator and a facilitator, funded through grant money when available. The group utilizes subcommittees, including Organization, Upper Watershed Hikes, and Dia del Rio Celebration. Meetings are held as necessary. Issues are brought before the group by members through the Coordinator. The group utilizes a decision-making process that is largely ad hoc and unspecified. The Organization Subcommittee of the group is working to more clearly define the decision-making process.

The estimated annual budget of the group (including the value of in-kind services) is less than \$20,000. Major providers of funding and in-kind services include National Park Service funding used for occasional mailings, and staff assistance on organizing upper watershed hikes and tours; New Mexico Environment Department support used for training and purchasing equipment for river quality monitoring; City and County of Santa Fe funds used for occasional mailings, assistance with the river tour, and active participation/support; and Thaw Charitable Trust support used for workshops and river tours.

Accomplishments and Ongoing Activities

The group has completed the following activities: two workshops to develop the mission, goals, and action plan of the group; and a comment on a Clean Water Act 404 permit application. In addition, the group has planned or is in the process of completing the following activities: stream quality monitoring done by volunteers trained by the New Mexico Environment Department; on-the-ground remediation or restoration activities related to the suppression of exotics and the planting of native willows at several points along the river; publication of a brochure outlining the group's progress; and the development of a project supporting agriculture in the watershed. The group is most proud of its River Tour, which included widespread agency, elected official, and citizen participation and increased group momentum.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. In addition, the group believes that there is much wider recognition of the systematic nature of the watershed problems. Areas of strength of this watershed initiative

appear to be the well-attended and efficiently run meetings, and the helpfulness of state and local agencies. Areas of potential weakness include the inadequacy of funding to meet short-term goals, the lack of bylaws and a more organized structure, and the relative unhelpfulness of federal agencies.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, on-the-ground modification of the physical landscape, the generation of increased public awareness of the resource or resource problem(s), a substantial modification of land-use practices, and voluntary behavioral and/or ideological changes by local resource users and groups. The group listed the following keys to success: (1) concerned citizens pressuring elected officials, (2) familiarity with the toolkit of approaches to dealing with the problem, and (3) money to maintain the momentum beyond mere volunteer help.

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Chapter 12

Forestry Partnerships

Introduction

Watershed initiatives are part of a much larger network of community-oriented and collaborative problem-solving groups currently active in the West and elsewhere. One particularly vibrant member of the community-based conservation movement is forestry partnerships. In many regions of the West, the activities of forestry partnerships and watershed initiatives overlap, not a surprising finding given the presence of forested lands in many western watersheds and the close relationship between forest management practices and watershed protection.

This chapter provides a brief introduction and overview of forestry partnerships. Closely following the structure used in Chapters 5 through 11, brief case studies are provided of seven forestry partnerships from across the West—including Hawaii. This listing of case studies is preceded by a discussion of organizations active in the community forestry movement. These sources should be contacted for a more detailed description and analysis of forestry partnerships.

Networks and Information Sources

National Network of Forest Practitioners (NNFP)

An important characteristic of the community forestry movement is the relatively well-developed networks of information exchange and coordination.¹⁷³ One example is the National Network of Forest Practitioners (NNFP), created in 1990 as a forum for forest practitioners to share ideas, acquire and provide technical assistance, and gather momentum for rural change.¹⁷⁴ Many of the “practitioners” emerged in rural communities which had traditionally relied on neighboring forests for their economic and cultural well-being. Many of these individuals represent forestry partnerships like those described in this chapter, but also include representatives of local non-profits, small businesses, and “one person crusades” for sustainable

¹⁷³ Material for this section has been gathered and excerpted by Kathryn Mutz of the Natural Resources Law Center, utilizing (with permission) a variety of newsletters and internal documents of the organizations described. All materials are on file with the Natural Resources Law Center.

¹⁷⁴ The mission of the NNFP is to “promote the well-being of rural communities and forests by supporting individuals and organizations engaged in nurturing sustainable, reciprocal relationships between forests and people.”

communities. Today, the NNFP boasts over 200 members in 38 states engaged in a wide variety of enterprises in forest-dependent communities including eco-tourism, non-timber forest products, watershed restoration, and value-added wood manufacturing.¹⁷⁵ The organization is supported by foundation grants, government grants, and membership dues.

The uniqueness and strength of the NNFP is that it includes not only local practitioners, but regional and national environmental and rural development representatives, along with researchers, facilitators and mediators, representatives of land management agencies, and employees of all levels of government. Network members benefit from a newsletter, policy-oriented e-mail bulletins, a membership directory, and an annual meeting that provides both technical assistance and allows members to build relationships with policy makers, researchers and agency representatives. Recently the NNFP has been expanding its ability to work effectively at the regional level in partnership with regional groups such as the Appalachian Network and the Collaborative Learning Circle (California).

The network is an umbrella organization working to coordinate research and disseminate information to practitioners. In the policy arena, the NNFP is tracking issues of common interest and informing and mobilizing its members with the goal of contributing to the creation of rural development policy. To date, this work has been done primarily through the cooperation of its D.C. based members, such as the Pinchot Institute for Conservation, American Forests, and the National Association of State Foresters. Technical assistance to members has included week-long training sessions in Washington D.C. on participation in the federal budget and appropriations processes.

Communities Committee (CC)

The Communities Committee of the Seventh American Forest Congress (CC) is another major communications link and voice for forestry partnerships. The CC is a diverse group of approximately 200 people who believe local stewardship of natural resources is critical to both forest health and community well-being.¹⁷⁶ The CC grew out of the Seventh American Forest Congress, a 1996 gathering of about 1,500 individuals convened to set the direction for forestry in the next two decades. The CC includes urban foresters, environmental activists, private forest landowners, civil servants, timber workers, professional foresters, forest industry representatives, academics and researchers—many of whom are the leaders of forestry partnerships described in this chapter.¹⁷⁷ The CC is supported primarily through foundation funding with significant “in-kind” contributions by the members.

¹⁷⁵ The NNFP has two offices: Headquarters can be contacted at PO Box 519, Santa Fe, NM 87504; 505-955-0000; forestrust@igc.apc.org. The Northeast Regional Office is at: 29 Temple Place, 2nd Floor, Boston MA 02111; 617-338-7821; tbrendler@igc.apc.org. The NNFP website can be found at www.nnfp.org.

¹⁷⁶ The CC can be contacted through its co-chairs: Lynn Jungwirth of The Watershed Center, Box 356, Hayfork, CA 96041; 916-628-4206, lynnj@tcoe.trinity.k12.ca.us; and Carol Daly of the Flathead Economic Policy Center, 15 Depot Park, Kalispell, MT 59901; 406-892-8155; cdaly@digisys.net.

¹⁷⁷ The mission of the Communities Committee is defined as follows: “[T]o focus attention on the interdependence of America’s forest and the vitality of rural and urban communities and to promote: Improvements in political and economic structures to insure local community well-being and the long-term sustainability of forested ecosystems. An increasing stewardship role of local communities in the maintenance and

Most of the work of the CC is done through its main task groups (Research, Communications, Policy, and Urban-Rural Linkages) coordinated by a Steering Committee and Executive Committee. The Research Task Group will soon produce a collection of case studies of community forestry entitled: *Forest Communities, Community Forests*.¹⁷⁸ The Communications Task Group produces a quarterly newsletter, *Communities and Forests*, and is developing two Internet listservs to facilitate communications among members and the broader community of interest.¹⁷⁹ The Policy Task Group follows a wide variety of forest policy issues, primarily through Task Group members with the Society of American Foresters, Pinchot Institute for Conservation, and American Forests. Among its many activities, the Policy Task Group has conducted stewardship field tours in California and Montana for Congressional staff; helped its members formulate comments on stewardship contracting pilot projects, Forest Service planning regulations, and other national issues; and provided guidance to members through a series of "Quick Guides" for community forest activists.¹⁸⁰ The Urban-Rural Linkages Task Group is working primarily in the Puget Sound and Chesapeake Bay areas to increase awareness of linkages between urban and rural communities. Work in these areas includes educational activities, land work, and skills training.

Four Corners Sustainable Forests Partnership

The Four Corners Sustainable Forests Partnership is a different type of entity working with forestry partnerships. The Partnership was launched with an earmark of \$500,000 in the 1999 U.S. Forest Service congressional appropriation and continues to grow with \$1 million channeled through the U.S. Forest Service Economic Action Program for 2000.¹⁸¹ The

restoration of ecosystem integrity and biodiversity. Participation by ethnically and socially diverse members of urban and rural communities in decision-making and sharing benefits of forests. The innovation and use of collaborative processes, tools, and technologies. Recognition of rights and responsibilities of diverse forest landowners."

¹⁷⁸ This collection, edited by Jonathan Kusel and Elisa Adler of Forest Community Research, should be available by fall of 2000. To determine availability of the publication, contact Jonathan Kusel, Forest Community Research, PO Box 11, Taylorsville, CA 95983; 530-284-1022; Kusel@FCResearch.org.

¹⁷⁹ COMMUNITY FORESTRY NEWS will be a low-traffic listserv, intended only for policy news updates, notices of upcoming events, job postings, and the like. To subscribe to COMMUNITY FORESTRY NEWS, send the following email message to LISTSERV@LISTSERV.ARIZONA.EDU: SUBSCRIBE CFNEWS Firstname Lastname (where "Firstname Lastname" is your full name).

COMMUNITY FORESTRY FORUM will be a dialogue forum, intended for discussion of community forestry issues. For appropriate discussion topics, see the mission statement of the Communities Committee of the Seventh American Forest Congress, posted below. To subscribe to COMMUNITY FORESTRY FORUM, send the following email message to LISTSERV@LISTSERV.ARIZONA.EDU: SUBSCRIBE CFFORUM Firstname Lastname (where "Firstname Lastname" is your full name).

¹⁸⁰ *Quick Guide: The Federal Appropriations Process*; *Quick Guide: Understanding the Federal Budget Process*; and, *Quick Guide: Media Strategies for Community Practitioners* are available from: American Forests, PO Box 2000, Washington, DC 20013.

¹⁸¹ Another congressional appropriation in 1999 authorized the US Forest Service to enter into 28 "stewardship end result contracting demonstration projects" designed to test a variety of new authorities, which would provide the agency with more flexibility to address forest health needs along with the needs of local communities. Previously, the Forest Service was limited to contracting for the extraction of only valuable timber products from the forests. This left the Forest Service with a lack of an ability to consider the non-commercial needs of the

Partnership's aim is to encourage forest restoration, maintenance, and risk reduction through sustainable, community-based forest enterprises. Participants in the Partnership include county commissioners, tribal organizations, forest products associations, environmental coalitions, public land managers, state foresters, and other local, state, and federal representatives from the Four Corners region of New Mexico, Colorado, Utah, and Arizona.¹⁸²

Partnership activities focus on merging environmental and economic concerns by identifying the link between production and marketing of higher value forest products and ecosystem needs. The majority of Partnership funding goes to a Forest Restoration Demonstration Program designed to demonstrate and implement creative, community-based solutions to the forest restoration and economic sustainability needs of the Four Corners region. The Partnership held a regional Roundtable in August of 1999 to create a new vision for restoring the Southwest's forests to more natural conditions. With help from nearly 300 participants, the Partnership has developed an action agenda to address its mission. Major action areas include a continuation of the forest restoration demonstration program; development of public information/social awareness materials; support of a forest restoration science conference and dialogue; development of a monitoring protocol for restoration forestry projects; provision of technical assistance on value-added use of restoration by-products to community-based enterprises; and a focus on policy issues, such as administrative barriers to stewardship contracting, to build legislative support for sustainable forests and ecosystems.

Organizations Providing Policy Support

Three organizations provide the majority of policy support for forestry partnerships. They are the Pinchot Institute for Conservation, American Forests, and the Society of American Foresters.

forest. The land management objectives of these pilot projects are to address non-commercial forest issues, such as road maintenance, habitat protection and restoration, proscribed burns, non-commercial tree harvesting to reduce fuel loadings, watershed restoration, and the control of noxious weeds. Two of the overriding goals of this project are (1) "to demonstrate the role that ecosystem restoration maintenance, and protection activities play in helping to sustain rural communities, and (2) to demonstrate the advantages of improved communication and joint problem solving among stakeholders concerned with restoring the diversity and productivity of the forested watershed" (*See Stewardship Contracting Pilot Projects*, 64 Fed. Reg. 37096, July 9, 1999). As required in the legislation, the monitoring and evaluation of these projects will be undertaken by multiple stakeholders in the respective areas. This program is considered a significant step toward integrating community concerns into the forest management actions of the Forest Service. At the conclusion of these pilot projects, Congress will consider whether any or all of the tested authorities should become a permanent part of the Forest Service's management authority.

¹⁸² The Partnership can be contacted through: Judy Kowalski; New Mexico Energy, Minerals and Natural Resources Department, Forestry Division; P.O. Box 1948; Santa Fe, NM 87504-1948; 505-827-7474; jkowalski@state.nm.us.

Pinchot Institute for Conservation

The Pinchot Institute for Conservation (Pinchot) is an independent non-profit organization dedicated to leadership in forest conservation.¹⁸³ Pinchot was established in 1963 to facilitate communication and closer cooperation among resource managers, scientists, policy makers, and the American public. It continues Gifford Pinchot's legacy of conservation leadership as a center for policy development in support of sustainable forest management.

Pinchot provides three types of services for forestry partnerships and others: policy research and analysis, convening and facilitation, and leadership development. Its current program areas focus on institutional and policy changes to implement sustainable forest management, forest stewardship and sustainable rural development, and developing collaborative models of conservation leadership. Recent activities in support of these program areas include a series of regional workshops, a guidebook for forest practitioners on current Forest Service authorities for land stewardship contracting mechanisms, and a legislative training session for NNFP members focused on the appropriations process.

American Forests

American Forests is the nation's oldest citizen conservation organization.¹⁸⁴ Since 1875, its goal has been to ensure a sustainable future for the nation's forests. The organization has a variety of programs including its Forest Policy Center. The Forest Policy Center was originally established in 1991 to provide objective, science-based information on emerging forest policy issues. Recently, it has developed a strategic focus on Community Based Ecosystem Management, returning to the organization's historical roots as a citizens conservation group. The activities of American Forests and its Forest Policy Center are supported by membership contributions and a wide array of other funding sources, including charitable foundations, corporate-giving programs, and cooperative agreements with federal and state agencies.

The mission of the Forest Policy Center is to help build the capacity of citizens to participate in forest policy issues and implement ecosystem restoration and maintenance projects. The Forest Policy Center works in partnership with community-based groups to create stronger links among local, regional, and national initiatives and to help bring the key policy and management issues of local groups to the national policy arena. Recognizing the interdependence of communities and forests, its community-based ecosystem management program helps people sustain the health of forest ecosystems while maintaining the vitality of local communities. Forest Policy Center initiatives focus on the growing interest in using collaborative processes and partnerships to overcome resource conflicts and promote cooperative approaches to forest management.

¹⁸³ Information on Pinchot has been excerpted from the National Network of Forest Practitioners 1998-99 Directory. For additional information, contact: Mary Mitsos; Pinchot Institute for Conservation; 1616 P Street, NW; Washington, DC 20036; 202-797-6582; mmitos@compuserve.com.

¹⁸⁴ Information on American Forests is derived from their website at www.americanforests.org/fpc/. For more information contact: Maia Enzer, Director of Forest Policy; American Forests; PO Box 2000; Washington, DC 20013; menzer@amfor.org.

The Forest Policy Center fulfills its mission through workshops, symposia, round tables, field tours, and reports. For example, a new book, *Public Programs for Private Forestry* (Sampson and DeCoster, 1997), uncovered disturbing trends in forest fragmentation that threaten efforts toward sustainable land management. The Winter 1998 issue of *American Forests* magazine served as a primer on community-based forestry. A workshop on Community Based Ecosystem Management (CBEM), which brought together diverse participants from across the continental United States, was held in mid-1998. The culmination of this workshop is the publication of collaborative papers on CBEM issues.¹⁸⁵

Society of American Foresters (SAF)

The third organization providing policy support to forestry partnerships is the Society of American Foresters (SAF), a national scientific and educational organization representing the forestry profession in the United States.¹⁸⁶ Founded in 1900 by Gifford Pinchot, it is the largest professional society for foresters in the world. The mission of the SAF is to advance the science, education, technology, and practice of forestry; to enhance the competency of its members; to establish professional excellence; and, to use the knowledge, skills, and conservation ethic of the profession to ensure the continued health and use of forest ecosystems and the present and future availability of forest resources to benefit society. SAF members include natural resource professionals in public and private settings, researchers, CEOs, administrators, educators, and students.

SAF maintains a Forest Policy Department which provides relevant science-based information to policy-makers at the national and local level in order to help develop national policies regarding the country's renewable natural resources. Staff of the Forest Policy Department provide support to forestry partnerships by working through national committees such as the Communities Committee of the Seventh American Forest Congress' Policy Task Group and providing policy updates through the CC listserves.

Case Studies

The following pages contain seven brief case studies of forestry partnerships. For additional listings or for analysis, contact the networks and information sources described above, or contact the forestry partnerships listed below.

¹⁸⁵ Look for *Understanding Community-Based Forest Ecosystem Management* in 2001 from Haworth Press (New York), by G.J. Gray, M.J. Enzer, and J. Kusel. This information is also available in the *Journal of Sustainable Forestry*, Volume 12, Issues 3 and 4.

¹⁸⁶ Information on the Society of American Forests is derived from the organization's website at www.saf.org/policy/. For more information contact: Michael Goergen, Director; Policy Department; Society of American Foresters; goergen@safnet.org.

Catron County Citizens Group

Focus of the Forestry Partnership

The Catron County Citizens Group is located in western New Mexico. The focus of the group is on the entire county, an area covering approximately 7,000 square miles. The county includes mountainous forested and rangeland, three-fourths of which is managed by the US Forest Service and the US Bureau of Land Management. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in rural areas. The largest city in the region is Reserve, with a population of approximately 500. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, agriculture and/or ranching, and mineral and/or energy production. The economy relies on natural resource industries located on public lands.

The Catron County Citizens Group was formed in 1995 in response to a high level of stress in the community related to natural resource issues. Establishment of the group was primarily the result of the efforts of the New Mexico Center for Dispute Resolution, Western Network, and the University of New Mexico School of Medicine. Since its formation, the group has been mostly concerned with issues of water quality, the maintenance of fish and wildlife and/or endangered species, land-use management, and community economic stability/growth.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate federal and state agency coordination, inadequate funding/attention being given to the natural resource problem, ineffective management programs or laws such as the Endangered Species Act, and the lack of local influence in resource management. The mission/vision statement of the group is "to serve as a forum to enable people with different views to openly and honestly discuss issues that concern our community; to find common ground in order to take action on projects that ensure an economic, social, and environmentally sound future." Specific short-term goals include: (1) reduce stress within the community, (2) stabilize the economy, and (3) act as stewards of the land.

Structure and Functioning of the Forestry Partnership

The group includes members from: the US Forest Service, Bureau of Land Management, Fish and Wildlife Service, the New Mexico Surface Water Quality Bureau, the New Mexico Engineering Department, the New Mexico Game and Fish Department, the local village and county governments, the Center for Biological Diversity, the Jornada Range Experiment Station, other organizations, and several citizens. Membership is open to all interested parties. The group is directed by a coordinator and facilitator, originally paid for by the Surona Foundation and the Beldon Fund. The group utilizes subcommittees, including a Steering Committee and two Watershed Committees focusing on Forest Health on Rangeland issues. The group has an office, located in the home of the coordinator. Meetings are held monthly. Issues are brought before the group by members. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is between \$20,000 to \$75,000. Major providers of funding and in-kind services include the federal Rural Economic Development Program, used to perform feasibility studies for the utilization of small-diameter forest products. Current assistance for ongoing activities comes from the Four Corners Sustainable Forests Partnership, the New Mexico Health Department, the New Mexico Community Foundation, the Tides Foundation, and Black Range Resource Conservation and Development, Inc.

Accomplishments and Ongoing Activities

The group has completed a community problem-solving conference and a county-wide community visioning process. The group assisted the US Forest Service in completing the NEPA process for the Apache Forest Health Project and Cedar Banks Watershed Improvement Project. The group has prepared a 22-page strategic plan outlining the steps to restoring the local forest and building a small-diameter forest products industry that will service the restorative needs of the forest. The group also distributes a newsletter (*Catron County Citizen*) to more than 230 individuals, families and agencies representing many of the interests of the citizens of Catron County.

The group is working on many additional projects, which it hopes will reduce the stress within the community by creating economic stability and promoting good stewardship of the land. The group is currently working on the creation of a Business Incubation Center and Log Sort-yard, which will assist local wood users in producing value-added products, promote vertical integration of wood uses, and create additional jobs for the residents of the county. The group is currently designing an Apprenticeship in Training Program for youths, young adults, and community members of low-income. This program will assist the targeted groups with continuing education, technical and trade skills, and job placement in the emerging small-diameter forest products industry.

The group strives to integrate science with rangeland management, not as dictator, but as server to local practices. Through scientific monitoring and documentation, good stewardship of the land can be recognized, supported and defended; high quality stewardship can be advised. For example, the group is assisting the Reserve Ranger District of the Gila National Forest to move forward with forest health projects such as the Sheep Basin Watershed Improvement Project located within the 120,000 acre Negrito Ecosystem Analysis Area. In addition, the group is interfacing with the U.S. Forest Service and the U.S. Fish and Wildlife Service to establish the Black Bob Demonstration Project. The Black Bob includes a riparian area that contains the endangered Loach minnow and is designated as critical habitat for the southwest willow flycatcher. The group is exploring the opportunity of establishing a Community Grass Bank to be used in coordination with forest health and watershed improvement projects.

The group also is assisting in distributing information and fostering communication about the Mexican Grey Wolf Reintroduction Program in Catron County. The program has become

highly controversial. There are members of the group that are very much in favor of the program and those who are adamantly opposed.

Areas of strength of this group appear to be the size, composition, and organizational structure; and the perceived adequacy of the decision-making process. The group has forged commitments with federal, state, and local agencies to push its agenda forward. The group listed the following keys to success: (1) groups need to work within a good process, (2) dialogue needs to focus on finding common ground, and (3) work towards solutions and not just dialogue.

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Grand Canyon Forest Partnership

Focus of the Forestry Partnership

The Grand Canyon Forest Partnership is located in northern Arizona. The focus of the group is on the ponderosa pine, mixed conifer forests around Flagstaff, Arizona, an area covering approximately 100,000 acres spread over one county. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in mostly cities/towns. The largest city in the region is Flagstaff, with a population of approximately 60,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture, and mineral and/or energy production.

The Grand Canyon Forest Partnership was formed in 1996, in response to the risk of a catastrophic wildfire. Establishment of the group was primarily the result of the efforts of the Grand Canyon Forest Foundation, with additional assistance from the US Forest Service, the US Fish and Wildlife Service, the Arizona Departments of Lands and Game and Fish, Coconino County, and the city of Flagstaff. Since its formation, the group has been mostly concerned with issues of water quality related to sediment, water supply/flow regimes related to the risk of floods, land-use management issues related to forest thinning and restoration, and community economic stability/growth in the forest industry.

From an “institutional” (or administrative) standpoint, the group is concerned with transboundary impacts, and the lack of a market for small diameter trees. The mission/vision statement of the group is to “demonstrate management approaches that improve and restore ecosystem health of ponderosa pine forests in the Flagstaff wildland-urban interface.” Specific short-term goals include: (1) reducing the risk of catastrophic wildfire, (2) restoring forest health, and (3) facilitating economically viable forest management.

Structure and Functioning of the Forestry Partnership

The group includes members from: the US Forest Service, Fish and Wildlife Service, National Park Service, the US Geological Survey, the Arizona Departments of Lands and Game and Fish, Coconino County, the city of Flagstaff, the Grand Canyon Trust, the Nature Conservancy, Arizona Public Service, Northern Arizona University School of Forestry and College of Engineering, and the Chamber of Commerce. Membership is open to all interested parties, although formal partner status is limited. The group is directed by a Board of Directors and run by a coordinator and facilitator. The group utilizes subcommittees, including a Partnership Advisory Board, and a Research Advisory Committee. The group has an office. Meetings are held weekly and monthly. Issues are brought before the group by members. The group utilizes a formal decision-making process that is largely ad hoc and unspecified, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the US Forest Service for research and land management planning and implementation; the Arizona Departments of Lands and Fish and Game for coordination and program planning; and the Grand Canyon Forest Foundation for program coordination, facilitation and implementation.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, traditional forestry activities, and other educational activities. The group is most proud of the forest management and restoration plans for Flagstaff’s wildland-urban interface.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by the fact that most participants believe the problem is being addressed at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this forestry partnership appear to be the size, composition, and organizational structure of the group; and the perceived adequacy of the decision-making process. The meetings are well-attended and efficiently run; the funding is adequate to meet short-term goals; and federal, state, and local agencies have been very helpful.

The group considers the following actions to be essential to their continued problem-solving effort: a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, modified operation of existing facilities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problems. The group listed the following keys to success: (1) partnership approach, (2) science-based, and (3) public awareness and support.

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Hawaii Forestry and Communities Initiative

Focus of the Forestry Partnership

The Hawaii Forestry and Communities Initiative is focused on the entire state of Hawaii. Hawaii includes 11 of the world's 13 designated climatic zones, from ocean to 14,000 feet mountains, from tropical rainforests to near deserts. The population of the focus area exceeds 1,000,000, with the majority of the population distributed in mostly cities/towns. The largest city in the region is Honolulu, with a population of approximately 900,000. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The Hawaii Forestry and Communities Initiative was formed in 1997 in response to a desire to diversify the economy while protecting natural resources. Establishment of the group was primarily the result of the efforts of state government, with additional assistance from federal agencies and the Hawaii Forest Industries Association. Since its formation, the group has been mostly concerned with the following issues: maintaining the island's watersheds, addressing endangered species issues, developing a strong forest industry, minimizing the loss of forests lands to other uses, and maintaining jobs and the rural quality of life.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, involving communities in natural

resources management, inadequate funding/attention being given to a natural resource problem, and ineffective management programs or laws. Specific short-term goals include: (1) creating an infrastructure for sharing knowledge, (2) identifying natural resources via an inventory, and (3) assisting existing forest-based businesses via training and marketing efforts.

Structure and Functioning of the Forestry Partnership

The group includes members from: the US Forest Service, Natural Resources Conservation Service, Environmental Protection Agency, one or more Native Hawaiian Homelands and Communities, several state agencies, one or more local agencies, one or more water district/organizations, one or more environmental groups, one or more non-governmental organization, and one or more academics or citizens. Membership is open to all interested parties. The group is directed by a coordinator. The group utilizes subcommittees, including a Working Group, and committees for specific projects. Meetings are held monthly. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include federal and state agencies and other sources.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans for several Homestead areas, shared decision-making/negotiated problem-solving, an inventory of the state's forest resources, scientific research on native trees, legal or policy research on state law, on-the-ground community demonstration projects in the forests, publication of a monthly and quarterly newsletter, an annual forestry symposium and technical workshops, a sustainable timber sale to assist local businesses, and other educational activities in local colleges. The group is most proud of involving the public and leveraging the resources of many partners.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this forestry partnership appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings, and funding adequate to meet short-term goals. State agencies have been moderately helpful, local agencies have been slightly helpful, and federal agencies have been very helpful.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a

fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problem(s). The group listed the following keys to success: (1) networking, (2) listening, and (3) learning.

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Ponderosa Pine Forest Partnership

Focus of the Forestry Partnership

The Ponderosa Pine Forest Partnership works primarily in southwestern Colorado. The focus of the group is on the Four Corners area in general, which covers approximately 250,000 acres. The focus area consists of ponderosa pine with gamble oak understory, underlain by Dakota sandstone. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural and cities/towns. The largest city in the region is Durango, with a population of approximately 15,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, agriculture and/or ranching, and mineral and/or energy development.

The Ponderosa Pine Forest Partnership was formed in 1993 in response to a conflict over forest management related to a reduction in the allowable sale quantity and forest health. Establishment of the group was primarily the result of the efforts of federal agencies, local government, and the Colorado Timber Industry Association. Since its formation, the group has been mostly concerned with issues of the maintenance of fish and wildlife and/or endangered species, land-use management, and community economic growth/stability.

From an "institutional" (or administrative) standpoint, the group is also concerned with inadequate interagency or interjurisdictional coordination, transboundary impacts, lack of local involvement in resource management, and most importantly, ineffective management programs or laws. The mission/vision statement of the group is not formalized but generally is to encourage sustainability by linking the community, ecology, and economy. Specific short-term goals include: (1) integrating research findings into the US Forest Service timber program, (2)

keeping industry alive while moving toward sustainability, and (3) encouraging attention to cross-jurisdictional boundaries to complete forest restoration.

Structure and Functioning of the Forestry Partnership

The group includes members from: the US Bureau of Land Management, Colorado Division of Wildlife, Colorado State Forest Service, Montezuma County, Archuleta County, La Plata County, San Juan Citizens Alliance, Colorado Timber Industry Association, and Ft. Lewis College. Membership is open to all interested parties. The group is directed by a coordinator and facilitator, funded by multiple sources. The group has an office, located in the county courthouse. Meetings are held as needed. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process that is largely ad hoc and unspecified.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the US Forest Service, the Colorado State Forest Service, the local county, and private foundations.

Accomplishments and Ongoing Activities

The group has completed or is in the process of completing the following activities: shared decision-making/negotiated problem-solving, resource monitoring, scientific research, legal or policy research, on-the-ground remediation or restoration activities, publication of newsletters and/or brochures, conferences/workshops, traditional forestry activities, and other educational activities. The group is most proud of demonstration projects and breakthroughs in US Forest Service pricing policies.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved at a level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this forestry partnership appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and funding adequate to meet short-term goals. Federal, state and local agencies have been very helpful.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, and the generation of increased public awareness of the resource or resource problems. The group listed the following keys to success: (1) having a tangible problem, (2) engaging all stakeholders, and (3) implementing on-the-ground actions.

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Quincy Library Group

Focus of the Forestry Partnership

The Quincy Library Group is located in northern California. The focus of the group is on the national forest lands in the northern Sierra Nevada Mountains, an area covering approximately 2,500,000 acres spread over eight counties. The vegetation consists of extensive montane meadows and mixed conifer, fir, and pine forests in the Feather River watershed above Oroville dam. The elevation in the focus area ranges from 1,000 to 9,000 feet, covering a variety of geologic types. The population of the focus area falls within the range of 25,000 to 100,000, with the majority of the population distributed in an equal mix between rural areas and cities/towns. The largest city in the region is Susanville, with a population of approximately 20,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, and tourism and/or recreation. The topographic and geographic isolation from other regions contributes to the internal cohesiveness of the community.

The Quincy Library Group was formed in 1993 in response to the decline of the traditional timber sale program and in anticipation of more reductions due to the California Spotted Owl habitat restrictions. Establishment of the group was primarily the result of the efforts of the Friends of Plumas Wilderness, Sierra Pacific Industries, and Collins Pine Company. Since its formation, the group has been mostly concerned with (1) restoring hydrologic function and observing the effects of vegetation management on flow timing, (2) issues of water quality related to Gold Rush Era mining impacts, (3) minimizing the need for (and indirect impacts of) Endangered Species Act listings such as the spring-run Chinook salmon and potentially the California Spotted Owl, (4) national forest timber and vegetation management especially as related to community economic stability/growth, and (5) wildfire and forest fuel management.

From an "institutional" (or administrative) standpoint, the group is also concerned with: inadequate coordination between state and federal forest fire fighting agencies; inadequate funding/attention being given to forest health, fuel management, and forest planning and monitoring; and ineffective management programs or laws related to the Forest Service's downsizing in staff and programs. The mission/vision statement of the group is to have "Healthy Forests and Stable Communities." Specific short-term goals include: (1) planning

and implementing a strategic fuels management program, (2) including the previous goal in forest plan revisions and amendments, and (3) implementing watershed restoration projects.

Structure and Functioning of the Forestry Partnership

The Quincy Library Group is intended to be a public forum where a broad spectrum of citizens/stakeholders can positively influence the ability of government agencies to do their statutory jobs. Membership, which carries with it voting privileges, is limited to individuals who have signed onto the Community Stability Proposal developed in 1993 and who are approved by the Steering Committee. There are approximately 40 official members of the group at this time. However, all interested parties may participate in the group's open meetings without voting. The group includes participants from: the US Forest Service, the Maidu Indian Tribe (occasionally), the California Departments of Forestry & Fire Protection and Water Resources, University of California Cooperative Extension, Plumas County, Lassen County, Sierra County, American Valley Resource Conservation District, the Friends of Plumas Wilderness, Quincy Women in Timber, Deer Creek Conservancy, graduate students, citizens interested in conflict resolution, timber and biomass companies, loggers, and cattle ranchers.

The group is coordinated by a variety of members and meeting arrangements. The group utilizes subcommittees, including Implementation, Monitoring, and Biofuels. Meetings are held monthly. Issues are brought before the group by members and non-members. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The estimated annual budget of the group (including the value of in-kind services) is more than \$75,000 (the highest category in our survey). Major providers of funding and in-kind services include the Department of Energy National Renewable Energy Laboratory for use in a biofuels pilot project, the US Forest Service for use in fire surrogate ecological studies, the California Energy Commission for use in the forest biomass ethanol feasibility study and the ethanol pilot project, local county governments used for administrative costs and general support, and foundations for use in the monitoring programs and collaborative problem-solving.

Accomplishments and Ongoing Activities

The Quincy Library Group is very active. The group developed a management plan for the local US Forest Service lands and proposed it as a forest plan alternative. The group collaborated with the US Forest Service, the Feather River Coordinated Resource Management group, and the Lead Partnership groups to develop protocols for sampling. The group is also cooperating with the US Forest Service and the Oak Ridge National Lab on ecological studies of the effects of vegetation management on soil, water, fires, and forest structure. Additionally, the group co-sponsored the Western Biomass Consortium meetings and a meeting of national interest group leaders to discuss local efforts and stakeholder common ground. Several group members have been featured speakers at outside events. The group is most proud of (a) facilitating a relatively smooth restructuring of the local timber industry while minimizing

social and economic disruptions, and (b) fashioning multiple solutions to multiple problems in a multi-disciplinary manner. In addition, the group takes pride in the fact that preliminary results from monitoring efforts confirm that the group's focus on fuel reduction treatments are reducing fire hazards without reducing habitat quality for the California Spotted Owl.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being solved. Areas of strength of this forestry partnership appear to be the size, composition, and organizational structure of the group; the perceived adequacy of the decision-making process; well-attended and efficiently run meetings; and the adequacy of funding to meet short-term goals. Local, state, and federal agencies are viewed as being slightly helpful. Like many community-based initiatives, the ultimate success of the Quincy Library Group's efforts is dependent upon the performance of a large federal bureaucracy that has its own political, cultural, and budgetary priorities.

The group considers the following actions to be essential to their continued problem-solving effort: a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, on-the-ground modification of the physical landscape, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problems. The group listed the following keys to success: (1) practicing "trust but verify," (2) focus on understanding and satisfying interests rather than positions, and (3) playing fair.

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Swan Valley Ad Hoc Group

Focus of the Forestry Partnership

The Swan Valley Ad Hoc Group works in northwestern Montana. The focus of the group is on the the upper Swan River valley and its immediate environs, an area covering approximately 750 square miles spread over two counties. The focus area consists of a forested mountain valley between two wilderness areas with checkerboard ownership of federal forest lands, corporate industrial timber land, state lands, and small private ownership. The population of

the focus area is less than 1,000. The local economy is moderate in strength and moderately diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The Swan Valley Ad Hoc Group has existed informally since the late 1980s and was formalized in 1990 in response to growing hostilities within the community related to the environmental decline caused by large scale resource conversion on corporate lands. Establishment of the group was primarily the result of the efforts of concerned citizens. Since its formation, the group has been mostly concerned with issues of watershed integrity in general, maintenance of indigenous fish and wildlife (including endangered species), implementing functional ecosystem-based management in mixed ownership areas, economic diversification, and general environmental degradation.

From an "institutional" (or administrative) standpoint, the group is also concerned with the lack of coordination with corporate landowners, the transboundary impacts of corporations selling off high value lands, inadequate funding/attention being given to the problem compounded by federal agency budget cuts, lack of local involvement in resource management, and ineffective management programs or laws that are unable to deal with site specific complexities. The mission/vision statement of the group is as follows: "We envision: (1) a strong, vital community, one involved in setting its own destiny, partly through a partnership with the Forest Service that ensures that public lands and resources are managed in a sustainable way, (2) active community support for the concepts of ecosystem management which we hold to include the economic and social well being of the people as well as the health and sustainability of public lands and their resources, (3) a strong Forest Service presence in the Valley, a presence that actively supports a viable partnership with the community, in a concerted approach to sound ecosystem management, and (4) the present Forest Service Work Center, Flathead National Forest, as a nationally recognized "Center of Excellence" for demonstrating all of the benefits, and providing a model, of a Forest Service-Community partnership for ecosystem management and community sustainability." Specific short-term goals include: (1) creating a positive community dialogue, (2) increasing communication and coordination with the various stakeholders, and (3) involving the community in a pro-active manner.

Structure and Functioning of the Forestry Partnership

The group is a citizen's group. Anyone who comes to a meeting is regarded as a member. Agency representatives and others are invited and regularly attend. Meeting announcements are mailed to a long list of citizens, agency representatives, and others. The group is directed by a facilitator. Meetings are held as needed. Issues are brought before the group by concerned parties. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus. The estimated annual budget of the group (including the value of in-kind services) is less than \$1,000.

Accomplishments and Ongoing Activities

The group has planned or is in the process of completing the following activities: the development of management plans based on an upper Swan Valley landscape analysis, shared decision-making/negotiated problem-solving, short and long-term resource monitoring projects, scientific research facilitated by other stakeholders, legal or policy research on corporate land conservation strategies, land and forest stewardship projects, publication of meeting notes and subcommittee reports mailed out to the participants, conferences/workshops on the history of the group and other issues, other educational activities involving local scholars, and traditional forestry (e.g. timber sales, thinning, planting). The group is most proud of the increase in positive dialogue between stakeholders.

Overall, the group considers itself to be very to moderately successful in addressing the natural resource problems of concern, as illustrated by monitoring data showing on-the-ground improvements and by the fact that most participants believe the problem is being addressed at level/rate that is greater than that possible through other problem-solving approaches. Areas of strength of this forestry partnership appear to be the well-attended and efficiently run meetings, and the adequacy of funding to meet short-term goals. Federal, state and local agencies have been moderately helpful. Areas of potential weakness include a current lack of participation from a diverse range of stakeholders.

The group considers the following actions to be essential to their continued problem-solving effort: changes in federal or state law, a substantial modification of land-use practices, a fundamental reallocation of agency resources and priorities, voluntary behavioral and/or ideological changes by local resource users and groups, generation of additional technical data or knowledge about the resource, and the generation of increased public awareness of the resource or resource problems. The group listed the following keys to success: (1) respectful attitudes towards others with different views, (2) having thoughtful progressive people from various stakeholder groups, and (3) having some complement of participants who have an intimate understanding of the natural environment and who understand the cultural landscape as well.

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Thousand Lake Mountain Community Forestry Initiative

Focus of the Forestry Partnership

The Thousand Lake Mountain Community Forestry Initiative is located in southern Utah, adjacent to Capital Reef National Park. The focus of the group is on the Thousand Lake Mountain and the Fish Lake National Forest, an area covering approximately 150,000 acres spread over one county. The population of the focus area falls within the range of 1,000 to 5,000, with the majority of the population distributed in mostly cities/towns. The largest city in the region is Loa, with a population of approximately 2,000. The local economy is weak and not diversified. There is a significant percentage of the region's population employed in natural resource jobs, mostly in the sectors of forestry, tourism and/or recreation, and agriculture and/or ranching.

The Thousand Lake Mountain Community Forestry Initiative was formed in 1997, in response to a beetle infestation in a roadless area with a timber emphasis. Establishment of the group was primarily the result of the efforts of representatives from the Fish Lake National Forest, the Southern Utah Forest Product Association, and Confluence Associates. Since its formation, the group has been mostly concerned with issues of land-use and/or management practices related to beetle infestation and roadless areas, general environmental degradation, and community economic stability/growth.

From an "institutional" (or administrative) standpoint, the group is also concerned with lack of local involvement in resource management. The mission/vision statement of the group is as follows: "The TLM Community Forestry Initiative will be an open, inclusive and collaborative process with the expressed purpose to develop strategies that can meet the following criteria: (1) Satisfy the conditions of the conifer and aspen timber emphasis contract in the current forest management plan for the district, (2) Identify and implement the best management tool for treatment of the spruce beetle infestation in the forest, (3) Consider strategies and requirements to provide local communities in the sustainable yield and with the best forest management practices, (4) Promote continued use and enjoyment of the forest by and for non-timber purposes such as recreation, (5) Guarantee long-term management of the forest resource so as to preserve forest ecosystem health, and (6) Consider application of independent third party certification as a means to assure compliance with these values and interests in the Thousand Lake Mountain District."

Structure and Functioning of the Forestry Partnership

The group includes members from: the US Forest Service, Natural Resources Conservation Service, Congressional representatives, one or more state agencies including the State Economic Development agency, the County Commission, Southern Utah Wilderness Alliance, Wild Utah Forest Campaign, and several local citizens. Membership is open to all parties interested in the mission of the group. The group is directed by a coordinator and a facilitator, funded through grant money. Meetings are generally held bi-monthly. Issues are brought before the group by members. The group utilizes a formal decision-making process selected by the group during its initial formation, reliant upon consensus.

The Initiative has no budget. Major providers of in-kind services include the State Economic Development agency used for meeting support.

Accomplishments and Ongoing Activities

The Initiative has planned or is in the process of completing the following activities: the development of management plans, shared decision-making/negotiated problem-solving, resource monitoring, on-the-ground remediation or restoration activities, traditional forestry (e.g. timber sale, thinning, planting), and other educational activities. The group is most proud of getting the parties to talk.

Overall, the group considers itself to be moderately successful in addressing the natural resource problems of concern. Areas of strength of this forestry partnership appear to be the perceived adequacy of the decision-making process, well-attended and efficiently run meetings, and the adequacy of funding to meet short-term goals. State and local agencies have been slightly helpful; federal agencies have been very helpful. Areas of potential weakness include that the Initiative feels it could benefit from a broader environmental group participation.

The group considers the following actions to be essential to their continued problem-solving effort: voluntary behavioral and/or ideological changes by local resource users and groups, and the generation of increased public awareness of the resource or resource problems. The group listed the following keys to success: (1) developing and maintaining trust among all participants, and (2) identifying specific issues and problem areas that the group can realistically address.

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Chapter 13

A Statistical Snapshot of Western Watershed Initiatives

Introduction

Western watershed initiatives, as defined in this report, share many common qualities. As discussed in Chapter 1, the efforts included in this *Source Book* typically feature most (if not all) of the following characteristics:

- ◆ *Water Focus.* The effort is primarily concerned with a natural resource problem or management issue that prominently involves a water resource.
- ◆ *Regional Focus.* The effort is organized, at least in part, at a geographic scale defined in terms of a particular physical resource of regional interest (preferably a watershed).
- ◆ *Local Role.* The effort features the involvement, in some meaningful way, of local citizens, stakeholders, and/or governments.
- ◆ *Governmental Involvement.* The effort features the involvement of one or more governmental bodies with a role in natural resources management or regulation.
- ◆ *Collaborative Processes.* The effort features cooperative processes of group interaction and/or decision-making.

Within these basic parameters, however, it is difficult to generalize. As shown by the case studies, western watershed initiatives can vary tremendously from case to case, a quality that many believe is a strength of the movement.

In order to fully understand these efforts, it is worthwhile to have a working understanding of this variability. Data of this type is valuable for addressing a variety of questions concerning issues such as representation and involvement, budget, activities, and outcomes. Consequently, this chapter provides a summary of survey data on western watershed initiatives, beginning with the raw data utilized to craft the case studies provided in chapters 5 - 11 and 15. This data is followed by a detailed examination of watershed initiatives in Oregon, the state generally acknowledged to have the most ambitious and mature program for supporting these efforts (NRLC, 1998). In that respect, the Oregon data is certainly not representative of what currently exists elsewhere in the West, but is quite possibly a good measure of what other states can expect as their programs evolve in accordance with the Oregon model.

Data from the *Source Book* Case Studies

The case studies provided in this *Source Book* are primarily based on surveys completed by watershed initiative personnel throughout the West.¹⁸⁷ For each group, one full-length survey response was placed into a database, thereby allowing the production of descriptive statistics for that set of watershed initiatives featured herein in case studies (chapters 5 through 11).

Note that a few groups provided more than one survey response. In such cases, the response of the primary contact person (normally the coordinator/facilitator) was used in the database to tabulate statistics. Also note that many returned surveys were incomplete, and many questions allowed more than one answer. Consequently, it is recommended that readers focus on percentages and relative frequencies provided, rather than the raw numbers.

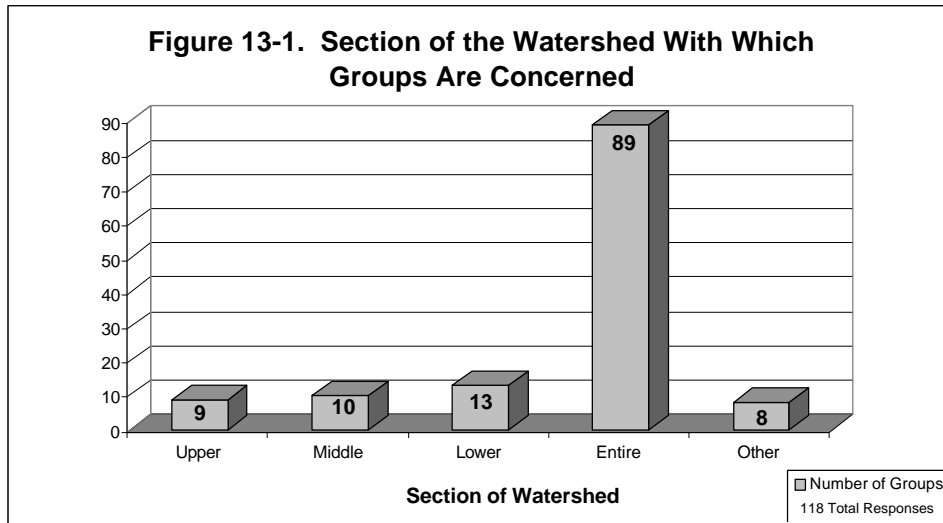
Additionally, the descriptive snapshot provided is based on the interpretations of the individuals completing the survey, rather than personnel at the Natural Resources Law Center. In approximately three-fourths of these cases, the surveys were completed by coordinators. In theory, these individuals are in the best position to comment on the basic structure and functioning of the initiatives—the bulk of the descriptive information gathered. For those questions concerning performance and outcomes, however, it is unclear if these individuals are most qualified to provide real insights. Most survey respondents cite participation in the initiative as part of their job, suggesting a strong incentive to see the group's outcomes as positive. Consequently, outcome-oriented statistics should be used cautiously.

Also remember that the statistics provided are only for those 118 groups featured in the case study write-ups in chapters 5 – 11 and 15. While we suspect that this group is generally representative of the 346 western watershed initiatives listed in the directory (Chapter 4), it is difficult to be certain. Similarly, keep in mind that 41 percent of responding groups are from the Columbia-Pacific Northwest Region, a total slightly greater than the California-South Pacific, Great Basin, South Platte-Missouri, and Rio Grande Regions combined. While this gives the statistics a decidedly Northwestern flavor, this is an accurate reflection of the western watersheds movement. Late in the chapter (in Figures 13-81 to 13-85), statistics are provided on a basin-by-basin basis to better illuminate any significant regional differences that are otherwise obscured by the sheer number of groups in the Pacific Northwest.

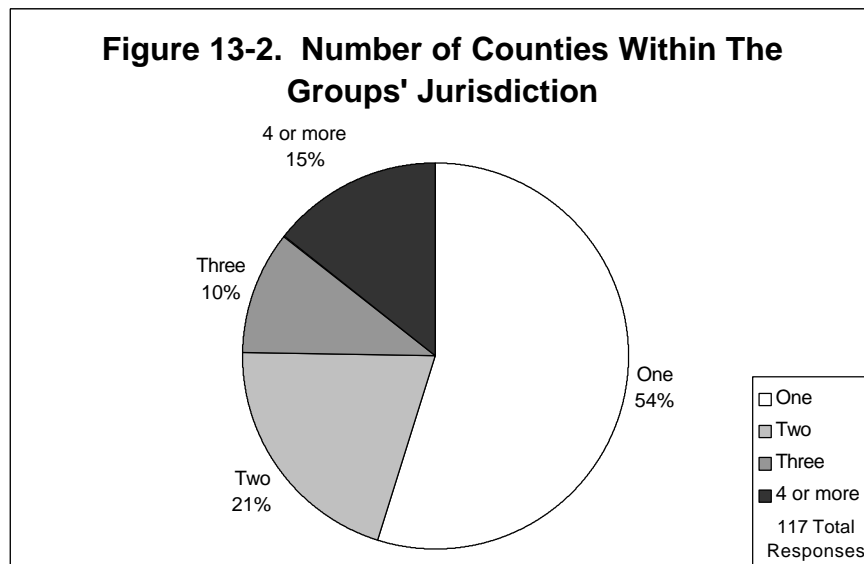
¹⁸⁷ The full text of the survey is reprinted in Appendix A, and is also available online at http://www.colorado.edu/Law/NRLC/NRLC_Watershed_survey.html.

General Characteristics of the Region of Concern

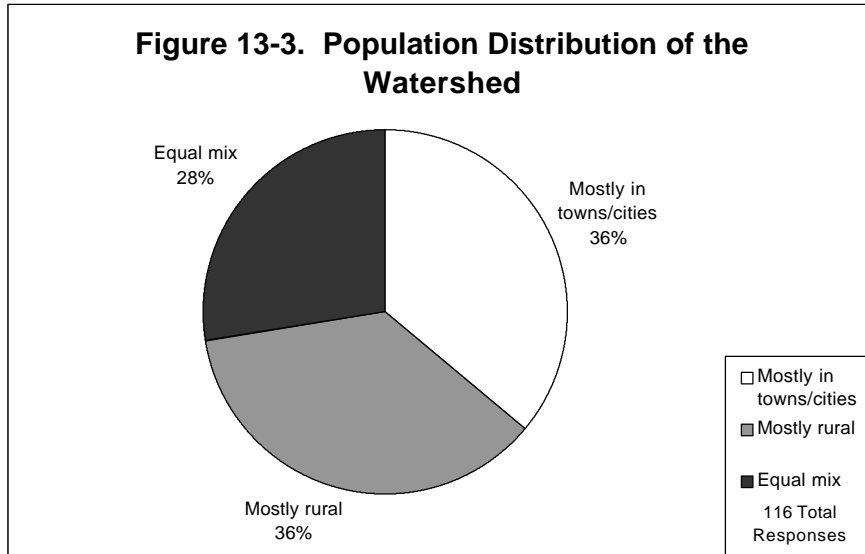
Several questions were designed to gather basic demographic information about the regions (normally watersheds) of concern to the watershed initiatives. In questions regarding the geographic scope of the effort, respondents indicated that the vast majority of the groups surveyed were concerned with the whole watershed, rather than a sub-set of the watershed:



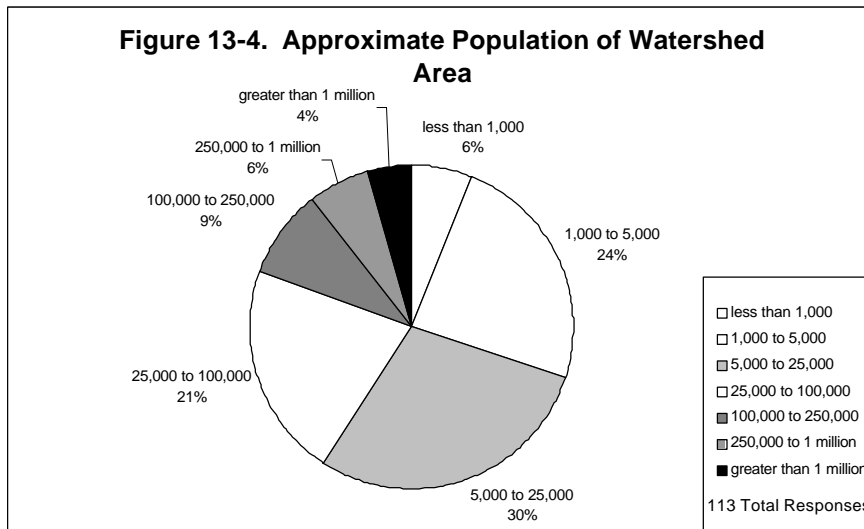
The physical size of the focus areas varied considerably, from 12 million acres in the Southwest Basin Native Fish Watershed Advisory Group (BAG) to 7.46 acres in the Redwood Creek Watershed Group. The average watershed is 937,267 acres; the median watershed is 203,988 acres (101 groups responded to the question). In slightly less than half the cases (46%), this geographic scope meant that the effort had to deal with more than one county government, with some dealing with 4 or more:



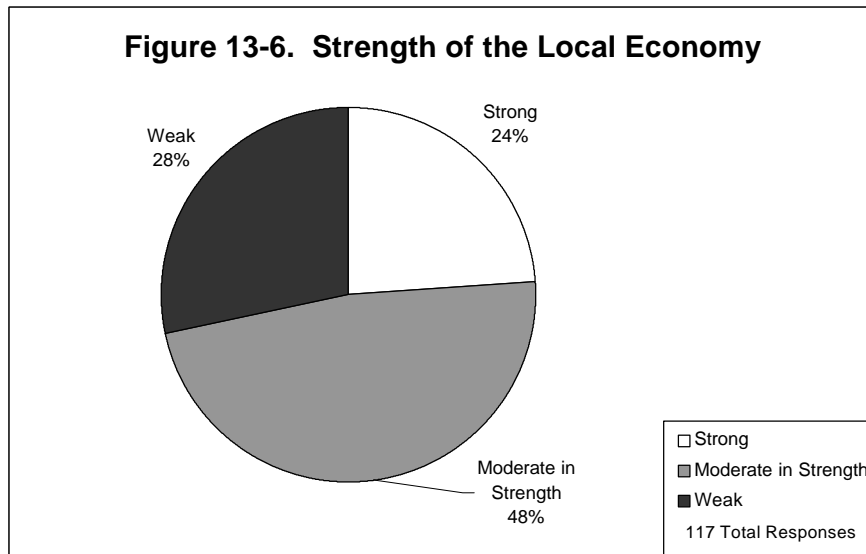
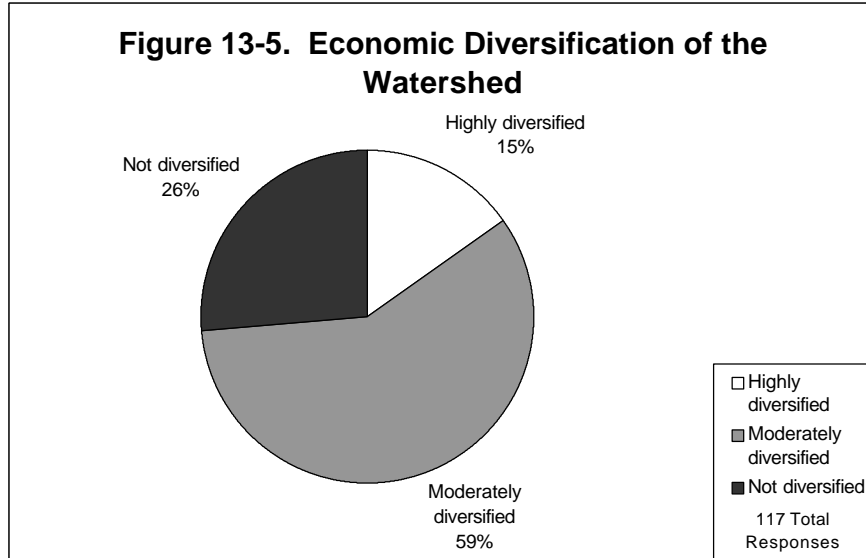
The survey was also useful in describing the basic population characteristics of those regions with active watershed initiatives. As shown below, the watershed initiatives surveyed were equally split between municipal and rural areas.



However, the municipal populations are better described as small communities, rather than large urban metropolises. For example, as shown below, well over half (60 percent) the responding groups have focus areas of less than 25,000 residents; 30 percent have focus areas with less than 5,000 residents.



The survey also collected data about the economic character of the focus areas, finding that 72 percent (85 of 118) of the groups feature a “significant percentage of the region’s population employed in natural resource jobs.” Respondents also reported their economies to typically be “moderately diversified” and “moderate in strength.”



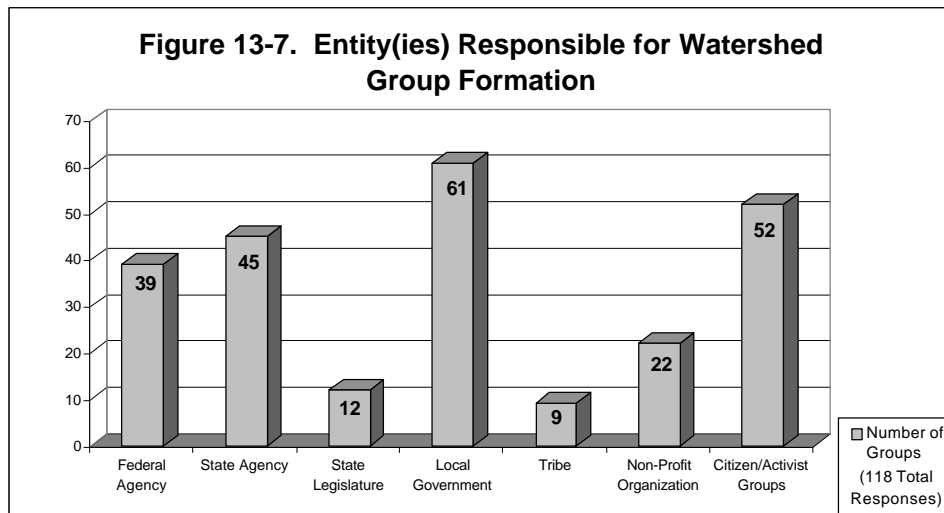
Background and Scope of the Watershed Initiative

Western watershed initiatives are a relatively modern phenomenon. Of the groups surveyed, 91 percent were formed after 1990. In fact, slightly over half of the groups studied were formed since 1995, the approximate starting date of research for the original *Source Book*.

Table 13-1. Year of Group Formation

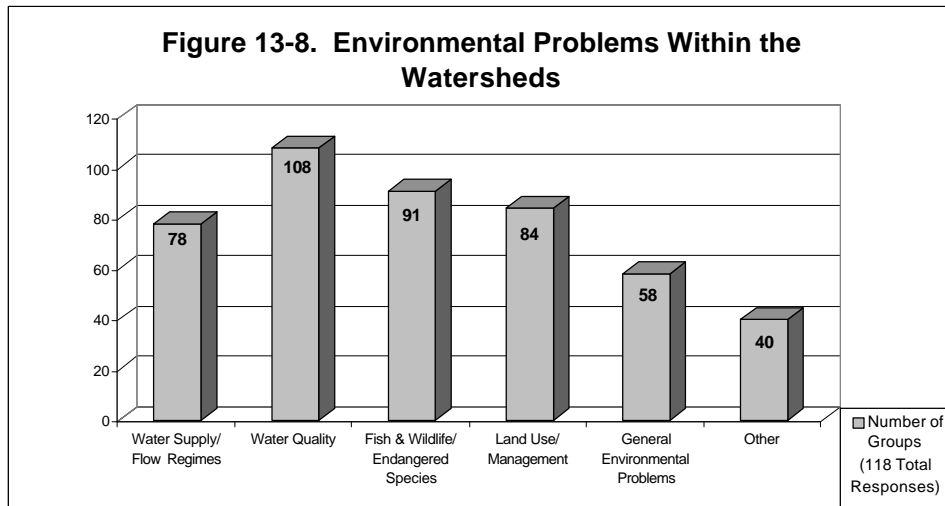
Year Formed	Before 1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number of Groups	11	4	5	11	11	15	14	14	21	11	1
Percentage	9%	3%	4%	9%	9%	13%	12%	12%	18%	9%	1%

As shown below, several types of entities frequently play a role in helping to form the watershed initiative, challenging the widely-held notion that these efforts originate solely from citizen activism¹⁸⁸:

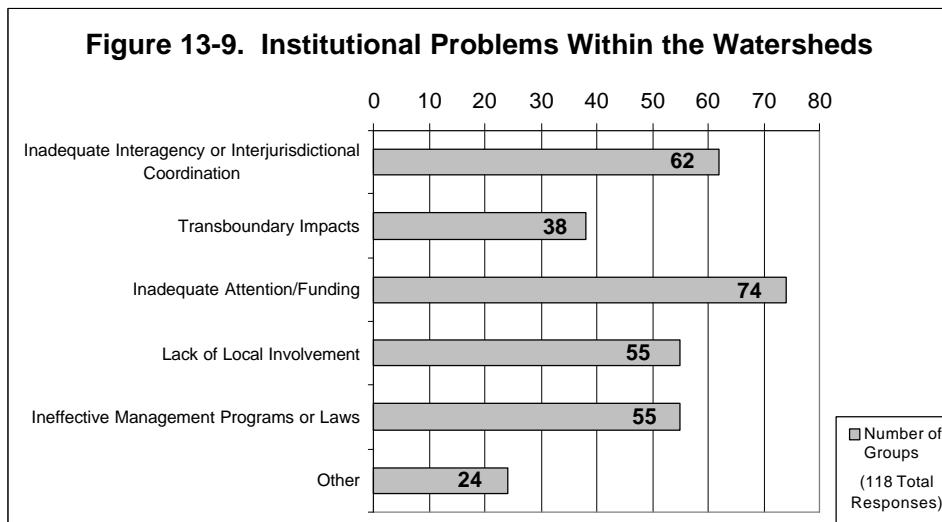


¹⁸⁸ Note that many initiatives identified more than one type of entity responsible for group formation.

Watershed initiatives organize to address a variety of natural resource and institutional problems. As expected, water quality and endangered species issues headed the list of physical/environmental concerns. However, as shown below, concerns over land-use and water supply were also commonly identified, being cited by 71 percent and 66 percent of respondents, respectively.

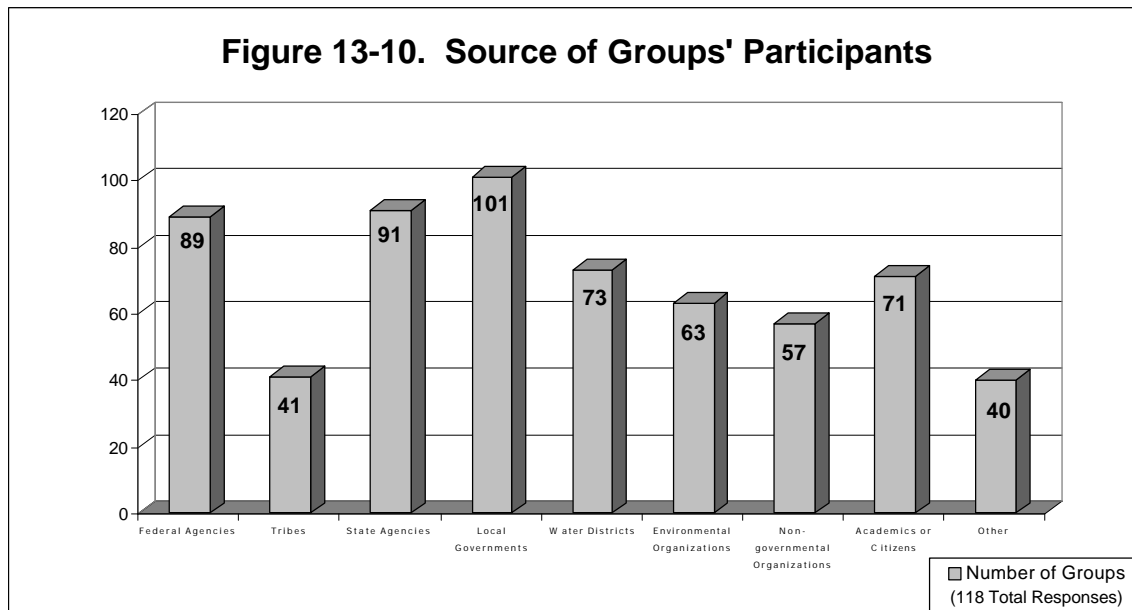


Leading the way in the institutional problems category was the concern that “inadequate attention/funding” was being given to a natural resource problem of concern (cited by 63 percent of responding groups), followed by a concern over “inadequate interagency or interjurisdictional coordination” (cited by 53 percent of responding groups).



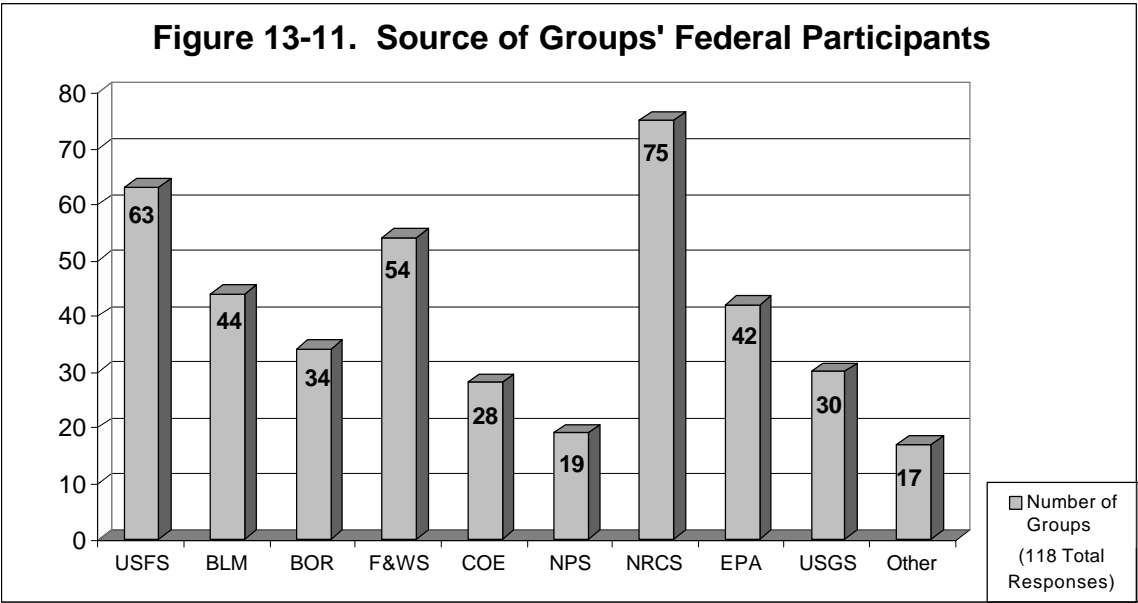
Participation and Representation

Concerns about inadequate participation and representation of all interests are among the most serious criticisms aimed at watershed initiatives (Kenney, 2000). As shown below, the initiatives included in this survey generally have diverse memberships. The somewhat low rate of involvement of “academics or citizens” (cited in 60 percent of responding groups) and “environmental organizations” (cited in 53 percent of responding groups) is disconcerting. The subject matters of concern to watershed initiatives have strong implications for citizen and environmental interests, and involve complex issues potentially of interest to the academic community.¹⁸⁹

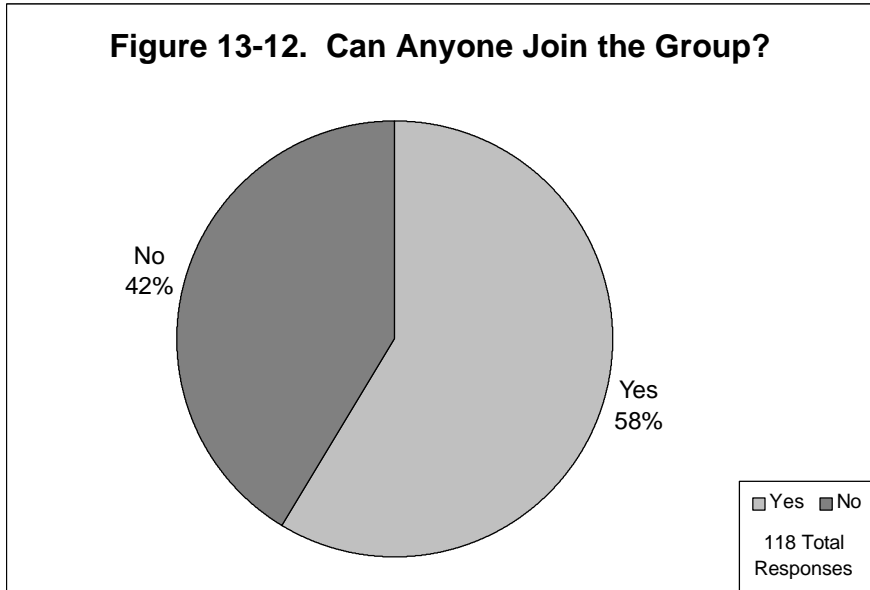


As shown on the following page, three-fourths of all groups include one or more representatives from a federal agency, most commonly the U.S. Natural Resources Conservation Service (represented in 64 percent of responding groups), the U.S. Forest Service (53 percent), and the U.S. Fish and Wildlife Service (46 percent).

¹⁸⁹ The low rate of tribal representation is likely a reflection of the fact that most efforts do not involve tribal lands.

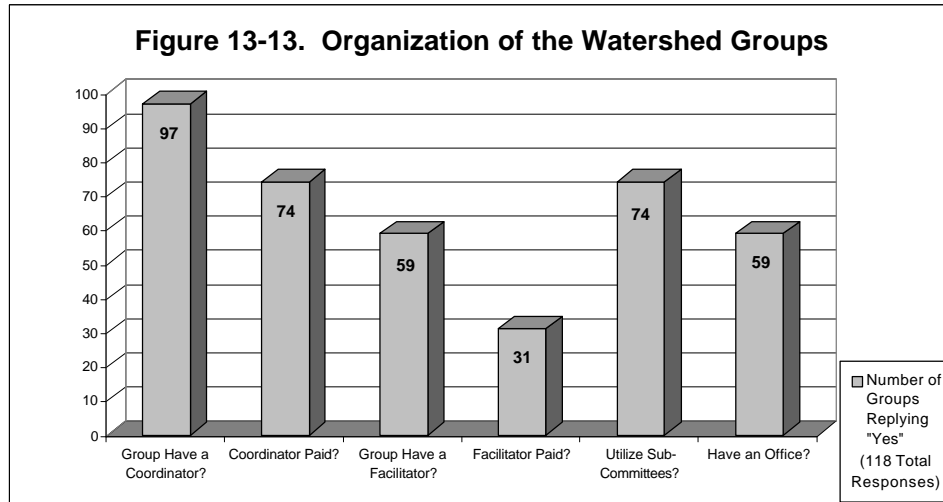


In almost three-fifths (69 of 118) of watershed initiatives surveyed, anyone is welcome to join the group.

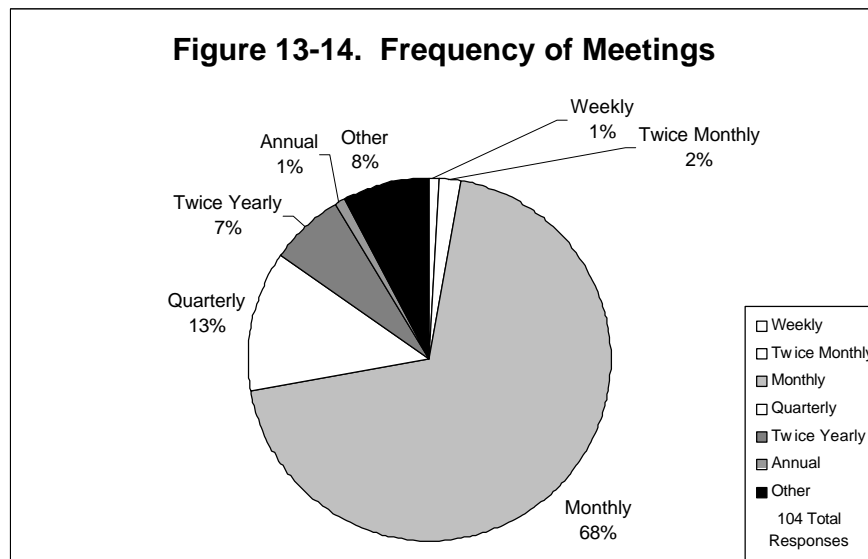


Organization and Process

Previous research by the Natural Resources Law Center has suggested that the greatest asset a group can have is often a coordinator and/or facilitator. Most of the watershed initiatives surveyed have a coordinator and/or facilitator, and often in a paid capacity.¹⁹⁰ This information, and related data about organizational design, are shown below.



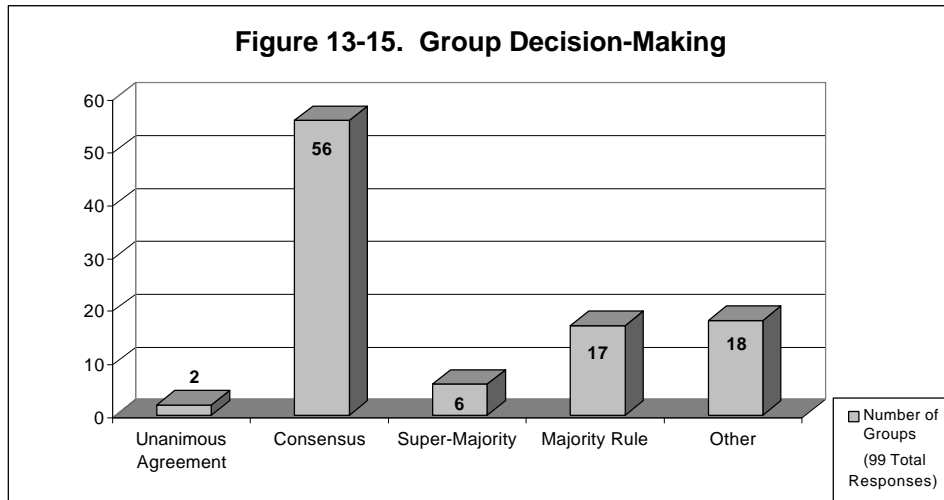
Likely in part due to the efforts of these coordinators/facilitators, most watershed initiatives (86 percent) report that meetings are well-attended and efficiently run¹⁹¹, and as shown below, typically occur monthly.



¹⁹⁰ However, it is likely that groups without coordinators and/or facilitators were less able or willing to complete our survey.

¹⁹¹ Keep in mind that it was the coordinators and/or facilitators that completed most surveys.

More than half of the watershed initiatives surveyed (54 percent) specified their decision-making processes during its formation, while most others are content to leave such processes largely ad hoc or unspecified (19 percent) or at the discretion of the coordinator/facilitator (14 percent). As shown below, consensus is the most common decision-rule.¹⁹²

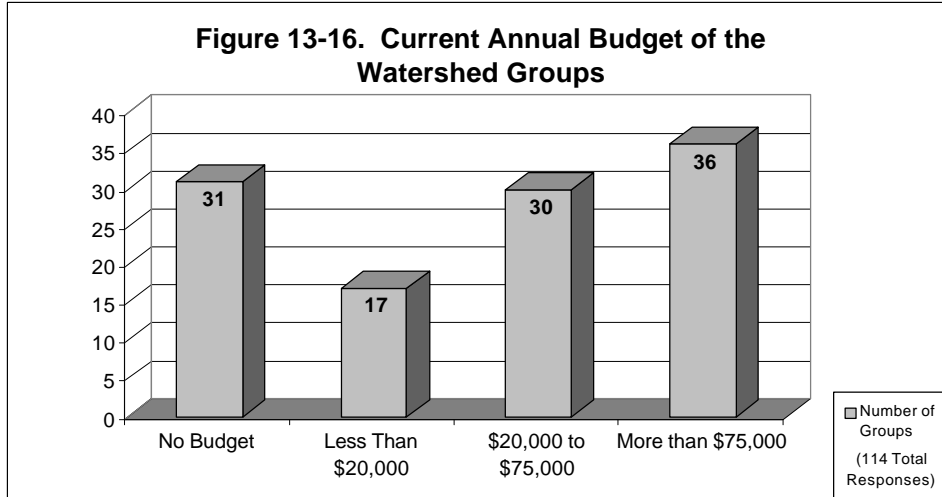


According to the survey respondents, in approximately 84 percent of watershed initiatives, participants feel that they have “the opportunity to equally and adequately participate in decision-making.”

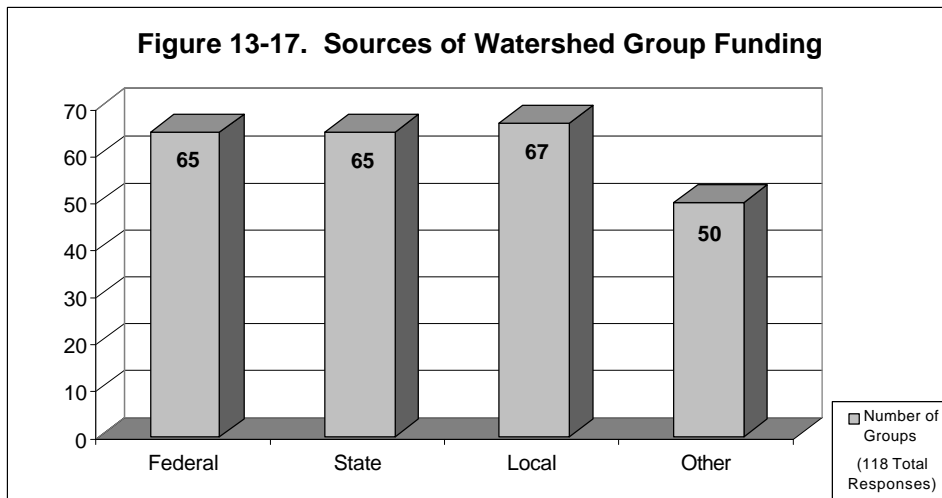
¹⁹² Note that many watershed initiatives that officially utilize a consensus decision-rule implement such a rule in practice as a unanimity requirement, not moving forward in those areas where one or more participants is in opposition. Most of these groups, however, are reluctant to use the term “unanimity” to describe this practice, as the term does not convey the philosophy of give-and-take that most groups try to achieve in their deliberations.

Budget

Questions pertaining to budget produced a picture of “haves” and “have nots,” with most groups having either “no budget” or a budget “more than \$75,000.”



Many respondents, however, found budget questions difficult to answer, as many watershed initiatives utilize “flow through” money—i.e., funds used to implement or support the desired actions of the group, but funds which are not formally transferred by the funding entity (normally an agency) into the hands of the watershed initiative. Watershed initiatives often attract funding from a variety of sources.¹⁹³

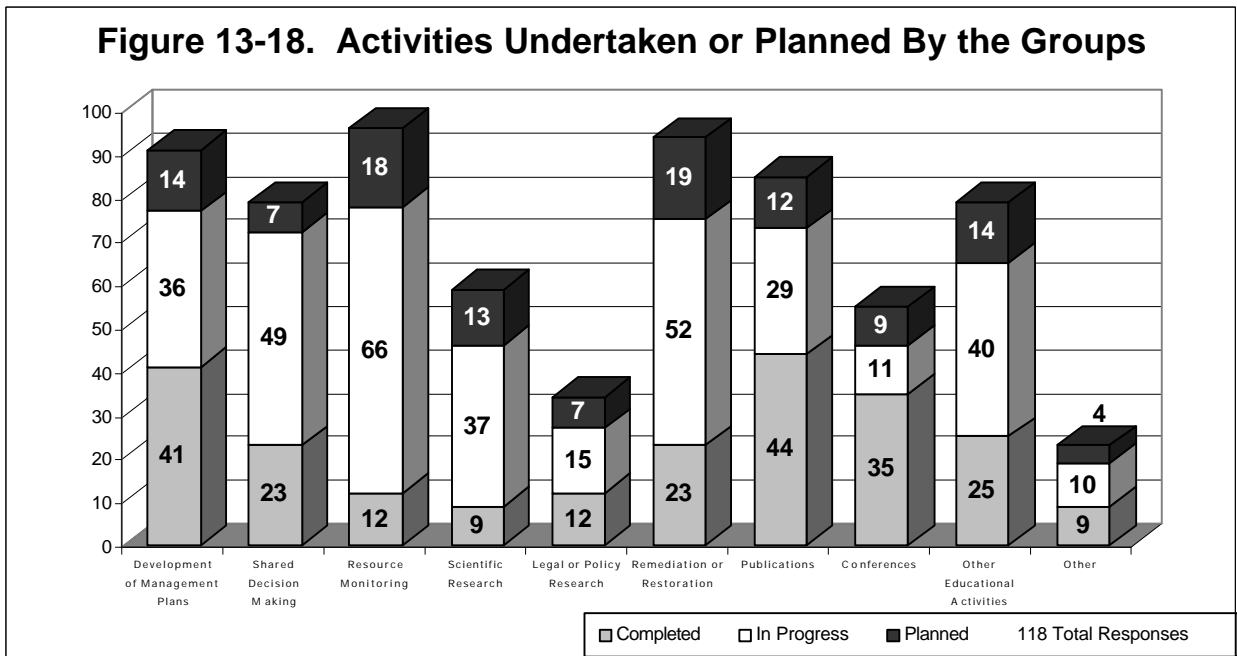


Only slightly more than half (63 of 118 or 53 percent), however, report that this level is “adequate to achieve the group’s short-term goals.”

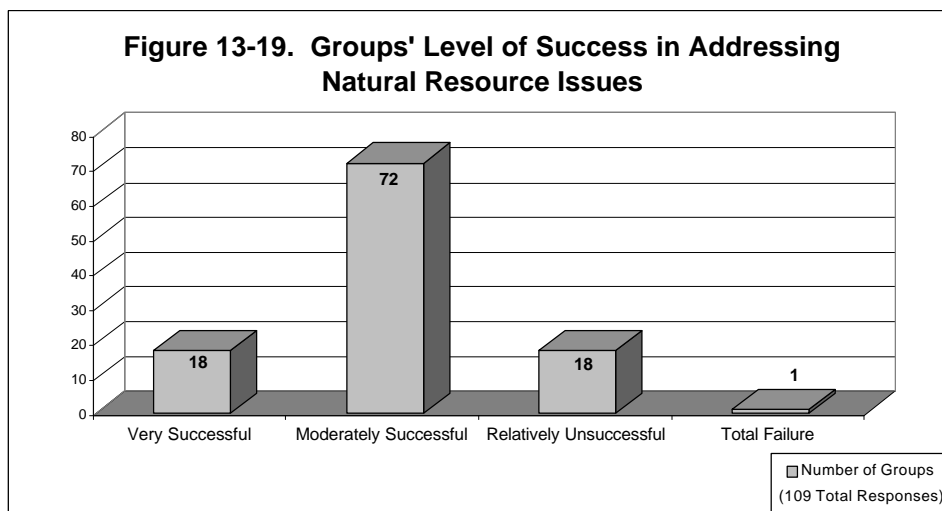
¹⁹³ An attempt was made to quantify the magnitude of funding from each source (rather than just the frequency), but was unsuccessful due to imprecise survey language, the aforementioned problem of quantifying flow-through funding, and the reluctance of many watershed initiatives to discuss funding details.

Projects, Activities and Accomplishments

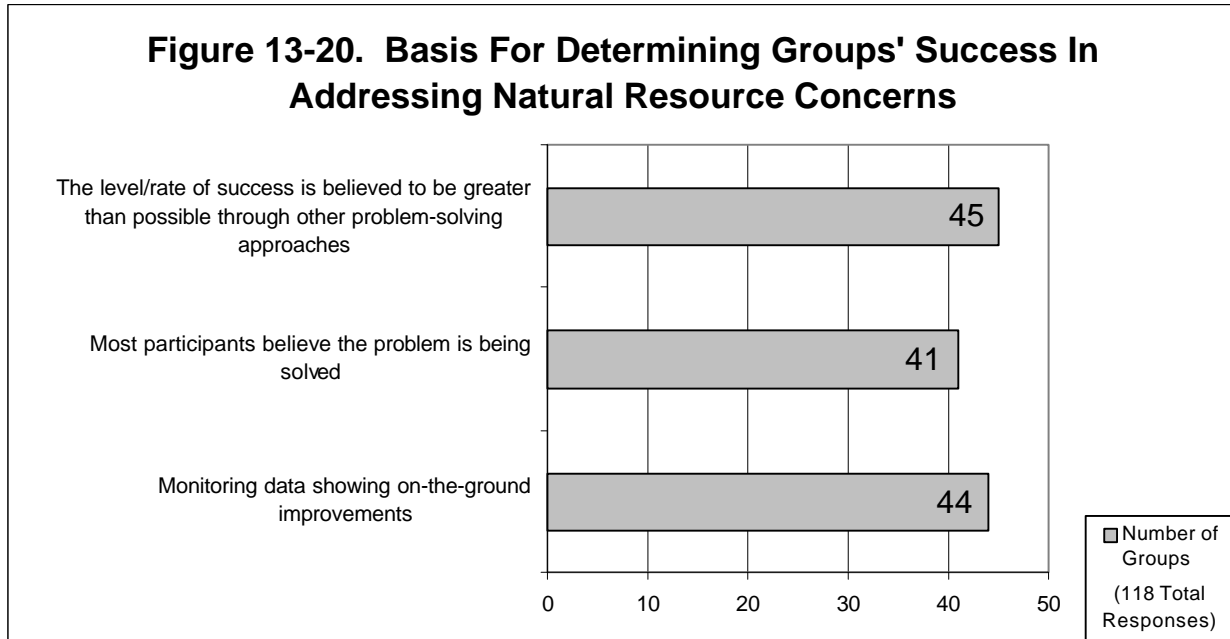
The activities of watershed initiatives are as varied as their structural and functional qualities. As shown below, the most common completed activities are the production of publications, the development of management plans, and the hosting of conferences. Some progress is also reported regarding “remediation or restoration activities,” although most such efforts are still in the “planning” or “in progress” stages.



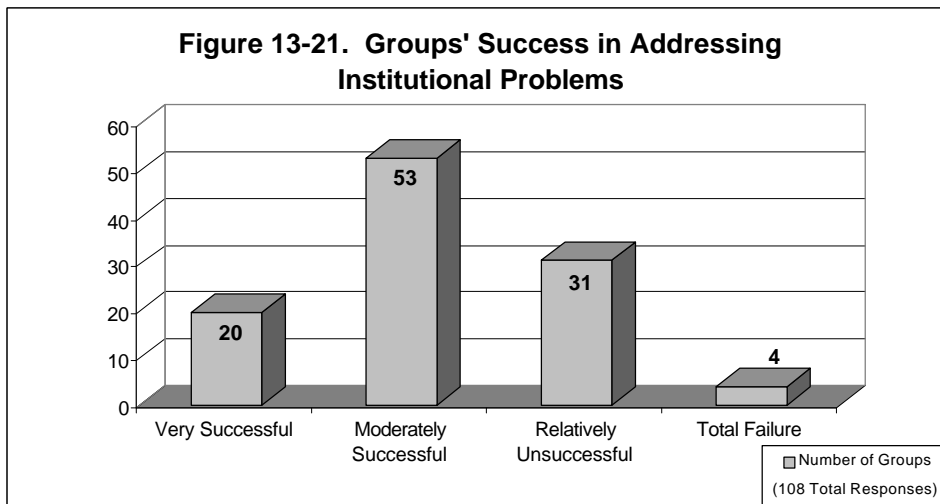
The vast majority of groups (66 percent) report “moderate success” in addressing the natural resource problems of greatest concern, with responses of “very successful” and “relatively unsuccessful” occurring with equal frequency.



As shown below, this assessment is based on at least three criteria¹⁹⁴:

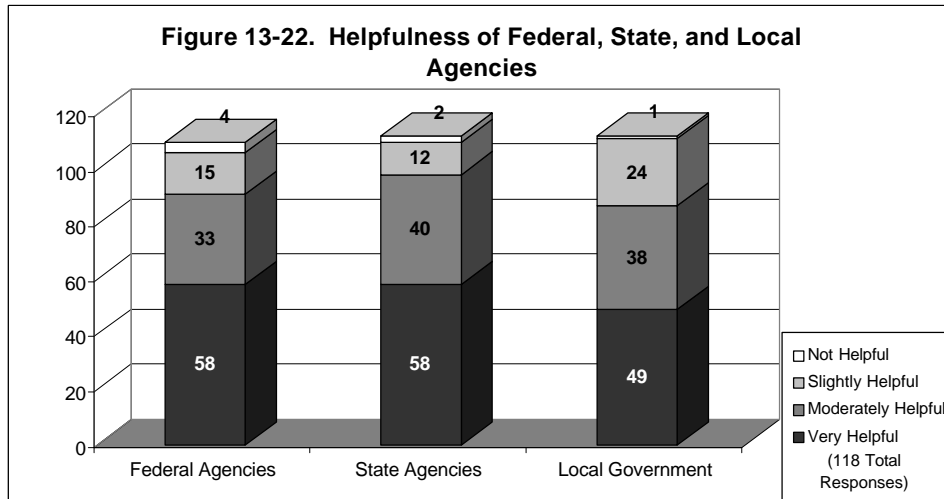


Generally, the watershed initiatives surveyed were somewhat less content with their progress addressing institutional problems, but nonetheless reported many achievements.

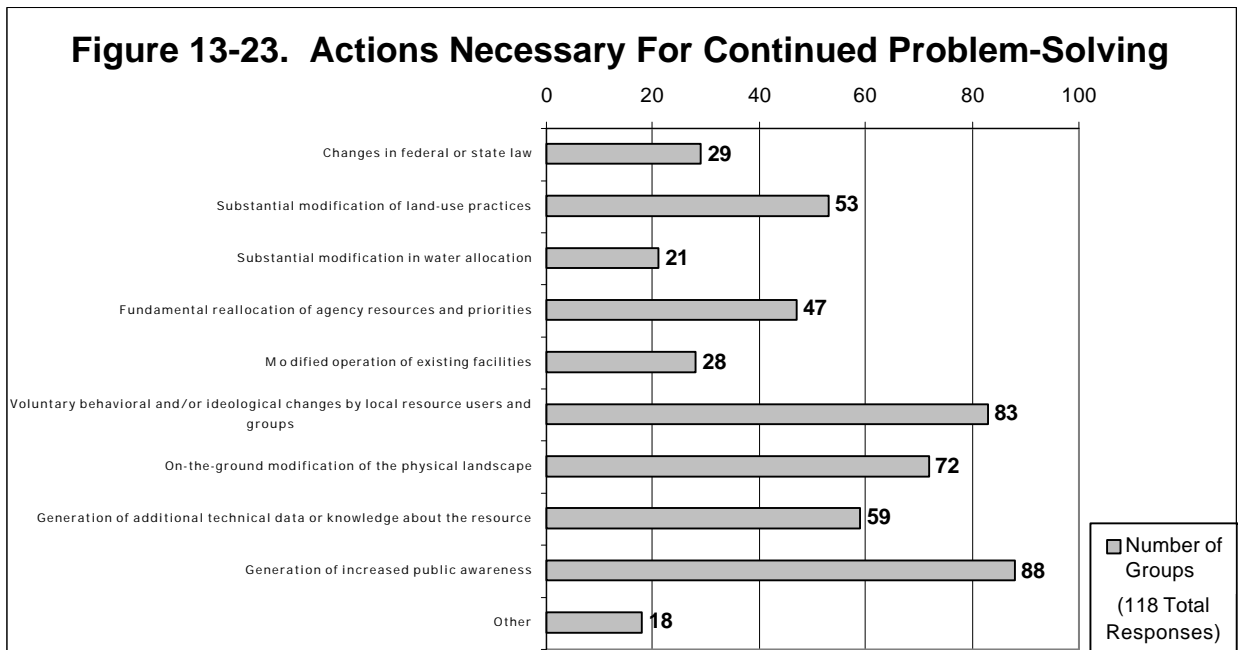


¹⁹⁴ Note that the three answers shown were the choices provided in the survey, and that respondents were welcome to select more than one answer. Also note that the response rate shown is for groups answering all “success related” questions. Generally, only that subset of watershed initiatives that described themselves as successful offered the responses tabulated in Figure 13-20.

Federal, state, and local governments are typically viewed as being helpful to the problem-solving efforts of the watershed initiatives.



Making further progress solving problems is likely to involve several actions, including generating increased public awareness and behavioral changes.



Survey Data for Oregon Watershed Initiative Participants

The preceding text provided a detailed statistical description of the groups featured in chapters 5 – 11 and 15. Many of those groups are from Oregon, a state with an unmatched commitment (at least in the West) to encouraging and supporting watershed initiatives. Due to the prominence of the Oregon program, data on these initiatives is more readily available than elsewhere.

The following pages contain data gathered by graduate student Mike Hart¹⁹⁵, under the supervision of Dr. Maxine Dakins at the University of Idaho, and in cooperation with the Natural Resources Law Center. Hart and Dakins are using this data to test a variety of hypotheses relating to consensus decision-making. In this study, the information is primarily provided in the interest of description, a worthwhile effort given that many states view Oregon as the model to be followed. Note that the “Hart survey” is primarily designed to describe the participants and their experiences in watershed initiatives, rather than the groups themselves. In this way, the Hart data further complements the statistical snapshot of watershed initiatives provided by the Natural Resources Law Center survey.

Given that the Hart survey was intended to support statistically significant analyses of specific research questions, formal survey methods and practices were observed. The Hart survey contains data from 276 participants associated with 26 different watershed initiatives at least one year old. Within the 26 groups, random sampling methods were used to select survey recipients. A response rate of slightly greater than 70 percent was achieved. As shown in Figures 13-24 to 13-80, most questions are actually statements to which respondents offered a response, either agreeing or disagreeing based on the tiered scale provided.

¹⁹⁵ Mike Hart is a graduate student at the University of Idaho working on a Masters Degree in Environmental Science with an emphasis in Policy and Law. Under a grant to Idaho Rivers United, he worked nine months as a neutral watershed facilitator where he participated in several successful and unsuccessful efforts to organize watershed groups in Idaho. He currently is president of Communication Designs, Inc., a firm providing communication strategy and support to federal, state and private clients in the Northwest. Communication Designs, Inc., is located in Idaho Falls, Idaho.

General Impressions (Statements 1 to 23)

The first 19 statements simply ask participants to answer questions pertaining to the “watershed group with which they are associated,” while statements 20 to 23 pertain to the involvement of governmental decision-makers.

Figure 13-24. *Statement 1:* The watershed group with which I am associated is well balanced.

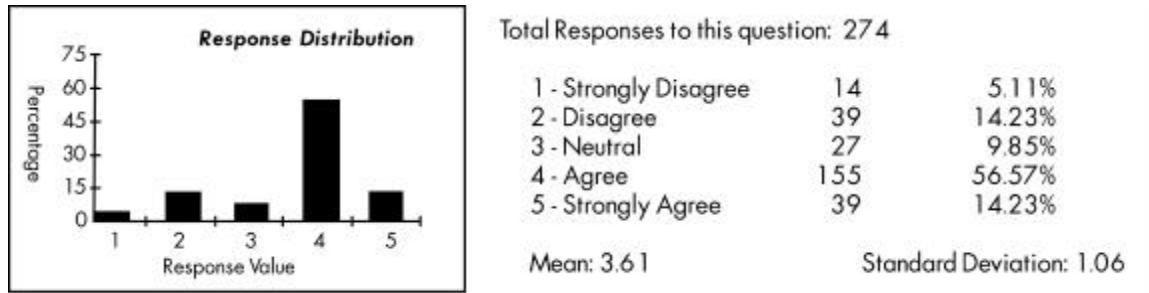


Figure 13-25. *Statement 2:* The watershed group with which I am associated uses an ineffective process to reach decisions.

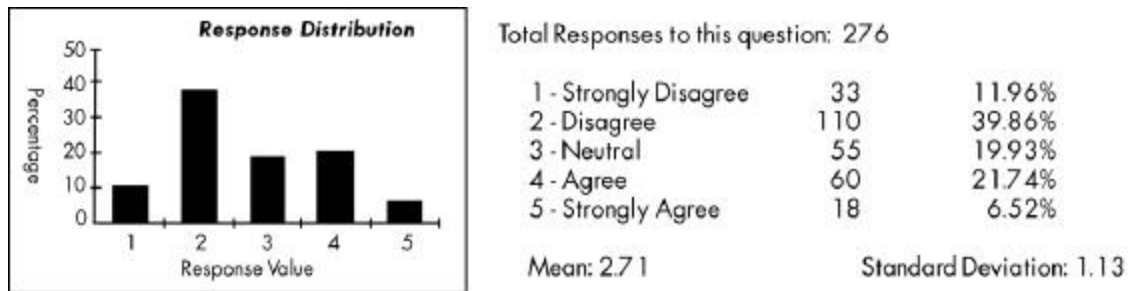


Figure 13-26. *Statement 3:* The watershed group with which I am associated defines its membership in an appropriate manner.

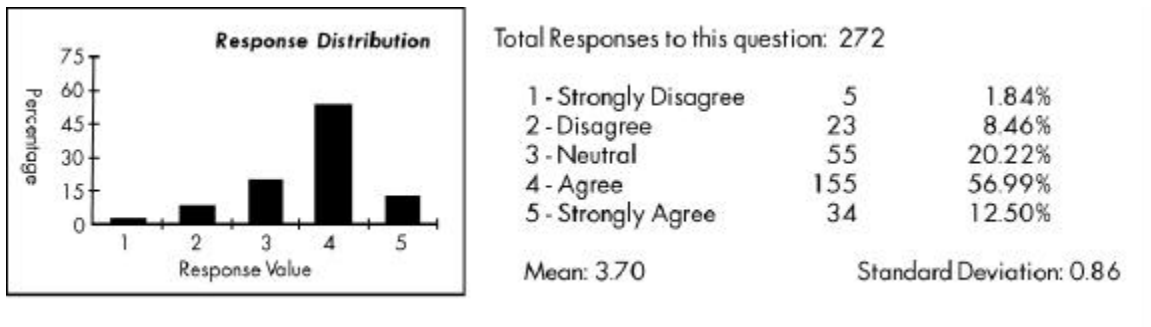


Figure 13-27. *Statement 4:* The watershed group with which I am associated is effective.

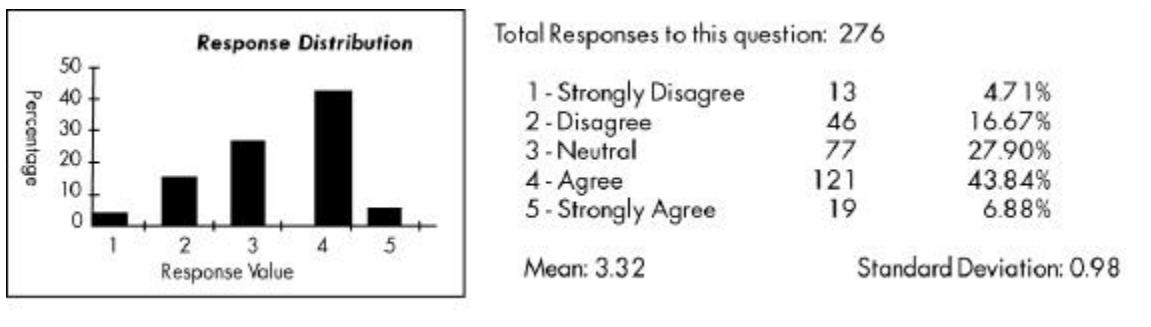


Figure 13-28. *Statement 5:* The watershed group with which I am associated is disorganized.

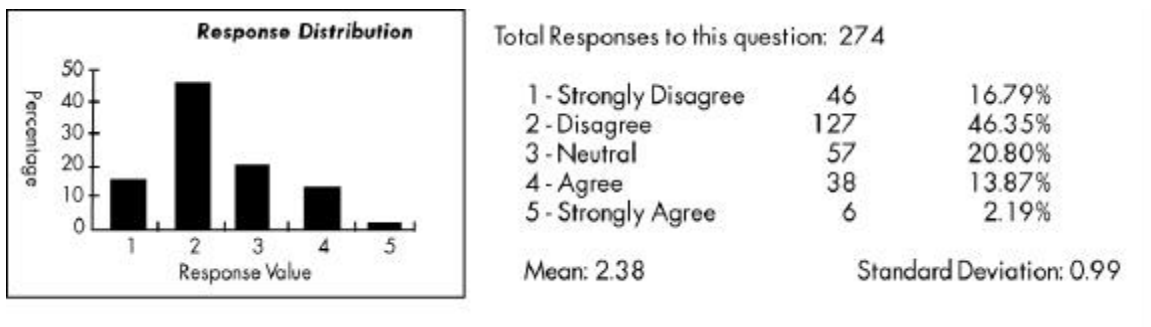


Figure 13-29. *Statement 6:* The watershed group with which I am associated is not representative of interests in the watershed.

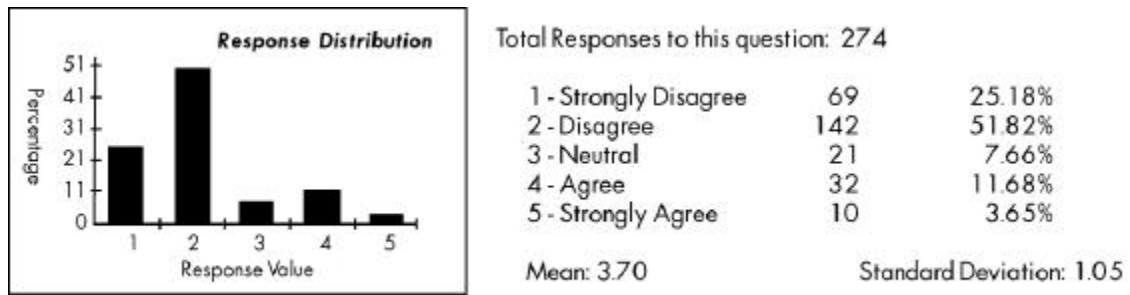


Figure 13-30. *Statement 7:* The watershed group with which I am associated gives fair consideration to dissenting opinions.

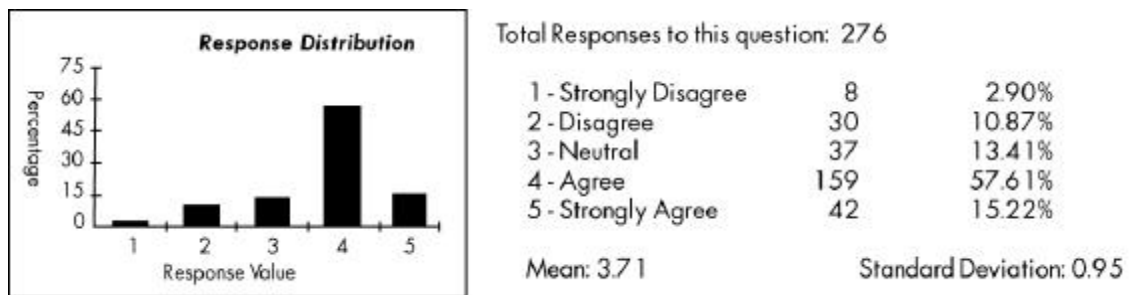


Figure 13-31. *Statement 8:* The watershed group with which I am associated addresses difficult or controversial issues.

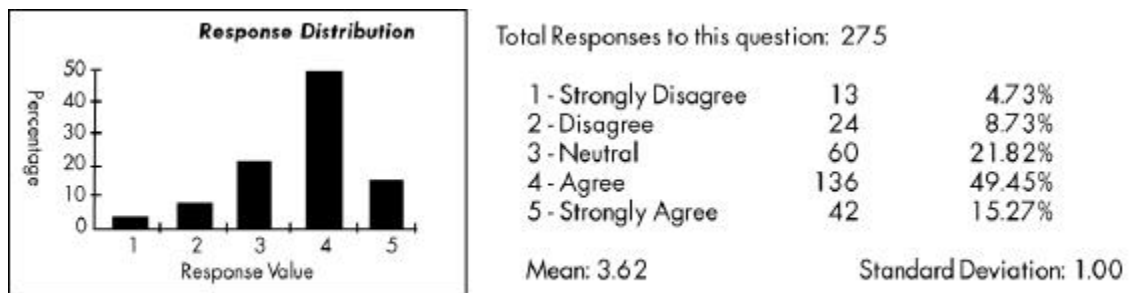


Figure 13-32. *Statement 9:* The watershed group with which I am associated fails to address issues in a timely manner.

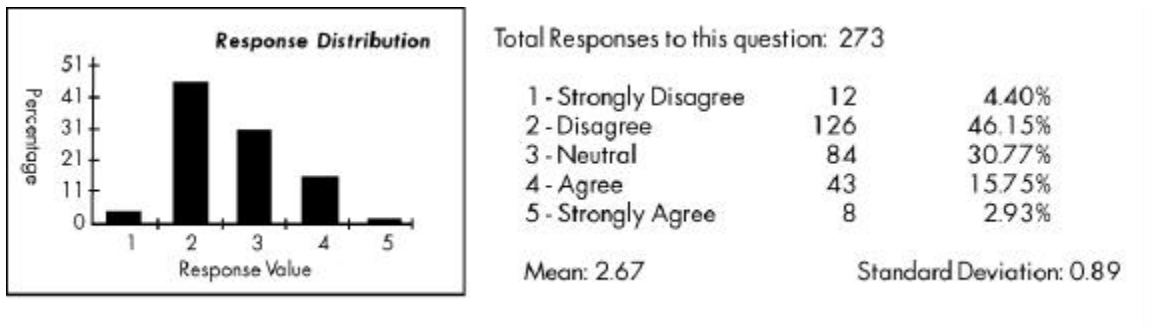


Figure 13-33. *Statement 10:* The watershed group with which I am associated has adequate financial support.

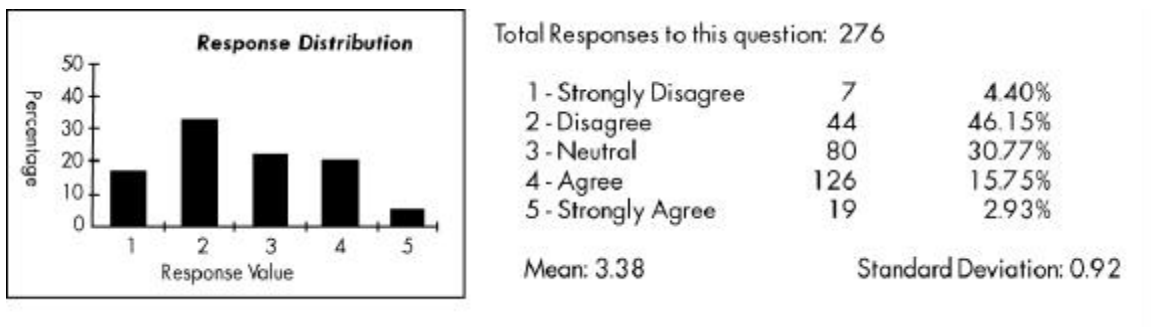


Figure 13-34. *Statement 11:* The watershed group with which I am associated provides useful recommendations to decision makers.

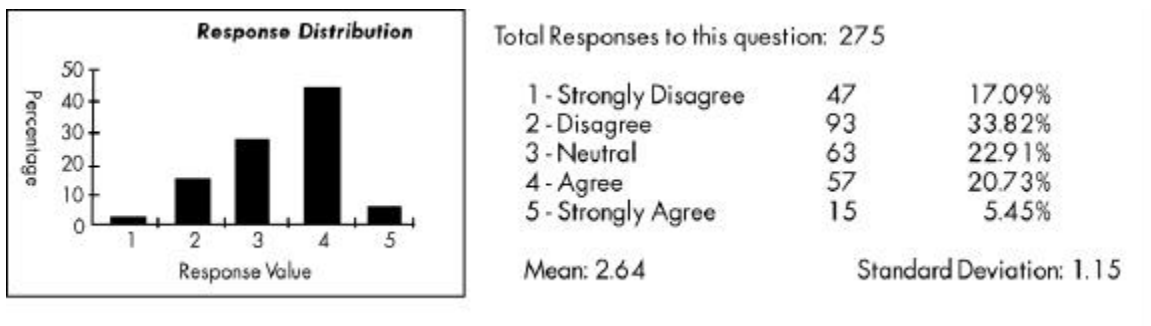


Figure 13-35. *Statement 12:* The watershed group with which I am associated has not improved physical conditions in the watershed.

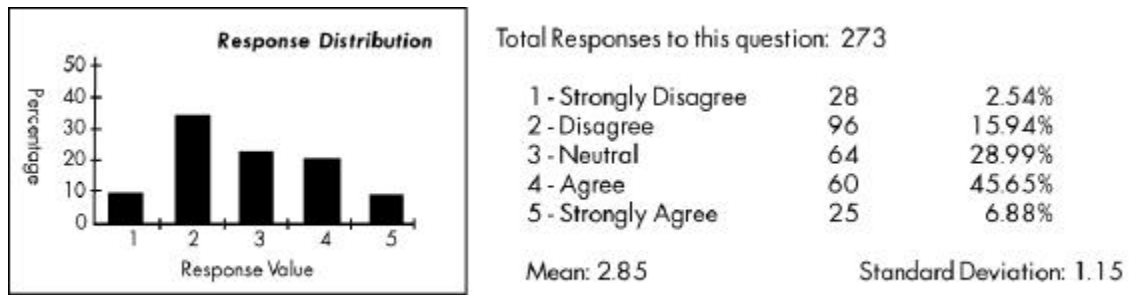


Figure 13-36. *Statement 13:* The watershed group with which I am associated has the participation of key decision making groups.

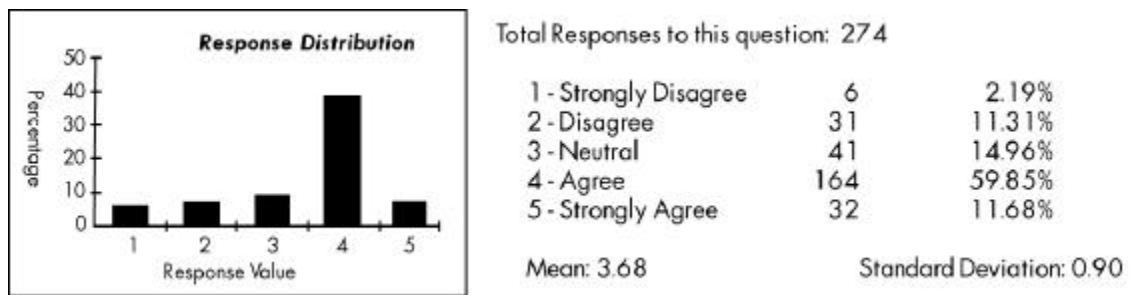


Figure 13-37. *Statement 14:* The watershed group with which I am associated has a positive impact on decisions of other key groups.

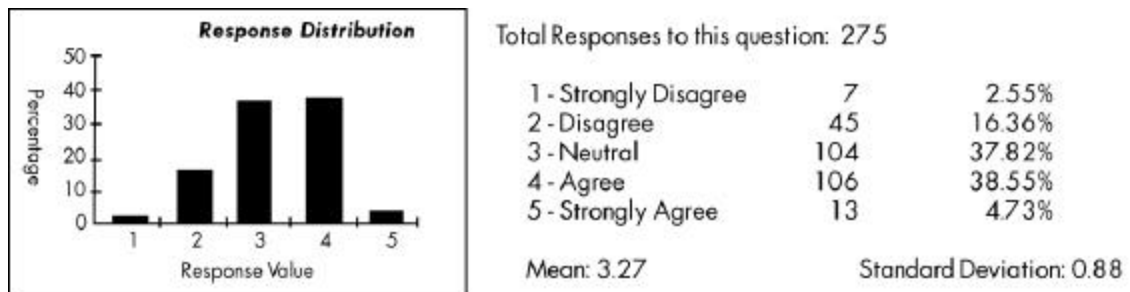


Figure 13-38. *Statement 15:* The watershed group with which I am associated has a positive impact on government decisions.

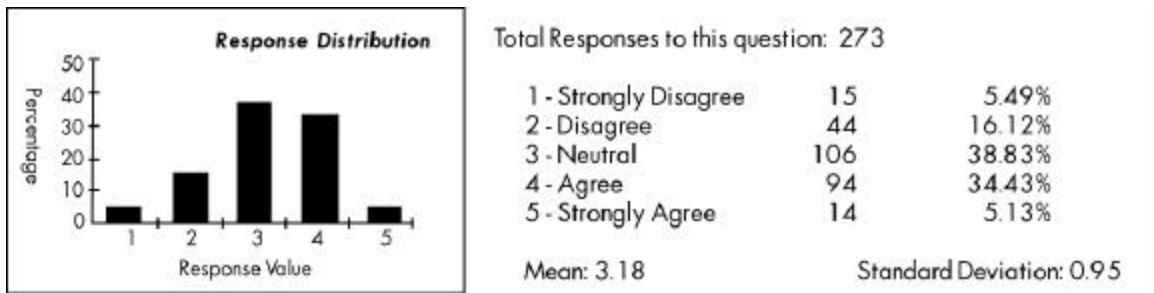


Figure 13-39. *Statement 16:* The watershed group with which I am associated facilitates effective exchange of viewpoints on watershed issues.

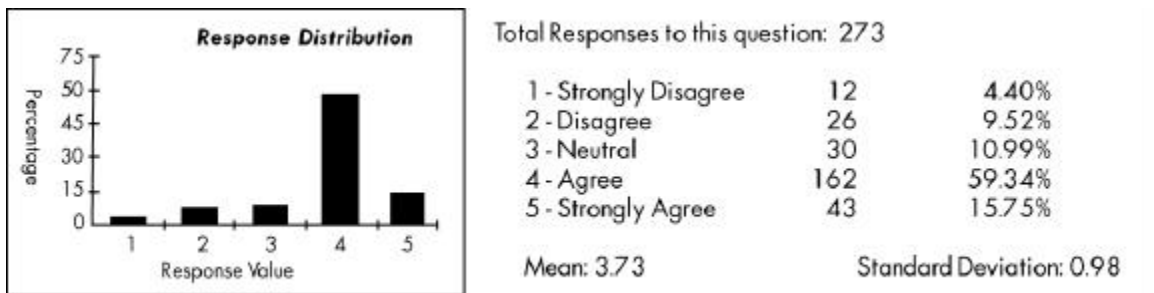


Figure 13-40. *Statement 17:* The watershed group with which I am associated has inadequate staff support.

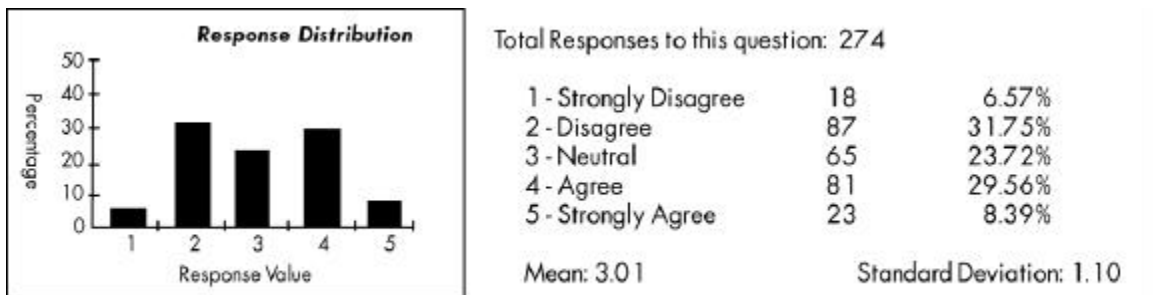


Figure 13-41. *Statement 18:* The watershed group with which I am associated has effective leadership.

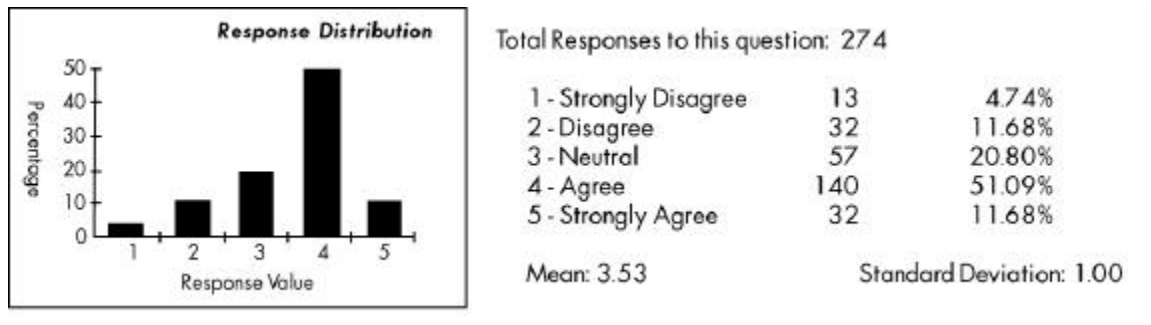


Figure 13-42. *Statement 19:* The watershed group with which I am associated contributes to trust among participants.

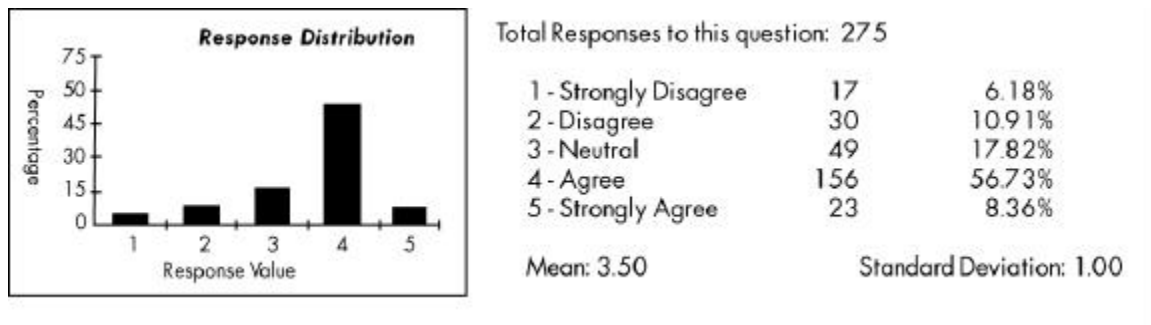


Figure 13-43. *Statement 20:* Government decision makers are unwilling to bring decisions and plans to the watershed group.

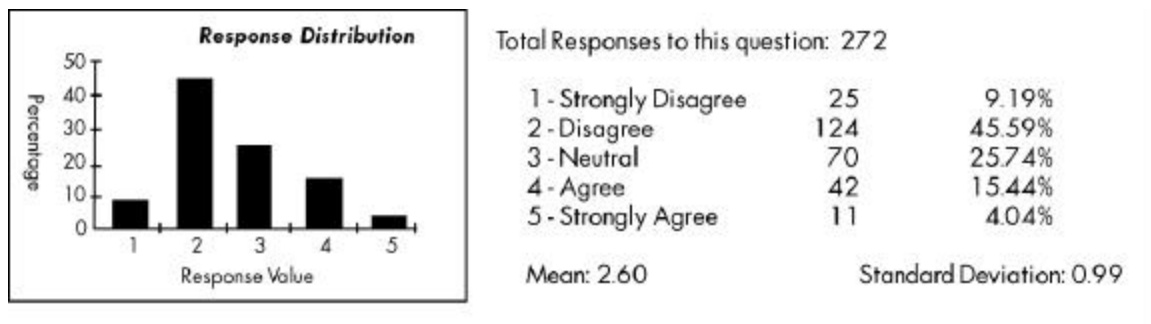


Figure 13-44. *Statement 21:* Government decision makers have improved relationships with the public as a result of this effort.

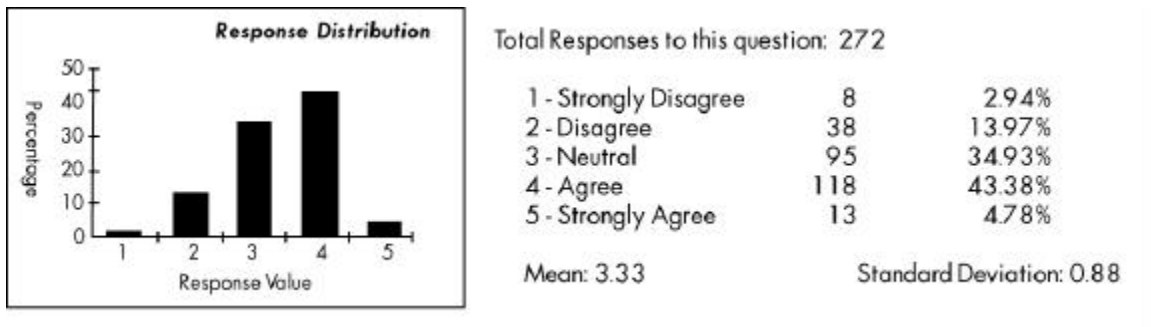


Figure 13-45. *Statement 22:* Government decision makers are willing to be influenced by the group.

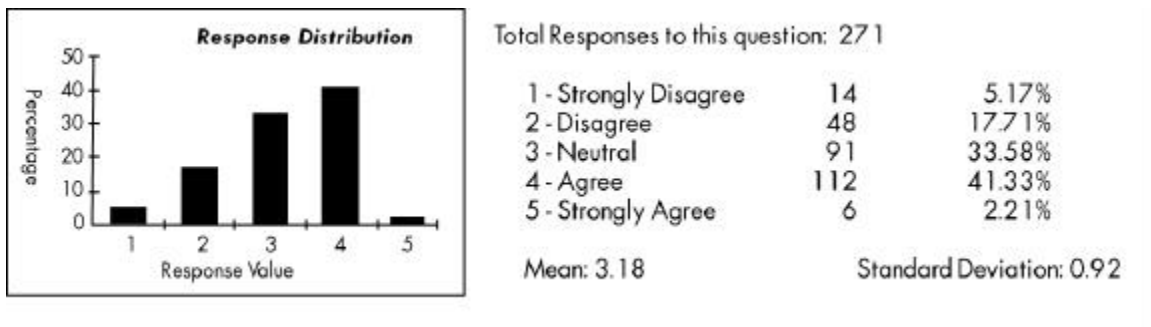
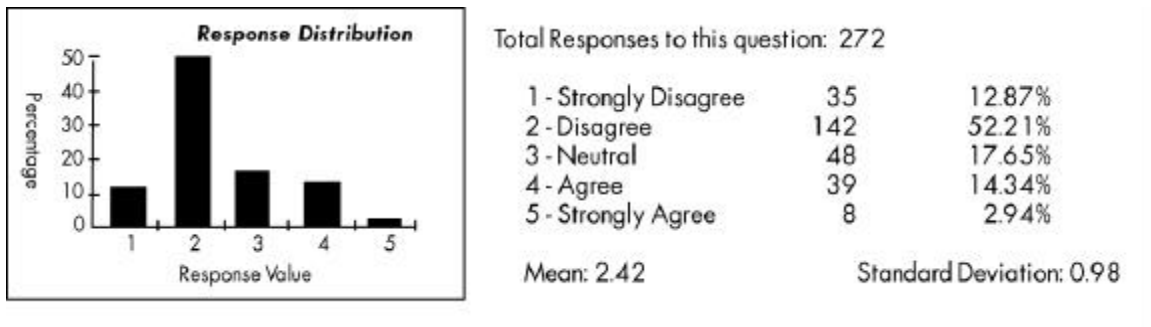


Figure 13-46. *Statement 23:* Government decision makers do not play an active role in the group.



Process for Making Decisions (Question 24)

The purpose of question 24 is to identify the procedures utilized to make group decisions. Three processes were defined for the respondents: consensus, hybrid, and voting.

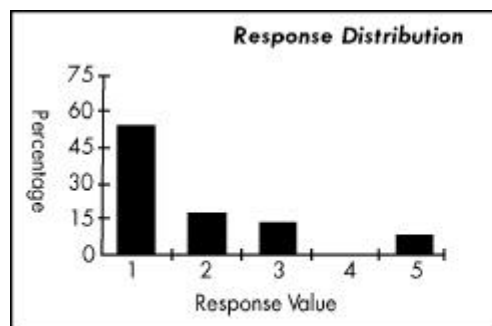
Consensus: A process where decisions are made when participants may not agree with all aspects of the final outcome by all are willing to minimally accept the outcome and agree not to oppose it.

Hybrid: A process that strives for consensus but has a back up decision-making system when consensus cannot be achieved.

Voting: A process that uses voting (majority or super-majority) as the primary means for making decisions. A voting group can still strive for consensus but does not rely on it for reaching decisions.

Other choices included “other” and “don’t know.”

Figure 13-47. *Question 24:* Please identify the process used by the group for reaching decisions. (Pick only one answer.)



Total Responses to this question: 274

1 - Consensus	156	56.93%
2 - Hybrid	52	18.98%
3 - Voting	40	14.60%
4 - Other	2	0.73%
5 - Don't Know	24	8.76%

Rules of Membership (Questions 25 and 26)

Membership is not merely a question of who participates (an issue explored later), but also refers to the nature of participation and the basis of membership status. Questions 25 and 26 utilize the following terms:

Representative: A system that restricts decision-making authority to individuals who are authorized to act as official delegates representing specific interests or “seats” in the group.

Open: A system that allows any participant who attends a meeting to participate in and potentially affect the outcome of group decisions.

Restricted: A system that is open with certain restrictions on participation in decision making.

Figure 13-48. *Question 25:* Please identify how membership is determined. (Pick only one answer.)

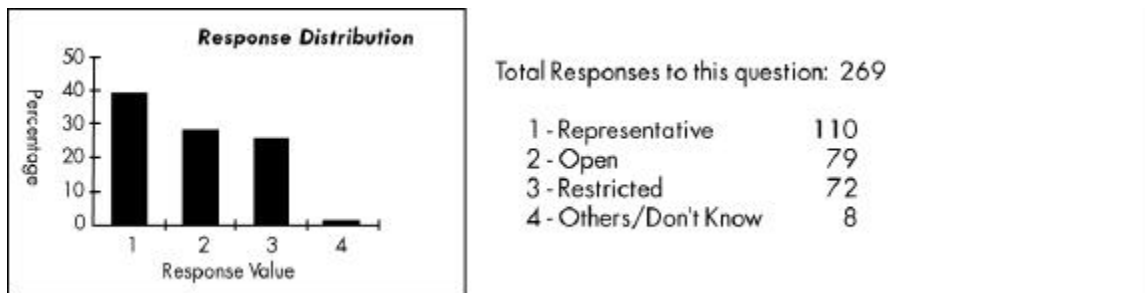
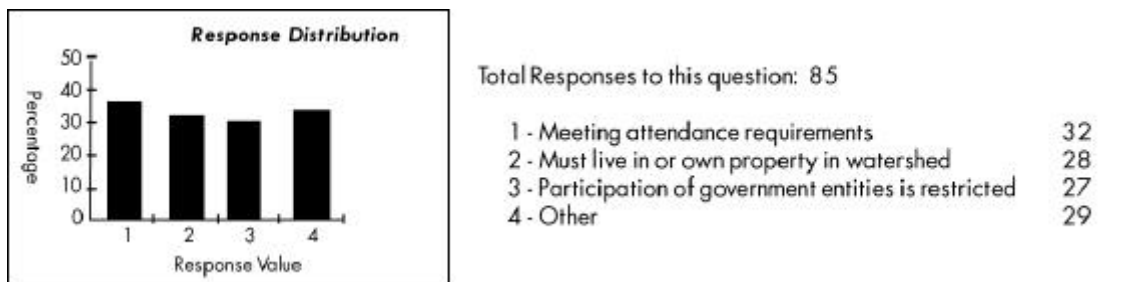


Figure 13-49. *Question 26:* If you checked RESTRICTED above, please check all restrictions that apply.



Group Function (Questions 27 and 28)

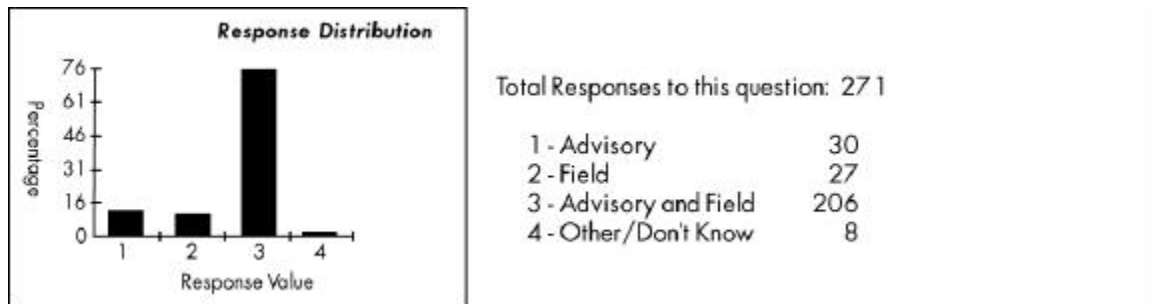
In addition to focusing on different substantive matters, groups also differ in their functional roles. Question 27 identifies three separate categories of functions:

Advisory: Provide advice to government and/or non-government entities.

Field: Sponsors or conducts “on-the-ground” activities in the watershed.

Combination Advisory/Field: A combination of advisory and field functions.

Figure 13-50. *Question 27:* Please identify the primary focus of the group. (Pick only one answer.)

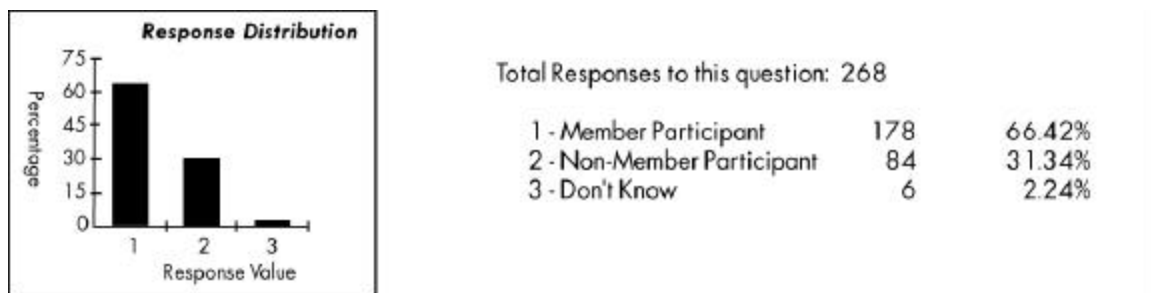


For question 28, the following definitions are used to delineate the participant roles.

Member participant: An individual who is empowered to influence the outcome of the group decisions through the accepted decision-making process.

Non-member participant. An individual who is not a member of the watershed group due to lacking a “vote” or who by rule or personal choice does not participate in decisions.

Figure 13-51. *Question 28:* Please identify the category [of participant role definitions] you consider yourself in. (Pick only one answer.)



Affiliations of Respondents (Questions/Statements 29 to 37)

The affiliations of respondents can be described in several ways. Question 29 presents information based primarily on the respondents' place of employment, while questions 30 to 37 use simple yes/no statements to isolate the "resource use sectors" with which the respondent feels an affinity.

Figure 13-52. *Question 29:* Check a single box that best describes your role as a participant in the watershed group.

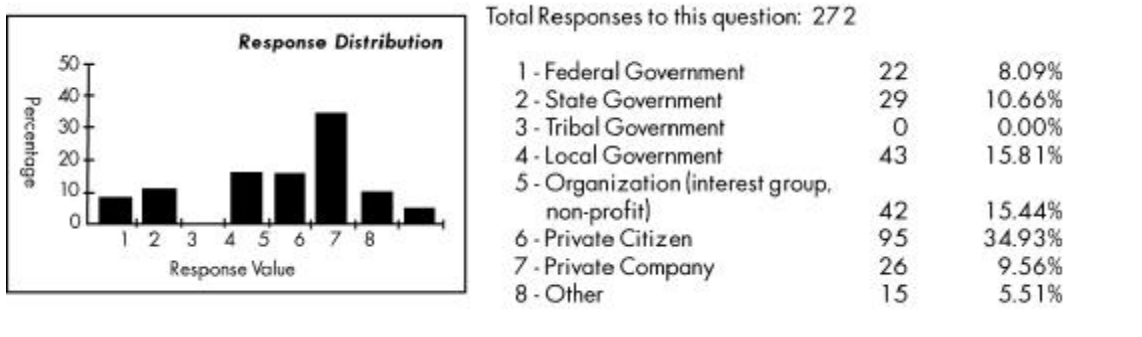


Figure 13-53. *Statement 30:* I own land in the watershed.

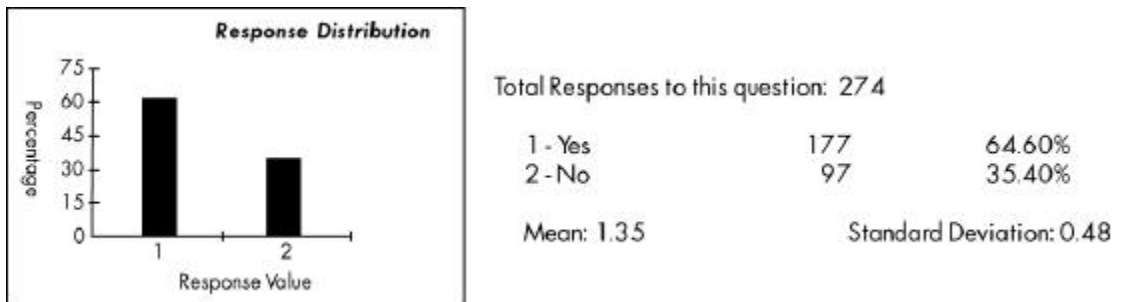
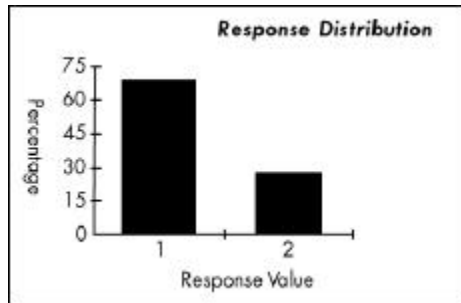


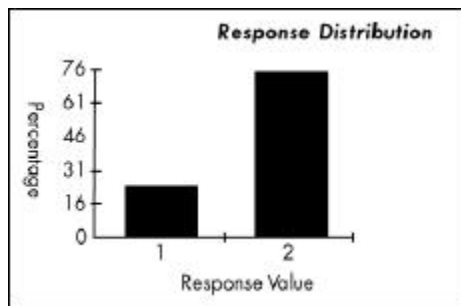
Figure 13-54. *Statement 31:* I live in the watershed.



Total Responses to this question: 273

1 - Yes	192	70.33%
2 - No	81	20.67%
Mean: 1.30	Standard Deviation: 0.46	

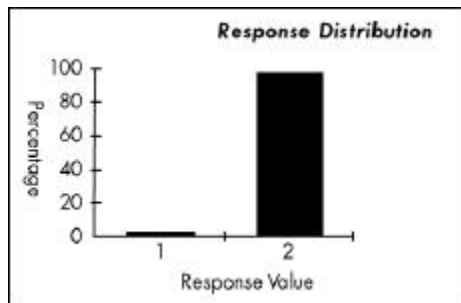
Figure 13-55. *Statement 32:* I consider myself a part of the timber industry.



Total Responses to this question: 265

1 - Yes	62	23.40%
2 - No	203	76.60%
Mean: 1.77	Standard Deviation: 0.42	

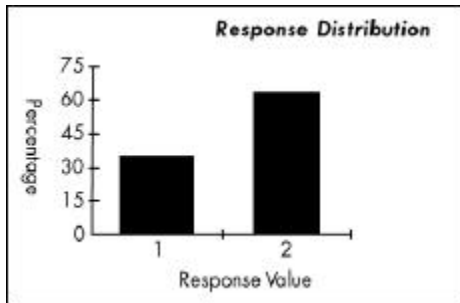
Figure 13-56. *Statement 33:* I consider myself a part of the mining industry.



Total Responses to this question: 264

1 - Yes	7	2.65%
2 - No	257	97.35%
Mean: 1.97	Standard Deviation: 0.16	

Figure 13-57. *Statement 34:* I consider myself a part of the agricultural industry.

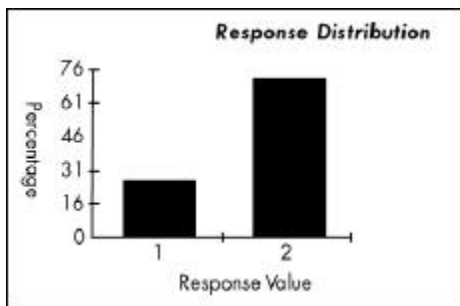


Total Responses to this question: 267

1 - Yes	95	35.58%
2 - No	172	64.42%

Mean: 1.64 Standard Deviation: 0.48

Figure 13-58. *Statement 35:* I consider myself a part of the recreation industry.

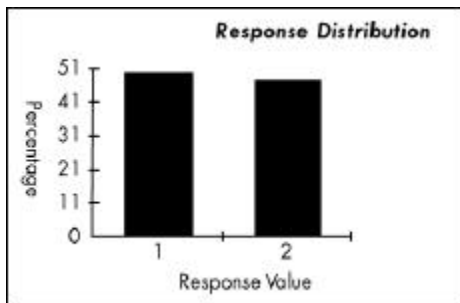


Total Responses to this question: 266

1 - Yes	70	26.32%
2 - No	196	73.68%

Mean: 1.74 Standard Deviation: 0.44

Figure 13-59. *Statement 36:* I consider myself a part of the environmental movement.

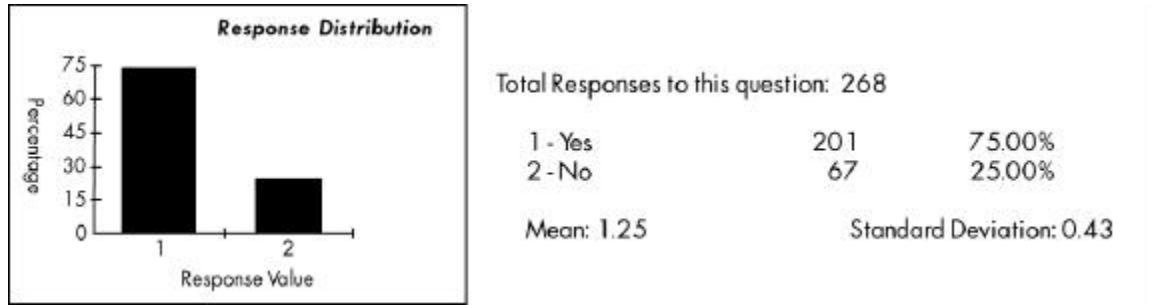


Total Responses to this question: 262

1 - Yes	135	51.53%
2 - No	127	48.47%

Mean: 1.48 Standard Deviation: 0.50

Figure 13-60. *Statement 37:* I regularly use areas in the watershed for recreation.



Group Meetings, Process Outcomes, and Related Observations

The series of questions/statements 38 to 48 are designed primarily to solicit opinions regarding the group process.

Figure 13-61. *Question 38:* Is your attendance part of your job responsibility?

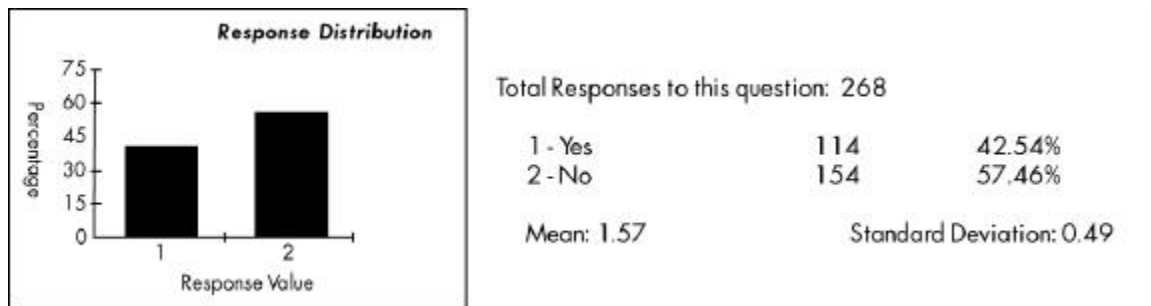


Figure 13-62. *Question 39:* How often do you attend watershed group meetings for this group?

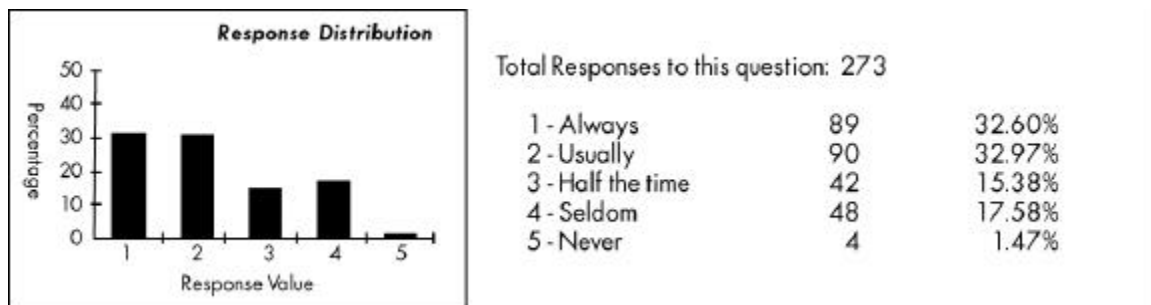


Figure 13-63. *Statement 40:* The groups uses committees or subcommittees between regular meetings.

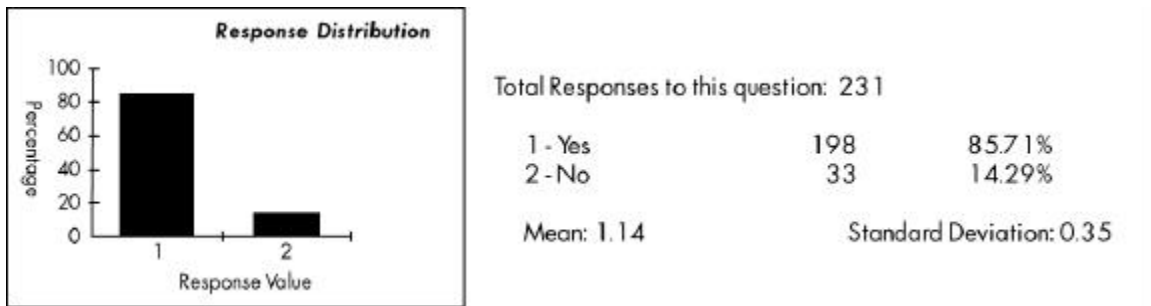


Figure 13-64. *Statement 41:* Meetings conducted by this group are poorly attended.

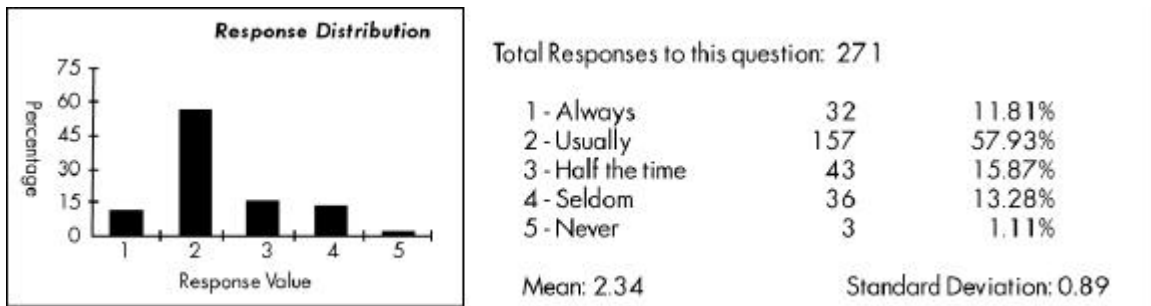


Figure 13-65. *Statement 42:* Meetings are run in a manner that achieves meeting objectives.

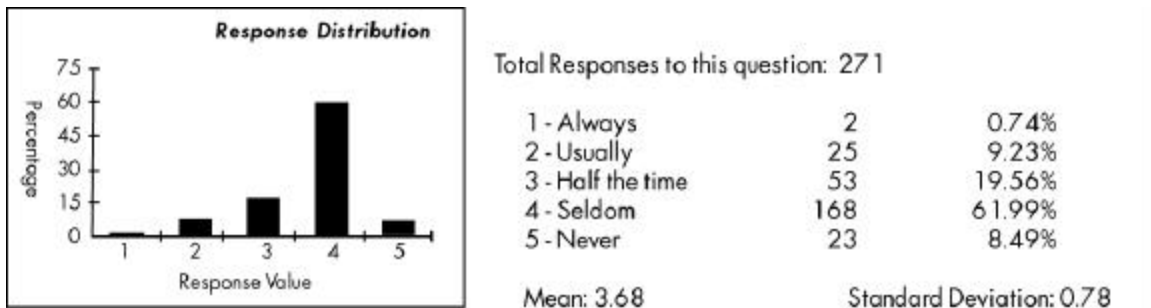


Figure 13-66. *Statement 43:* Meetings conducted by this group are ineffective.

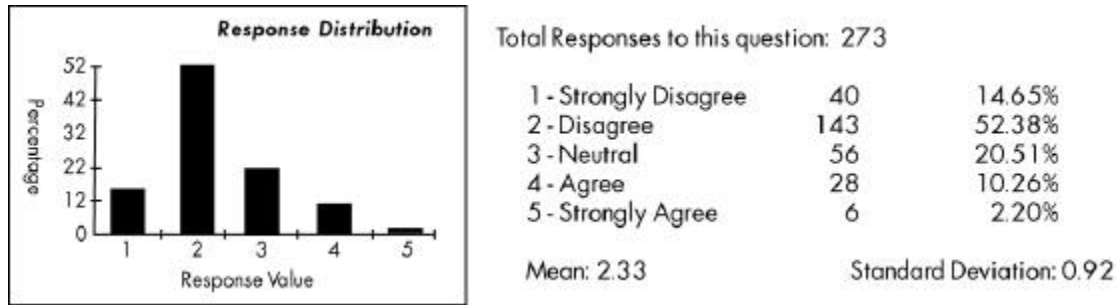


Figure 13-67. *Statement 44:* I feel I have ownership of the group's decisions.

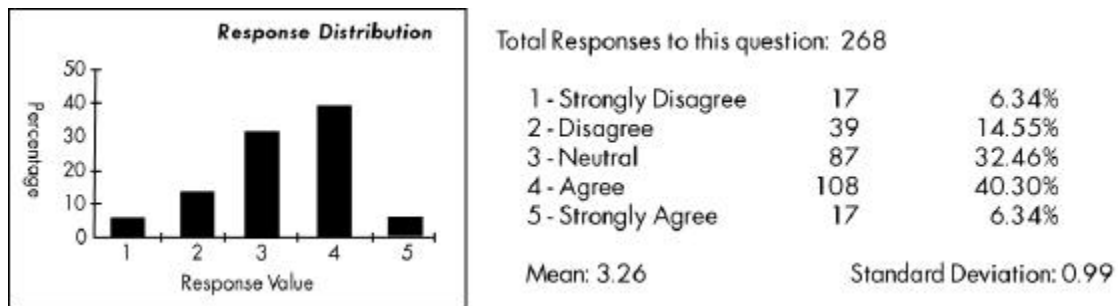


Figure 13-68. *Statement 45:* I do not support the concept of watershed groups.

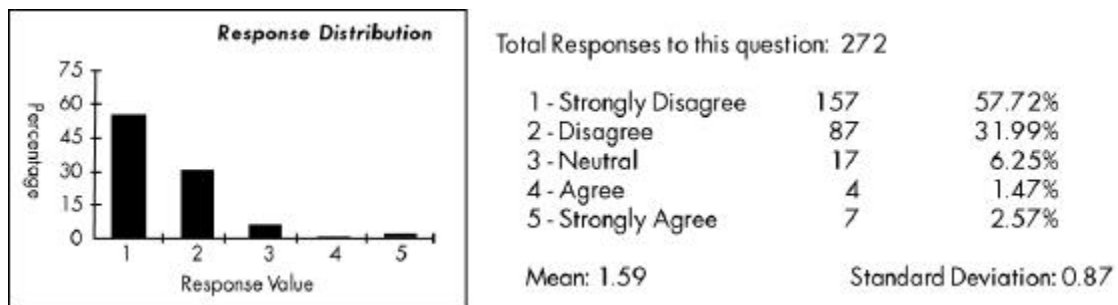


Figure 13-69. *Statement 46:* Because of the group, I better understand issues in the watershed.

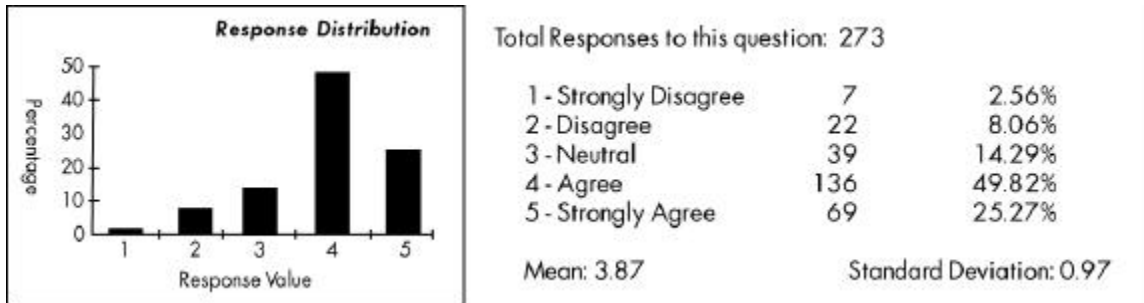


Figure 13-70. *Statement 47:* Because of the group, I better understand the perspectives of others.

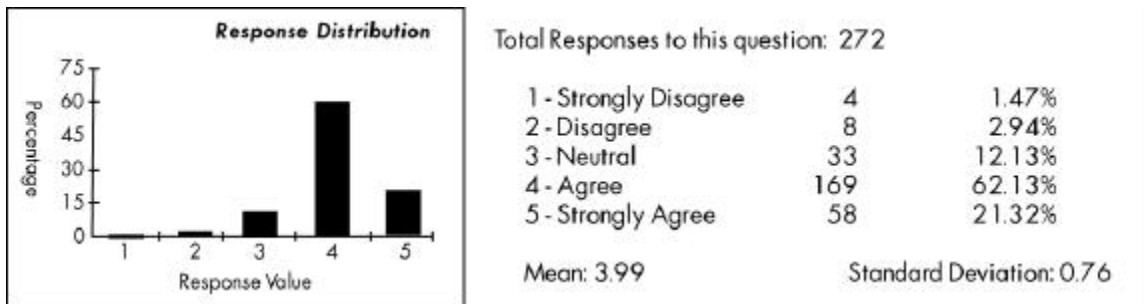
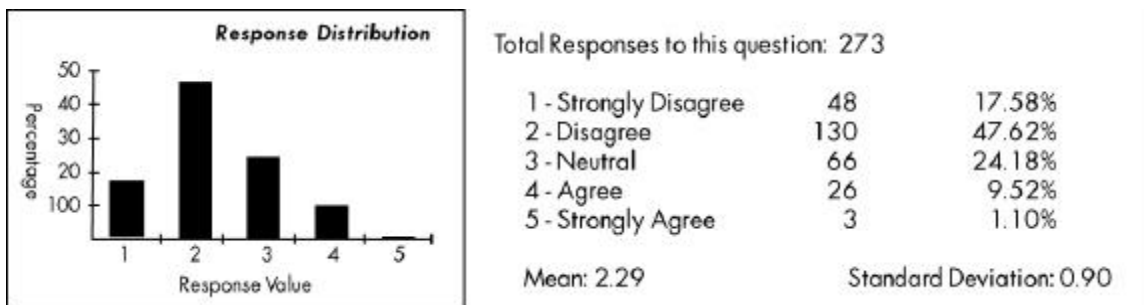


Figure 13-71. *Statement 48:* Participants in the group do not get along well with each other.



Group Formation (Questions/Statements 49 to 57)

The manner in which a group forms undoubtedly influences both the structure and function of the initiative. The following questions/statements explore several dimensions of the “formative” circumstances.

Figure 13-72. *Question 49:* Were you involved in forming the group? (If yes, please also answer questions 49 and 50.)

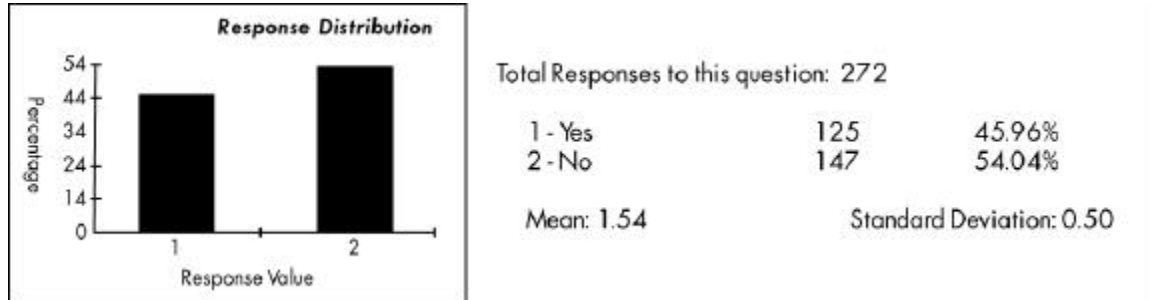


Figure 13-73. *Question 50:* The formation of this group was primarily initiated by . . . (Pick only one.)

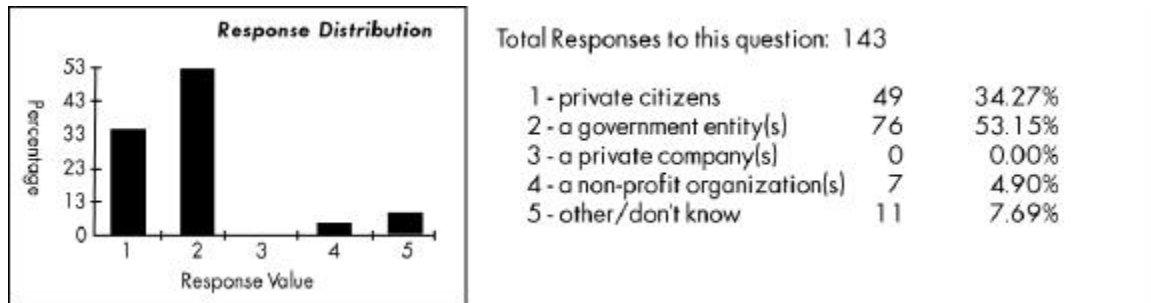


Figure 13-74. *Question 51:* How long did the group take to form? (Please pick only one.)

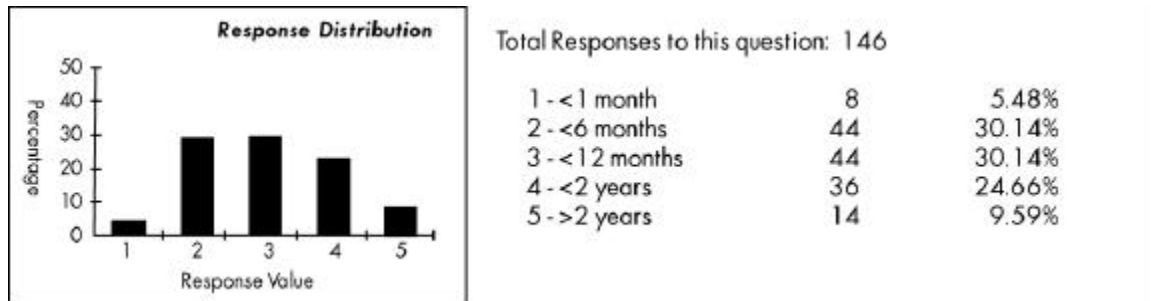


Figure 13-75. *Statement 52:* During its formation the group received financial assistance to support formation.

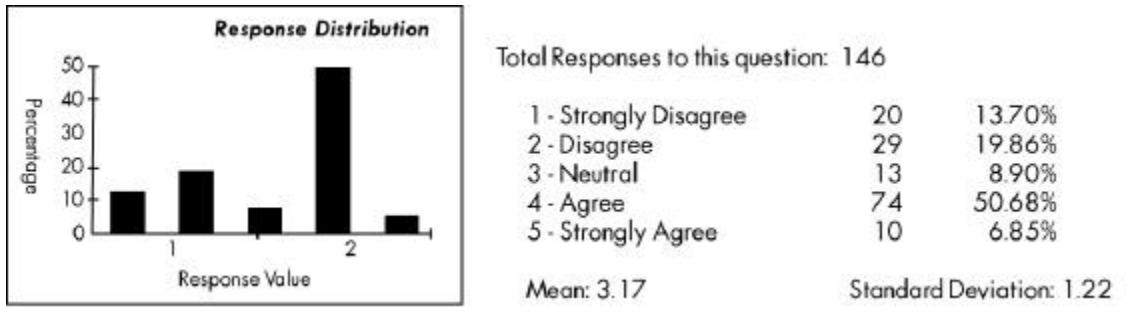


Figure 13-76. *Statement 53:* During its formation the group received staff assistance to support formation.

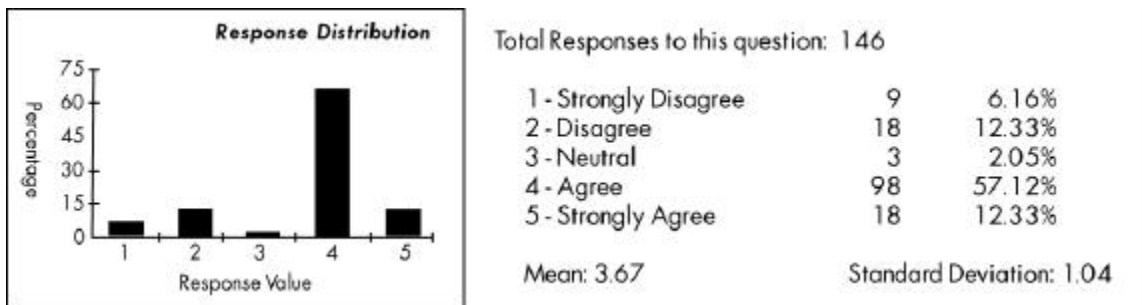


Figure 13-77. *Statement 54:* During its formation government entities provided assistance.

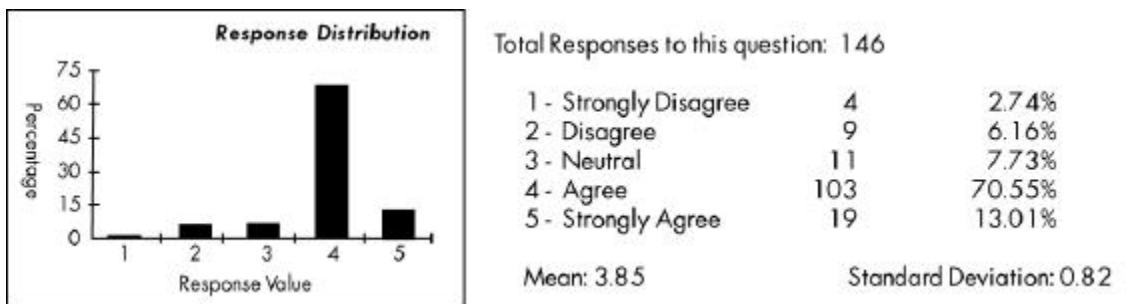


Figure 13-78. *Statement 55:* During its formation the group used an independent party or neutral facilitator.

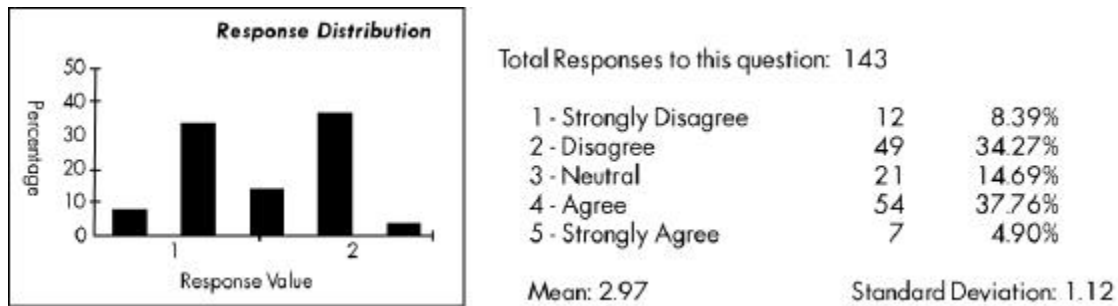


Figure 13-79. *Statement 56:* During its formation the group had effective leadership.

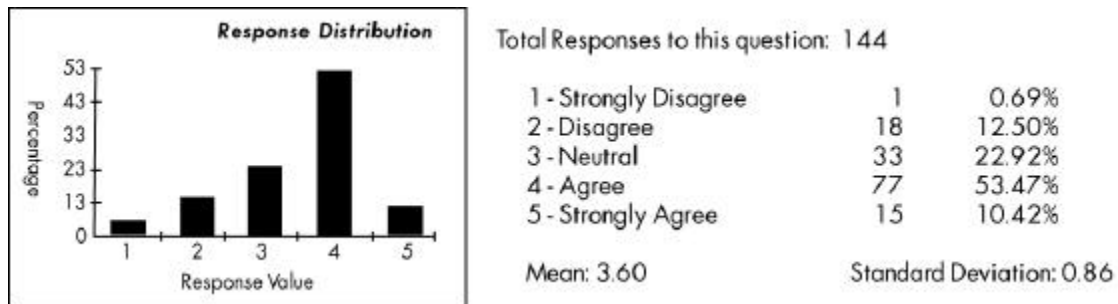
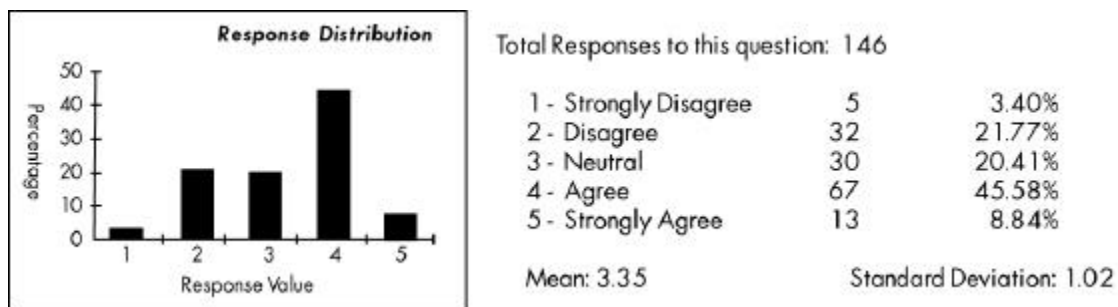


Figure 13-80. *Statement 57:* During its formation the effort to form the group was efficient and effective.



Variations Between Basins in the West

The data presented in this chapter from the Natural Resources Law Center survey and Hart survey are not readily comparable, as the former focuses primarily on the description of watershed initiatives, while the latter focuses primarily on the qualities and experiences of participants. Consequently, the two data sets cannot easily be compared against each other in an effort to document inter-regional differences between the Northwest and the remainder of the West. To facilitate comparisons between regions in the West, the data from the Natural Resources Law Center survey has been separated into the same seven regional basins used to organize the presentation of case studies in chapters 5 through 11. Four areas of comparison are presented in the following pages, in Figures 13-81 to 13-84.¹⁹⁶

In Figure 13-81, data is presented pertaining to the types of environmental problems faced by watershed initiatives. Although variations are shown from basin to basin, in each region water quality is either the first or second most frequently listed concern. No other issue is so universally recognized as a major concern. This finding was expected, as it is consistent with earlier research by the Natural Resources Law Center. In contrast, the frequency of watershed initiatives citing concerns for water supply/flow regime issues seems to be increasing faster than anticipated.

Figure 13-82 examines participation in watershed initiatives. Much like Figure 13-81, the most dominant finding in Figure 13-82 is not a difference between basins, but a glaring similarity: namely, the predominance of governmental representatives (at the federal, state and local levels) in western watershed initiatives.¹⁹⁷ Among federal participants, the consistently high involvement across basins of Natural Resources Conservation Service (NRCS) personnel is particularly noteworthy. This data is shown in Figure 13-83.¹⁹⁸

The budget figures shown in Figure 13-84 provide the biggest surprises. Typically, it is assumed that the Columbia River-Pacific Northwest groups are funded at the highest levels, but that perception is clearly not supported by our data. It should be remembered, however, that many of the groups in the Northwest focus on relatively small watersheds, suggesting that this region may, in fact, be a leader in “per-acre funding.” Also, the sheer number of groups in the Northwest ensures that funding for watershed restoration in the region is superior to other regions of the West. Still, many of the budget numbers are surprising, particularly the finding that 93 percent (or 13 of 14) South Platte-Missouri Basin groups have budgets exceeding \$20,000. The dearth of funding for Colorado River groups is also quite pronounced.

¹⁹⁶ Given the small sample sizes for the Arkansas, Great Basin, and Rio Grande Basins, the figures presented should be used cautiously.

¹⁹⁷ Tribal representation is somewhat spotty, but partially reflects the non-uniform distribution of tribal lands.

¹⁹⁸ Ironically, it is the California-South Pacific Region with the lowest level of NRCS participation listed, a very surprising finding given the vast number of CRMP (coordinated resource management program) groups in California, and the fact that California respondents rated land-use/management as their most common environmental concern (*see* Figure 13-81). We suspect that our sample of California watershed initiatives is not representative of the region as a whole in regards to NRCS participation.

Figure 13-81. Environmental Problems Within Watersheds By Basin
 Percentage of Groups Reporting the Listed Concerns

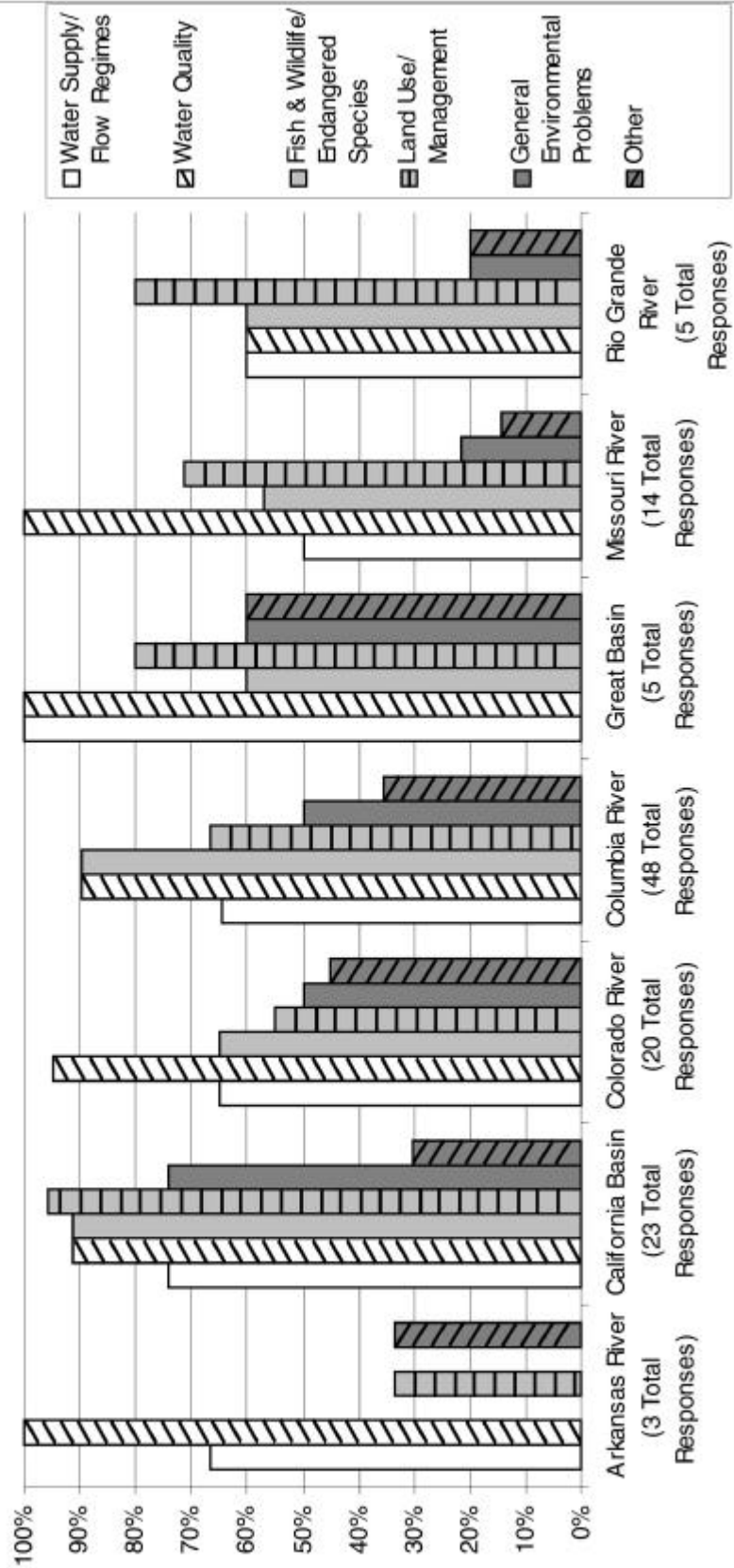


Figure 13-82. Source of Groups Reporting the Listed Agencies/Organizations

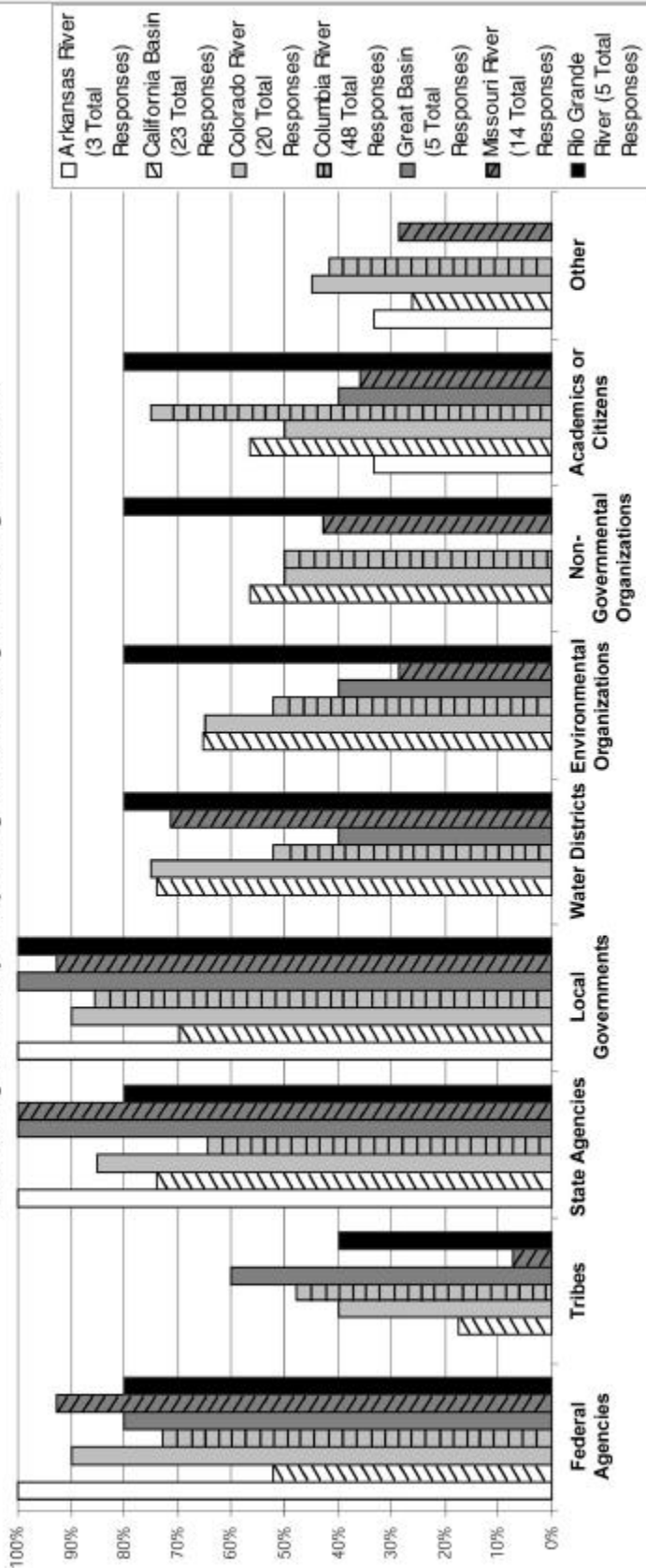


Figure 13-83. Source of Groups Reporting The Listed Federal Agencies By Basin

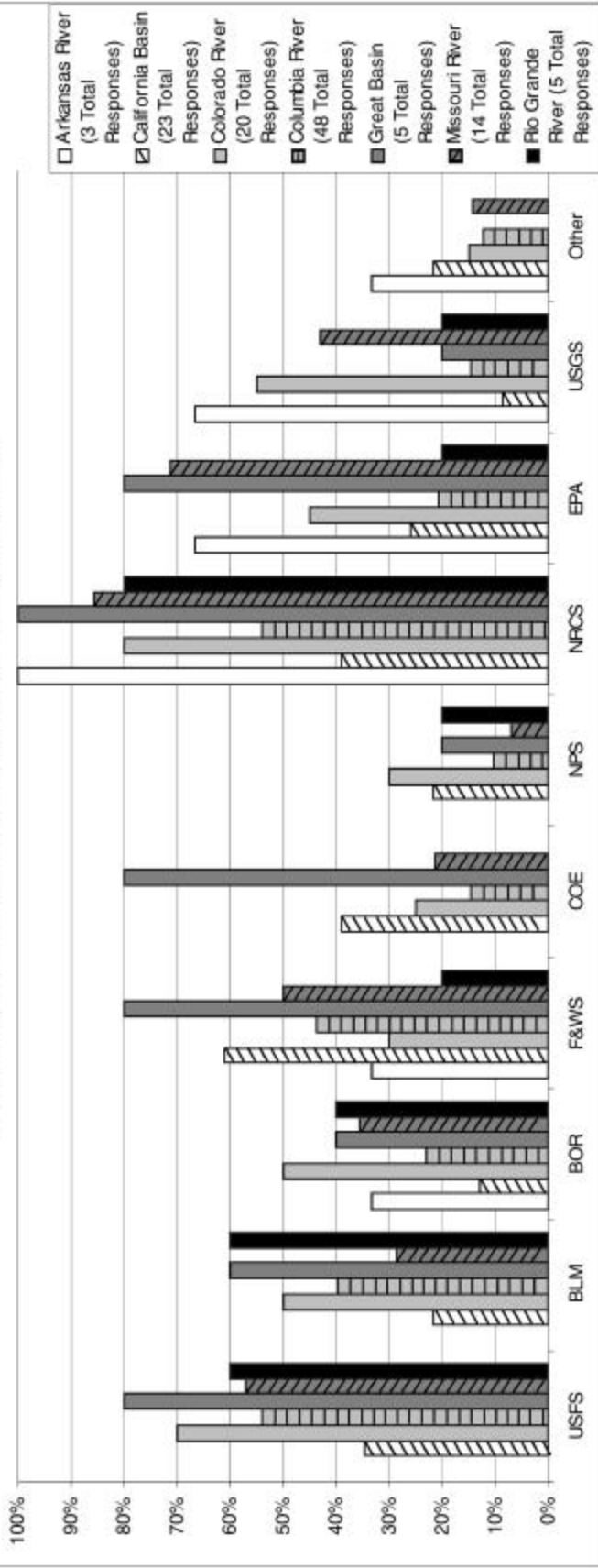
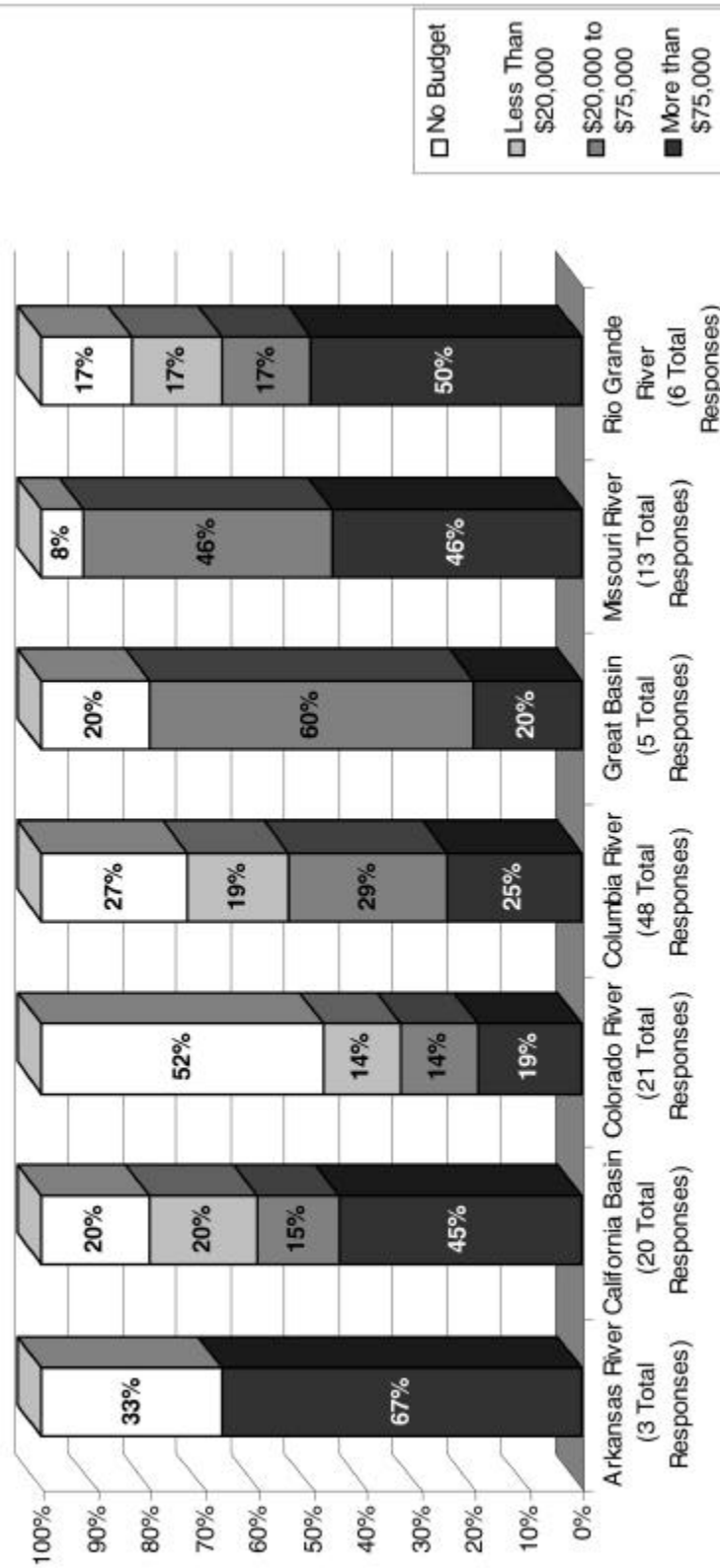


Figure 13-84. Current Annual Budget By Basin



Concluding Thought

The statistical information presented herein is perhaps most valuable as a reminder that generalizations about watershed initiatives are just that: generalizations. One of the most fascinating characteristics of the western watersheds movement is the diversity of approaches. On the other hand, it is worth observing that within a given sub-region and at any point in time, many common threads can be found within the otherwise tangled mess of contradictions. Hart and Dakins, for example, are finding that their data shows surprisingly minor (and statistically insignificant) differences among Oregon watershed initiatives compared using the following three criteria: government-formed versus citizen-established groups, consensus versus voting groups (and hybrid voting/consensus groups), and restricted membership versus open membership initiatives. These observations suggest that researchers and practitioners need to be cautious in making assumptions about what qualities are typical and which lessons are transferable. These are exceedingly complicated issues. The challenge, thus, is to skillfully apply the lessons distilled from the trends in a manner respectful of each situation's unique context. Despite the desire of many parties to identify and replicate an ideal model, it is likely that this process will demand a much more incremental and diversified approach.

Chapter 14

Issues of Appropriateness and Success

Introduction

The more details we learn about watershed initiatives, the stronger we are pulled back to very basic questions: e.g., Are watershed initiatives an appropriate way to address resource management problems? Do they really work? As it turns out, these questions are the most difficult to answer. Yet, they undoubtedly are the most important questions on the research agenda, as it would certainly be unwise to waste such an outpouring of enthusiasm, effort, and hope on a mirage. While these are not questions the research community can currently answer with any precision, a significant body of thought and data has begun to emerge.

The Issue of Success

Defining Success

One reason why it is so difficult for researchers to reach meaningful conclusions about the merits of watershed initiatives is that the definition of success raises complex issues (Kenney, 1999a). Of particular concern is the notion that success, in practice, is frequently defined using two different criteria. The first criterion suggests that success can be measured by “organizational and process outcomes” related to group formation, dispute resolution, and trust building. This definition also can rely on “activity measures” such as plan development or public education. Certainly these are achievements of note.

The second definition raises the bar higher, requiring that watershed initiatives be judged according to their success in achieving on-the-ground outcomes. As discussed earlier, most watershed initiatives are formed to solve tangible on-the-ground problems, such as water quality deficiencies and ecological degradation. Consequently, one way to measure success is through the use of water quality indices, or measures of species health.

At the Natural Resources Law Center, we understand that both definitions potentially have merit and can coexist. However, we agree with those who argue that success must *ultimately* be measured by what happens on the ground. Additionally, we believe that organization and process outcomes must be linked to—perhaps even be a prerequisite to—on-the-ground accomplishments to have true validity as a success criterion. With this perspective in mind, we have offered the following—admittedly imperfect—definition of success (adapted from Kenney, 2000:10):

A watershed initiative is successful if it contributes (or can be reasonably expected to eventually contribute), in whole or in part, to the achievement of on-the-ground natural resource objectives, defined in accordance with prevailing social norms and laws, beyond what would have occurred (or will likely occur) in the absence of the watershed initiative.

Measuring Success

Articulating a workable definition of success seems to be a chronic shortcoming plaguing many investigations concerned with “alternative” problem-solving modes, including environmental/alternative dispute resolution, negotiated rule-making, and the various types of “collaborative groups” of which watershed initiatives are prominent members. As d’Estree et al. (1999:14) have observed, “Most works on evaluating resource / public dispute resolution start from an assumption that either litigation or ADR [alternative dispute resolution] is preferable, and then cite cases to support this argument.” This approach is best described as advocacy research, and is characterized more by dogma than by scholarship. This problem seems particularly pervasive in the watersheds movement, which is buttressed by a vast body of literature praising this management approach and offering recommendations for still improved performance. Less common, but equally dogmatic, is a growing body of reports and essays authored by skeptics and critics of watershed initiatives, mostly environmentalists and academics (Kenney, 2000). Only by reviewing both literatures does the complexity of defining success emerge.

Table 14-1 summarizes the range of arguments, for and against, watershed initiatives (and similar collaborative groups).¹⁹⁹ Note that a distinction is made between arguments which are “positive” (in presuming to describe an existing situation) and/or “speculative” (describing an expected future situation), and those which are “normative” (describing an appropriate or ideal situation). These distinctions are valuable in that they delineate the limits of research, and similarly, show the futility of trying to offer a definitive answer to the questions surrounding watershed initiative success. Presumably, the “positive” arguments can be critically addressed by research; the “speculative” arguments are, as the name implies, subject only to educated guesses; and the “normative” opinions are purely value-based opinions, based on differing notions of fairness or appropriateness. To the extent that all these arguments are central to the debate of watershed initiative success, we must accept that any conclusions regarding the effectiveness of these efforts are bound to be incomplete. This, however, does not diminish the importance of the undertaking.

A few authors and publications have made attempts to address these problems by devising schemes of various types of criteria or benchmarks that can be used in a systematic way to evaluate watershed initiatives. While most lists emphasize organizational achievements, the most complete evaluation schemes also recognize the importance of on-the-ground measures. One such example is found in the Fall 1997 issue (Volume 8, Number 3) of *River Voices*, the

¹⁹⁹ This table is adapted from *Arguing About Consensus* (Kenney, 2000), a publication of the Natural Resources Law Center addressing in detail the arguments for and against collaborative processes.

Table 14-1. Summary of Arguments Raised to Defend and Challenge the Use of Watershed Initiatives in Natural Resources Management and Problem-Solving

ARGUMENTS OF THE PROPONENTS	ARGUMENTS OF THE SKEPTICS
<i>Positive Arguments (i.e., arguments presumably based on facts) and Speculative Arguments (i.e., those based on expected future outcomes).</i>	
Traditional means of management and problem-solving do not work now, and/or will not work in the future. Watershed initiatives offer greater future problem-solving potential.	Existing processes of decision-making and problem-solving, while imperfect, are not fundamentally flawed, and create the context within which collaboration can be attempted.
Even if watershed initiatives are not successful, they are (and will be) no worse than existing mechanisms.	Due to problems of inadequate representation, unequal resources, and the limits of consensus, watershed initiatives may exacerbate unfair concentrations of power and have a coercive affect on minority viewpoints.
Many watershed initiatives have already achieved significant organizational objectives. Some have also already achieved significant on-the-ground results.	Organizational achievements may not lead to on-the-ground results—the only valid measure of effectiveness. Many “success stories” lack empirical proof, and involve implementing obvious solutions to easy problems—not a real test of success.
Consensus processes help to overcome historic animosities, encourage learning and compromise, and facilitate problem-solving in a way that adversarial and highly formalized processes cannot.	A reliance on consensus discredits value differences, ensures that zero-sum problems cannot be addressed, encourages “lowest common denominator” decisions, and provides few due process protections.
Collaborative processes offer advantages in time, money, and “durability” of outcomes.	The costs of participating in collaborative processes are significant, and are usually in addition to—rather than instead of—costs of other traditional processes.
<i>Normative Arguments (i.e., arguments based on personal notions of right and wrong, and based on desired—rather than actual or predicted—conditions).</i>	
Local residents should be more involved in decisions that have local consequences. The role of citizens in decision-making should be enhanced.	The views of distant stakeholders should have equal weight in decisions involving public resources. Public officials should make decisions about public resources.
Collaborative processes are inherently preferable to those based on conflict. Consensus-building activities build cohesive communities more capable of pursuing appropriate social, economic and environmental goals.	Conflict oriented processes—namely litigation—provide a healthy mechanism for expressing, rather than suppressing, divergent opinions. Managed conflict, rather than suppressed conflict, is the real measure of a healthy democracy.

quarterly publication of River Network. That scheme provides measures in the following categories following an adaptive management philosophy: Genesis (of the watershed approach), Incubation and Initiation (i.e., early steps at group organization), Definition (e.g., agenda setting), Analysis (i.e., joint fact-finding), Outreach (i.e., community education and involvement), Decision (e.g., plan development), Action (i.e., project implementation), Evaluation (i.e., periodic review of organizational design and field-level efforts), Revision (i.e., implementing course corrections), and Renewal (i.e., long-term measures of success, both organizational and on-the-ground).²⁰⁰ Guidelines are also emerging from the federal agencies, subject to requirements specified in the Governmental Performance and Results Act.²⁰¹

Efforts to establish clear evaluation criteria are worthwhile, but all efforts of measuring success are ultimately limited by the existence of different normative ideas about what approaches are “appropriate” or “inappropriate,” and by the difficulty of definitively linking process and outcomes. Additionally, there is the problem of youth. If you accept the premise that watershed restoration is often a highly difficult endeavor, then it seems reasonable to expect it to take several years, perhaps decades, before the utility of any remediation strategy to be determined. This observation, combined with the fact that most watershed initiatives are relatively recent creations, suggests that the true effectiveness of watershed initiatives may not be apparent for several years. This is obviously a serious research complication, as policy-makers are eager to identify and replicate “successful” models immediately.

Potentially Relevant Publications and Findings

While precisely defining and measuring success may remain an elusive goal, there is existing research that sheds some light on these questions. Especially in the so-called “gray” (non-scholarly) literature, there is no shortage of general advice about what makes watershed initiatives succeed—even if success remains a difficult parameter to define or measure, and even though many efforts are too immature to have actually achieved on-the-ground results. Additionally, a scholarly literature of western watershed initiatives is beginning to emerge.

The “Lessons Learned” Literature

Largely due to the formidable methodological constraints, much of the published material about effectiveness is, in actuality, an inventory of key structural and functional qualities that are judged by participants as contributing to success—however imprecisely defined. One of the best known of these publications is the *Top 10 Watershed Lessons Learned*, a publication of the Environmental Protection Agency (1997) that concluded:

²⁰⁰ This scheme is primarily the work of Sari Sommarstrom, a participant in River Network’s “Four Corners Watershed Innovators Initiative” comparing watershed management approaches in different regions of the United States.

²⁰¹ The efforts of several federal agencies, and a few other entities, to define and measure success are summarized in *EPA Watershed Events* (Fall 1995).

1. The Best Plans Have Clear Visions, Goals, and Action Items
2. Good Leaders are Committed and Empower Others
3. Having a Coordinator at the Watershed Level is Desirable
4. Environmental, Economic, and Social Values are Compatible
5. Plans Only Succeed if Implemented
6. Partnerships Equal Power
7. Good Tools Are Available
8. Measure, Communicate, and Account for Progress
9. Education and Involvement Drive Action
10. Build on Small Successes

A similar inventory of “keys to success” was compiled from the Natural Resources Law Center’s watershed survey conducted as part of the *Source Book* revision. Each respondent was asked to identify up to three key factors. The responses varied widely and used a variety of terms. Nonetheless, several useful groupings emerged. The following list features the ten most common responses, by category:

1. Not surprisingly, the most frequently cited key to success of these watershed initiatives was *collaboration, consensus and/or participation by stakeholders*. Almost 60 percent of all respondents listed this as a key to their success. Clearly, stakeholder collaboration and consensus is viewed as a central defining element of watershed initiatives.
2. The next most commonly listed key to success was *consistent funding and/or paid staff*. Over 25 percent of all respondents listed funding and/or paid staff as essential to success. This response is parallel to other responses in the watershed survey. When asked which institutional barriers impeded their progress, the most frequent response by watershed initiatives was inadequate attention/funding being given to the natural resource problem. In addition, nearly half of the respondents said that their funding was inadequate to meet short term goals.
3. Approximately twenty percent of the respondents listed the *education of participants and/or the public* as a key to success. This response corresponds to the high level of attention that most watershed initiatives give to education efforts. Around two-thirds of the surveyed watershed initiatives indicated they were engaged, or planned to be engaged, in some type of educational activity.
4. Nearly 10 percent of the respondents suggested that *coordination of participants/agency efforts* was a key to success. This response is similar to the respondents recognition of inadequate interagency or interjurisdictional coordination as the second most cited institutional barrier to the success of watershed initiatives.
5. Approximately 10 percent of the respondents listed *on-the-ground projects/modifications* as a key to success. This response is lower than expected given that nearly 75 percent of the groups said they were in the process, or planning, on-the-ground remediation projects.

6. Around 7.5 percent of respondents felt that *clearly identifying the problem* was a key to success.
7. Another 7.5 percent of the responses listed *following through on goals* as a key to success.
8. Some 5 percent of the groups listed *leadership* as a key to success. This level of response is lower than expected given the widespread belief by academics that leadership is an essential component of success to these endeavors. (For example, see the Chapter 15 case study of the Animas River Stakeholders Group.)
9. Approximately 5 percent listed a *long-range vision or outlook* as a key to success.
10. Another 5 percent listed the *government and/or stakeholder buy-in/investment in the project* as a key to success.

Additional keys to success cited by 3 percent or fewer of the groups included: volunteer help, an immediate problem to address, technical assistance, good media exposure/coverage, enforcement of existing laws, empowerment of group members, customizing planning, flexibility, and finally, population control.

Still additional insights about lessons learned and keys to success can be distilled from periodicals such as the *Chronicle of Community*²⁰², and from the many how-to guidebooks offered to assist efforts in watershed-based resource management. Some of these publications include:

- *Starting Up: A Handbook for New River and Watershed* (River Network, 1999).
- *Watershed Stewardship: A Learning Guide* (Oregon State University Extension Service, 1998).
- *Watershed Partnerships: A Strategic Guide for Local Conservation Efforts in the West* (by Jo Clark for the Western Governors' Association, 1997).
- *Beyond the Hundredth Meeting: A Field Guide to Collaborative Conservation on the West's Public Lands* (by Barb Cestero for the Sonoran Institute, 1999).

Academic Publications

Undoubtedly, the insights provided by practitioners and summarized in the “lessons learned” literature are a valuable component of the watersheds literature. Those looking for relevant scholarly investigations have fewer choices. If the western watersheds movement is placed into a larger context, then the literature of alternative dispute resolution (ADR)—and the special variant, environmental dispute resolution (EDR)—is potentially relevant. In this literature, the

²⁰² The *Chronicle of Community* is a publication of the Northern Lights Institute in Missoula, Montana.

issue of measuring success arises in several contexts. However, despite the efforts of several skilled and thoughtful researchers, the methodological constraints of measuring success generally limit the breadth and usefulness of these inquiries (d'Estree et al., 1999). Like the watersheds literature, this literature has a wealth of “lessons learned,” but is generally lacking in analysis or empirical data. Gail Bingham’s (1986) landmark book on EDR remains as the most serious attempt to empirically measure success and failure of consensus-based processes.

Scholarly research focusing on western watershed initiatives is increasing. Perhaps the best attempt to systematically evaluate the performance of western watershed initiatives was recently produced by Sommarstrom and Huntington (1999) for the Pacific Rivers Council and Trout Unlimited.²⁰³ In this study, the authors used a diversity of performance measures to evaluate 14 watershed initiatives concerned with ecological restoration in the Pacific Northwest.²⁰⁴ Each of the watersheds chosen have streams with impaired water quality, and all but one are home to salmon species listed under the Endangered Species Act. The investigation, predictably, yielded mixed results. For example, 13 of the 14 groups studied had implemented on-the-ground environmental restoration projects, with most producing ecological benefits: 52 percent (of projects) were clearly beneficial, and another 36 percent were likely beneficial. Particularly beneficial were activities such as fencing off riparian areas, road treatments, and installation of fish passage systems. However, the authors also identified several problems, concluding that about 10 percent of restoration projects had poor designs and about 67 percent of restoration projects were negatively affected by environmental stressors that the groups could not (or did not) control (e.g., water diversions, upstream land-uses).²⁰⁵

Also exciting are more explicitly comparative studies, such as the work that came out of River Network’s “Four Corners Watershed Innovators Initiative.” The premise of this effort was to connect researchers with watershed practitioners/administrators from four regions of the country considered to have “innovative” programs: California, Massachusetts, Washington, and Florida. While still primarily a gathering and informal analysis of stories from the field, a strong undercurrent of objectivity and scholarship permeated the effort, leading to unusually balanced and thoughtful conclusions (e.g., Born and Genskow, 1999). Comparative studies have the inherent advantage of not requiring absolute measures of success, but rather are based on relative measures. Since a given level of success is only significant in comparison to the success possible through other strategies, comparative studies have an obvious appeal.

²⁰³ As of February 2000, the report can be viewed online at <http://www.pacrivers.org/alerts/watershed.html>.

²⁰⁴ The study focused on eight groups in Oregon, two in Washington, two in Idaho, and two in northern California.

²⁰⁵ To the extent that some watershed initiatives struggled to achieve their restoration goals, the authors identified three primary impediments. First, the inability to control or significantly influence large-scale processes in the watershed, such as urbanization or timber harvest patterns. Second, many groups, for a variety of reasons, failed to adequately prioritize (spatially) restoration activities. And third, many efforts were limited by a shortage of cooperative landowners. Generally, the performance of the more urban watershed initiatives was best, prompting the authors to conclude that this may be due to their easier access to technical and financial resources than more rural areas. Many watershed initiatives also were hindered by intractable issues, and by inadequate decision-making procedures. Conversely, the initiatives studied generally were highly effective in creating awareness of problems and improving relationships among stakeholders. Achieving greater successes will likely require providing greater technical resources/skills, improved monitoring, more explicit self-evaluation and adaptation, and a greater financial commitment.

Additional scholarship can be found in the publications of several university programs, such as the Natural Resources Law Center at the University of Colorado and the School of Natural Resources and Environment at the University of Michigan. In fact, many of the most interesting studies are being conducted by graduate students, such as the aforementioned and ongoing work (chapter 13) of Mike Hart at the University of Idaho; the investigation of Laninga (2000) at the University of Colorado comparing the geographic focus of watershed initiatives to goals, actions, and levels of success; the evaluation of public lands groups by Karen Firehock (1993) at the University of Maryland; and the voluminous assessment of collaborative resource management partnerships by Coughlin et al. (1999) at the University of Michigan. Dozens of other, perhaps more worthy, examples can be identified, although the limited distribution of theses and dissertations makes this work largely inaccessible to a broad audience.

In an effort to address the lack of serious scholarship regarding watershed initiatives and similar efforts at collaborative resource management, a community-based collaboration (CBC) consortium of researchers, practitioners, and other concerned parties was recently formed, under the leadership of the Udall Center for Studies in Public Policy at the University of Arizona and the Institute for Environmental Negotiation at the University of Virginia. At an initial meeting in October 1999, a research agenda was devised calling for additional work better assessing issues of success and appropriateness regarding western watershed initiatives. Perhaps this consortium will provide for vehicle for addressing many of the still-unresolved questions about the performance of watershed initiatives. Even then, however, it will be the passage of time, as much as the efforts of researchers, that will best measure the success of watershed initiatives.

Satisfaction of Participants

One estimate of effectiveness is to ask people if they are satisfied with the performance of the watershed initiative in which they participant. Given that participation in watershed initiatives is normally voluntary, it is expected that active participants will view the efforts of their initiatives favorably. If not, there would be few reasons to participate. It is also to be expected that skeptics/critics of these efforts are likely not to participate, as most feel such participation would be inappropriate and/or ineffective. Because of this, it is difficult to assess the merits of watershed initiatives simply by surveying participants. On the other hand, it would be foolish not to consider the insights of that population.

As shown earlier in Figures 13-19 and 13-21 (chapter 13), respondents to the Natural Resources Law Center's survey generally indicated that they felt their watershed initiatives were moderately successful. Approximately 66 percent (72 of 109) indicated "moderate success" in addressing the natural resource issues of concern; similarly, 49 percent (53 of 108) reported "moderate success" in addressing the institutional problems. However, only 17 percent (18 of 109) described their watershed initiative as "very successful" in addressing the natural resource concerns, the same response level as the "relatively unsuccessful" category. Additionally, only 19 percent (20 of 108) described their watershed initiative as "very successful" in addressing the institutional problems, a figure smaller than the 29 percent (31 of 108) selecting the "relatively unsuccessful" category. Thus, to the extent that satisfaction can be (or should be) equated with problem-solving success, the watershed initiatives described in the *Source Book* case studies are viewed by participants with a moderate level of satisfaction.

The Hart survey of Oregon watershed initiative participants is particularly well suited to measuring participant satisfaction, given that the focus of the Hart survey was to document opinions of participations, rather than to describe initiatives—the primary goal of the Natural Resources Law Center's survey.²⁰⁶ A variety of statements/questions from the Hart survey pertain to "levels of satisfaction. In Table 14-2 (below), 16 of these statements/questions have been selected and grouped according to their relevance to three issues of concern: (1) adequacy of representation and membership, (2) effectiveness of group process, and (3) quality of outcomes. Responses to these questions have been collected, with the average (mean) responses provided in the table. As expected, this table suggests that the respondents are consistently positive in their assessment of their watershed initiatives, although this is a somewhat tempered enthusiasm, yielding an overall "satisfaction index" of 3.52 on a scale of 1 to 5 (with higher numbers indicating greater satisfaction).

Given that the "satisfaction index" is an artificial measure distilled from the survey data, the numbers produced are most useful when compared to each other. For example, in Table 14-2, responses to statements/questions pertaining to representation and membership produced the highest scores (net satisfaction index mean of 3.67), followed by those for group process (net satisfaction index mean of 3.51), and outcomes (net satisfaction index mean of 3.45). This suggests that respondents are more satisfied with the structural and functional properties of their watershed initiatives than with the outcomes. It is this type of cross-comparison of means,

²⁰⁶ See Appendix A for the full text of the Natural Resources Law Center's survey.

rather than an assessment of the absolute value of any given mean, that is likely to yield the greatest insights.

This approach can also be used to evaluate the data presented in Table 14-3, which features “satisfaction index” calculations for 14 different populations identified in the survey data.²⁰⁷ Two of the more interesting populations identified in Table 14-3 are the so-called “watershed group proponents” and “watershed group skeptics,” defined as those parties who disagreed and agreed, respectively, to statement 45: *I do not support the concept of watershed groups*. As mentioned earlier, there are few incentives for skeptics to participate in watershed initiatives, which may at least partially explain the 244-to-11 disparity between proponents and skeptics.²⁰⁸ Given the small number of skeptics in the survey population, removing the skeptics population (and their overall satisfaction index mean of 2.55) increases the overall satisfaction index mean of the remaining parties only modestly, from 3.52 to 3.62. This suggests that the somewhat tempered enthusiasm for watershed groups in Oregon is not merely the result of skeptics who reject the premise of watershed initiatives, but reflects a broader base of concern. As shown in Table 14-3, among the least satisfied respondent populations are an unusual grouping of federal and state resource managers, extractive industry representatives (timber and mining), private citizens and environmentalists.²⁰⁹ Among the most satisfied interests are local governments, private companies, and agricultural and recreation interests.

²⁰⁷ These populations were identified based on their answers to statements/questions 29, 32-36, and 45.

²⁰⁸ This study is not designed to answer questions about the relative proportion of proponents to skeptics in the general population.

²⁰⁹ Note that the environmentalists are not necessarily members of established environmental organizations, but are simply respondents that indicated in Statement 36 that they are part of the environmental movement. In many cases, these respondents would not likely be recognized as allies to the mainstream environmental organizations. For example, if data for agricultural industry, timber industry, and mining industry affiliates are combined, over half of this group (84 of 156) consider themselves as environmentalists. These sectors are frequently the targets of environmental regulation and activism, and are generally not associated with organized environmentalism. It is not appropriate herein to question the “environmental credentials” of these parties nor to suggest that only members of the mainstream environmental community are “real” environmentalists, but rather to suggest that the environmental community has several tributaries, some of which are more supportive of watershed initiatives than others.

Table 14-2. Estimates of “Satisfaction” of 276 Watershed Initiative Participants in Oregon (adapted from Hart survey data, 1999).	
Statement ^a	Mean ^a
<i>Statements (adjusted) Pertaining to Representation and Membership</i>	
1. The watershed group with which I am associated is well balanced.	3.61
3. The watershed group with which I am associated defines its membership in an appropriate manner.	3.70
6. The watershed group with which I am associated is representative of interests in the watershed. ^a	3.83 ^a
18. The watershed group with which I am associated has effective leadership.	3.53
SUB-TOTAL	3.67
<i>Statements (adjusted) Pertaining to Group Process</i>	
2. The watershed group with which I am associated uses an effective process to reach decisions. ^a	3.29 ^a
5. The watershed group with which I am associated is well organized. ^a	3.62 ^a
7. The watershed group with which I am associated gives fair consideration to dissenting opinions.	3.71
8. The watershed group with which I am associated addresses difficult or controversial issues.	3.62
9. The watershed group with which I am associated address issues in a timely manner. ^a	3.33 ^a
SUB-TOTAL	3.51
<i>Statements (adjusted) Pertaining to Outcomes, Effectiveness and Performance</i>	
4. The watershed group with which I am associated is effective.	3.32
11. The watershed group with which I am associated provides useful recommendations to decision-makers.	3.38
12. The watershed group with which I am associated has improved physical conditions in the watershed. ^a	3.15 ^a
15. The watershed group with which I am associated has a positive impact on government decisions.	3.18
16. The watershed group with which I am associated facilitates effective exchange of viewpoints on watershed issues.	3.73
19. The watershed group with which I am associated contributes to trust among participants.	3.50
46. Because of the group, I better understand issues in the watershed.	3.87
SUB-TOTAL	3.45
TOTALS OF ALL STATEMENTS (3 categories weighted equally)	3.52
<i>Data in the boxes are the mean (or adjusted mean) based on the following scale:</i>	
Negative Opinion ----- Positive Opinion 1 (strongly disagree) 2 (disagree) 3 (neutral) 4 (agree) 5 (strongly agree)	
a = In order to facilitate direct comparisons, statements 2, 5, 6, 9 and 12 have been slightly rephrased to produce affirmative statements. For these statements, the means have also been correspondingly corrected. Unadjusted statements and means can be found in chapter 13.	

Table 14-3. “Satisfaction Index” for 14 Populations of Watershed Initiative Participants in Oregon (adapted from Hart survey data, 1999).				
	Grouping of Statements Used to Calculate the “Satisfaction Index” [Mean (rank)] ^a			
Respondent Population (number of respondents)	Representation and Membership	Group Process	Outcomes, Effectiveness & Performance	Overall (all statements in index)
<i>Most Satisfied Respondent Populations</i>				
Local government representatives (43) ^b	3.78 (2)	3.77 (1)	3.62 (1)	3.71 (1)
Private company representatives (26) ^b	4.04 (1)	3.45 (9)	3.52 (4)	3.63 (2)
Watershed group proponents (244) ^d	3.77 (3t)	3.59 (2)	3.55 (2t)	3.62 (3)
Organization representatives (42) ^b	3.77 (3t)	3.51 (6t)	3.55 (2t)	3.59 (4)
Agricultural industry affiliates (95) ^c	3.73 (5)	3.56 (3)	3.48 (5)	3.57 (5)
Recreation industry affiliates (70) ^c	3.67 (6t)	3.55 (4)	3.46 (6t)	3.54 (6)
All respondents (276)	3.67 (6t)	3.51 (6t)	3.45 (8)	3.52 (7)
<i>Least Satisfied Respondent Populations</i>				
Environmental movement affiliates (135) ^c	3.67 (6t)	3.50 (8)	3.42 (9)	3.51 (8)
Private citizens (95) ^b	3.63 (9)	3.52 (5)	3.40 (10)	3.49 (9)
Timber industry affiliates (62) ^c	3.61 (10)	3.37 (11)	3.28 (12)	3.39 (10)
State agency representatives (29) ^b	3.41 (12)	3.39 (10)	3.29 (11)	3.35 (11)
Federal agency representatives (22) ^b	3.38 (13)	3.24 (12)	3.46 (6t)	3.32 (12)
Mining industry affiliates (7) ^c	3.43 (11)	3.17 (13)	3.14 (13)	3.22 (13)
Watershed group skeptics (11) ^d	2.57 (14)	2.71 (14)	2.43 (14)	2.55 (14)
<i>Data in the boxes are the mean (or adjusted mean) based on the following scale:</i>				
Negative Opinion ----- Positive Opinion				
1 (strongly disagree) 2 (disagree) 3 (neutral) 4 (agree) 5 (strongly agree)				
a = See Table 14-2 for a listing of statements. b = Based on answer to question 29. c = Based on answer to questions 32-36. d = Proponents answered strongly disagree or disagree to statement 45, while skeptics answered agree or strongly agree.				

Several other findings can be found in Table 14-3. Of course, these findings are only applicable to Oregon’s watershed program—which is certainly not representative of programs in most other states, although it may represent the future of many emerging programs. Additionally, they are based on a relatively simple grouping and analysis of the survey data. Nonetheless, the following findings are likely among the most worthy of further attention:

- Federal and state agencies generally appear less satisfied than most other parties with most facets of watershed initiatives in Oregon, particularly regarding issues of representation and membership. Relatively high federal agency satisfaction with the “outcomes” measures is a notable, yet isolated, exception. Should agency personnel continue to find these efforts less satisfying than their co-participants, this may reduce the willingness of agencies to commit resources to these efforts.
- Representatives of private companies are among the most satisfied populations overall in the Oregon survey, but appear frustrated with the group process characteristics of these efforts. This contrasts with the view of private *citizens* who are less satisfied (than private *companies*) overall, but are more satisfied with the nature of group process. This may reflect a desire on the part of the private citizens to discuss and deliberate issues past a point at which private companies may believe decision-making and action should have already occurred.²¹⁰
- The issue of performance, especially on-the-ground performance, is emerging as a key issue in Oregon and elsewhere. It is worthwhile to note that every group in the Oregon survey except the “skeptics” provides a ranking in the “outcomes, effectiveness and performance” category above 3.0 (the midpoint between dissatisfaction and satisfaction). Yet, 11 of the 14 populations reserve their lowest score on the satisfaction index for this grouping of outcomes-related statements. Additionally, the single lowest mean (for the “all respondents” population) for any of the statements/questions in the satisfaction index is the adjusted mean of 3.15 for question 12: *The watershed group with which I am associated has improved physical conditions in the watershed* (adjusted for tone, as described in Table 14-2, note a).²¹¹

Concluding Thought

Defining and measuring the success of western watershed initiatives is extremely difficult, especially if on-the-ground measures of effectiveness are sought. It is also extremely important. As Born and Genskow (1999:52) observed, reflecting on the Four Corners Watershed Innovators Workshop:

²¹⁰ In fact, the most negative response to any of the 16 questions in the satisfaction index by the private companies respondents was to statement 2, which reads: *The watershed group with which I am associated uses an effective process to reach decisions* (mean of 2.92). (This data is not shown in the tables provided.)

²¹¹ Furthermore, it is state agency representatives who provide the most critical adjusted mean to this statement (2.89), which is interesting given the primacy of state funding and support for watershed groups in Oregon. (This data is not shown in Table 14-3.)

There was little disagreement among . . . participants that results of watershed partnerships should be measured in terms of environmental outcomes. Unfortunately, changes in the watershed environment may take years, and attributing changes to specific management interventions can be difficult.

While we wait for clearer answers to emerge from the field, we have little choice but to settle for subjective data from participants, and assessments that are based primarily on the achievement of organizational and process objectives. More objective and results-oriented assessments are possible, but entail significant methodological constraints and budgetary demands.

The data we have suggests the performance of watershed initiatives is mixed, not a surprising finding given the diversity of efforts and the various criteria upon which such assessments can be based. This finding is sufficient to encourage continued experimentation, but is not adequate to support any grander conclusions.

Chapter 15

A Closer Look: The Case of the Animas River Stakeholders Group

Introduction

The concise case studies of watershed initiatives and forestry partnerships provided in the *Source Book* provide a useful introduction to community-based conservation in the West. However, in order to get a better feel for some of the challenges and opportunities associated with this form of problem-solving, it is useful to look a little closer. This has been done in several ways in this publication, including through the presentation of statistics transcending any one watershed initiative and the evaluation of the relevant literature findings pertaining to issues of success and appropriateness.

In this chapter, we continue to delve deeper into the western watersheds movement by examining one case study in detail: the Animas River Stakeholders Group.²¹² It would be incorrect to characterize this group as “typical” of all watershed initiatives; in fact, it is debatable if any group could be so described. However, it is not the purpose of this chapter to describe a “representative” effort—that is better accomplished through the statistical review in Chapter 13. Rather, the goal here is to illuminate some of the uniqueness associated with a given watershed initiative.

An Overview of the Animas River Stakeholders Group

The Animas River Stakeholders Group (Stakeholders Group) is a highly developed community-based watershed initiative in southwestern Colorado. The mission of the Stakeholders Group is “to improve water quality and habitats in the Animas River through a collaborative process designed to encourage participation from all interested parties.”²¹³ Unlike most watershed initiatives concerned with water quality issues, the Stakeholders Group has been given responsibility for establishing actual water quality standards for the upper Animas Basin. This is a complex undertaking in this region populated by acidic discharges from abandoned mines. This unofficial delegation of authority by the state does not exactly fit under the current structure of federal and state law. In fact, the whole process is enough of a concern to the Environmental Protection Agency (EPA) that it is considering imposing its own

²¹² This chapter is largely adapted from *The Confluence of a River and a Community* by Sean McAllister, scheduled for publication in the *University of Denver Water Law Review* (summer 2000) and portions of that article are reprinted with permission herein.

²¹³ See Animas River Stakeholders Group, *Mission, Goals, Objectives & Policies* (visited April 4, 1999) http://www.waterinfo.org/Stakeholders_Group/mission.html.

standards for the upper Animas Basin. In part, this concern reflects the inability of the group to meet the original deadline provided by the Colorado Water Quality Control Commission for establishing water quality standards in the basin.

The Stakeholders Group has made significant progress toward producing water quality standards through numerous data gathering studies and demonstration projects. These efforts, however, have been hampered by the threat of liability under the Clean Water Act. In response, the Stakeholders Group is supporting legislative changes to the Clean Water Act that would allow third-parties to engage in voluntary cleanup activities on sites that otherwise would remain polluted. Many parties worry that changing federal law to accommodate community-based group—such as the Stakeholders Group and the Quincy Library Group (see chapter 12)—sets dangerous precedent.

The Stakeholders Group has experienced some impressive success in coordinating the activities of the numerous governmental agencies working in the basin. The Stakeholders Group has been instrumental in getting the US Forest Service and the Bureau of Land Management (BLM) to come to grips with their management responsibilities in the basin. However, these two agencies have a long history of independence that is making the task extremely difficult. In addition, federal budgetary constraints may eventually end any possibility of meaningful federal coordination in the basin.

Thus, the Stakeholders Group offers reasons for both concern and optimism, as highly difficult obstacles have thus far been only partially overcome. Additionally, the biggest challenges of the Stakeholders Group may lie ahead.

Focus of the Stakeholders Group

The Animas River originates high in the San Juan Mountains just above the historic mining town of Silverton, Colorado in the southwest portion of the state. It is the largest remaining free-flowing river in the dam-abundant West, pulsating through 700 square miles of the heart of the San Juan Mountains.²¹⁴ The Animas River flows unconstrained nearly one hundred miles south to its confluence with the San Juan River, a Colorado River tributary.

The town of Silverton lies in the heart of San Juan County and takes its name from the abundant silver deposits in the surrounding area.²¹⁵ Gold and other valuable minerals have also been found in abundance throughout most of the twentieth century. However, mining is now only a historical relict in the region. Mining reached its apex between 1900 and 1912 when the population of San Juan County peaked at an all time high of five thousand people. The last major mine in the area, the Sunnyside Mine, closed down in 1991, leaving about one-third of

²¹⁴ See Colorado Rivers Alliance, *Friends of the Animas* (visited April 10, 1999), <http://www.coloradorivers.org/Status/Animas/foa01.htm>.

²¹⁵ A wealth of information regarding Silverton's past and present can be found at the web site of the Silverton Chamber of Commerce, <http://www.silverton.org/relocation/population.htm>. This section draws heavily from that site.

the workforce of San Juan County unemployed. Today, San Juan County has a population of less than five hundred people. The town of Silverton remains cluttered with relics of the mining era that draw hordes of tourists each year to support the local economy. Other than tourist nostalgia for the "Old West," it appears that the only lasting legacy of mining in the upper Animas basin will be pollution.

Until 1934, most of the mining operations around Silverton dumped their mine wastes directly into the Animas River, primarily via three major tributaries in the upper basin: the Upper Animas River, Mineral Creek, and Cement Creek—the site of the Sunnyside Mine.²¹⁶ Other mining companies continued this practice well into the 1970s. Historical practices of overgrazing cattle and sheep also caused further degradation of water quality in the watershed. Today, an estimated 1,500 abandoned and inactive mines continue to leak acid mine drainage (“AMD”) into the watershed. Acid runoff from natural processes also is a major contributor to water quality problems.²¹⁷ As a result, the upper Animas basin has been called the most severely mining-impacted watershed in America, almost completely devoid of aquatic life (Sommers and Floyd-Hanna, 1996).²¹⁸ Further downstream (south of Silvertown), cleaner tributaries dramatically improve water quality. In fact, the Animas River below Durango is well known for its excellent trout habitat.

The Challenge of AMD Pollution

Despite the existence of several federal laws dealing with resource protection and pollution prevention, the water quality problems associated with AMD are only indirectly addressed by law (CCEM, 1998). Consequently, effective programs for AMD remediation generally do not exist (Barry, 1996). The EPA has considered, and is still considering, declaring the upper Animas basin a Superfund site if nothing is done by the state.²¹⁹ State and local governmental and private representatives in the upper Animas basin generally oppose this designation out of a fear that an EPA imposed solution would be too socially and economically costly.²²⁰ They point to the dissatisfaction of some local residents with the handling of the Summitville Mine

²¹⁶ This discussion is primarily based on data compiled by the Colorado Rivers Alliance (*Friends of the Animas*, <http://www.coloradorivers.org/Status/Animas/foa01.htm>); an interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, April 12, 1999; and the work of Frodeman (1999).

²¹⁷ The same process that produces AMD is also replicated when sulfur-laden rocks are exposed to air and water through natural processes. This process, known as acid rock drainage, is a major contributor to the degradation of water quality in some areas of the upper Animas basin (USGS, 1997). The presence of substantial amounts of acid rock drainage has led some to suggest that the focus on mining pollution alone in the upper Animas basin is a reflection of the inability of modern humans to deal comprehensively with these types of problems (Frodeman, 1999).

²¹⁸ In addition, if the proposed Animas-La Plata ("A-LP") dam project is ever built, additional impacts could occur on the Animas river attributable to water withdrawals.

²¹⁹ See Animas River Stakeholders Group, *Meeting Summary* (visited May 12, 1999), http://www.waterinfo.org/Stakeholders_Group/mtgsummary.html.

²²⁰ Under CERCLA, the EPA can recover costs from potentially responsible parties (“PRPs”). PRPs include present and past operators and owners, persons who arranged for disposal of hazardous substances, and persons who transported hazardous substances to the site. If EPA were to seriously enforce this rule in the upper Animas basin, the costs of cleanup would fall on many small landowners who were not responsible for the pollution on their land today. See 42 U.S.C. § 9607(a).

disaster as proof that the Superfund process is contentious and dismissive of local concerns.²²¹ Additionally, the use of the Superfund process would be difficult given that most of the abandoned mines in the basin are on land currently owned by parties who are not responsible for the mining pollution that still exists there. While the current owners could be liable for cleanup under state and federal law, they are essentially judgment proof due to a lack of resources.²²²

The Clean Water Act provides another potential avenue to address the water quality problems in the upper Animas basin. AMD is considered a pollutant under the Clean Water Act and mines are usually considered point sources (Barry, 1996). New or active mines or almost always have a discharge permit. However, in places like the upper Animas basin where none of the abandoned mines have discharge permits, the point source regulation of mining waste is largely ineffective. For example, in the upper Animas basin, there are only three holders of pollution discharge permits under the Clean Water Act.²²³ Even if these three sources were completely shut down, the basin would remain polluted by the 1,500 abandoned mine sites in the area.

In Colorado, the Clean Water Act is implemented by the Water Quality Control Commission (“Commission”), which “sets water quality standards and issues regulations for all surface and groundwater in the state.” The Commission, which is comprised of citizens appointed by the Governor of Colorado, sets standards based on input from the public and the recommendations and studies of the professionals at the Water Quality Control Division (“Division”).

From 1991 through 1993, the Division performed extensive “chemical, biological, and physical” studies of the upper Animas basin to determine “the potential for water quality improvement sufficient to allow naturally reproducing trout populations.”²²⁴ The study sought to prioritize for cleanup the estimated 1,500 abandoned mining sites on the various tributaries of the Animas River above Silverton.²²⁵ Numerous federal, state, local, and private interests cooperated or assisted with the study. This work confirmed that the upper Animas basin is

²²¹ At Summitville, a community-based group of Latinos or Chicanos wanted to become involved in the Superfund process and were essentially denied that opportunity by the state and federal government (Interview with Dan Randolph, Mineral Policy Center in Durango, April 12, 1999). It should also be noted that Superfund is not always opposed by local communities. In Clear Creek, the community-based watershed group has welcomed Superfund listing as a way of obtaining additional funds to support remediation work (Kenney, 1997).

²²² Provisions of the Clean Water Act allow the state to force landowners to obtain discharge permits for the abandoned mines on their land. However, given that these mines do not produce a revenue stream, and given that taking this action would be highly politically unpopular, the state has refrained from this course of action (Interview with Greg Parsons, Colorado Water Quality Control Division, April 14, 1999). Under CERCLA, there is strict liability for PRPs that is retroactive. See 42 U.S.C. § 9601(35)(A)(i) (1994); *New Jersey Turnpike Auth. v. PPG Indus., Inc.*, 16 F. Supp. 2d 460, 466-67 (D.N.J. 1998); *United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 220 (W.D. Mo. 1985).

²²³ Permit holders include: Sunnyside Gold Corporation, the wastewater treatment facility of the town of Silverton, and the Pride of the West Mill, which is the only operative floatation mill in the basin. The mill, which extracts base and precious metals from mining rock, is currently inactive (Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, April 12, 1999).

²²⁴ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998.

²²⁵ Prioritization was based on relative “loading, environmental impact, feasibility, cost and benefits.”

plagued by serious levels of contamination from a variety of heavy metals attributable both to historical mining operations in the area and to naturally high background levels of these metals (USGS, 1997).²²⁶ Based on this information, the Commission, in consultation with local citizens through public meetings, determined that water quality in the upper Animas basin “can and should be improved.”²²⁷

The Commission, however, also found that “[t]he imposition of effluent limits required under the Federal [Clean Water] Act for point sources and cost-effective and reasonable best management practices for nonpoint sources are not likely to lead to the establishment of aquatic life in these segments [of the upper Animas basin].”²²⁸ In addition, the broad distribution of pollution sources from abandoned mines and the potential complexity of the cleanup effort, which will affect scores of local landowners, convinced the Commission that there was a need for a collaborative solution derived from a community-based process.

In an effort to facilitate the creation of a community-based collaborative process in the upper Animas basin, the Division turned to the Colorado Center for Environmental Management (“Center”) (NRLC, 1996). The Center, a non-profit organization created by then-Colorado Governor Roy Romer, is charged with seeking pragmatic alternatives to environmental management problems. At the time, the Center was involved in developing a model of collaborative environmental management under a grant from the United States Department of Energy (“DOE”). The Center, at the request of the Division and with the blessing of the DOE, agreed to demonstrate the usefulness of this model in the upper Animas basin. As a result of the Center’s efforts, the Animas River Stakeholders Group formed in early 1994.

Structure and Functioning of the Stakeholders Group

The Center began this process by interviewing “various mining, federal land management, local government, environmental, and related interests” to determine their interest in participating in a collaborative process to resolve the mining contamination in the Animas Basin (NRLC, 1996:129). It was clear from the beginning that people in the upper Animas basin wanted an alternative to an externally imposed top-down regulatory solution (Western and Wright, 1994).

The Center found that this sentiment derived from two sources. First, locals worried that the Water Quality Control Commission (Commission) would proceed “with or without their involvement in initiating cleanup” (CCEM, 1998). Next, locals saw the collaborative approach as an opportunity to avoid the stigma of Superfund designation that would inevitably bring a

²²⁶ For example, in the Middle Fork Mineral Creek, natural sources contributed 33 percent of the heavy metal concentrations, while mining sources contributed 67 percent. The metal pollutants include: zinc, copper, iron, aluminum, manganese, lead, and cadmium.

²²⁷ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998 (page 24).

²²⁸ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998 (page 27).

greater federal role in the cleanup (Kenney, 1997). In fact, the local distrust of EPA ran so deep that EPA officials in the area actually received death threats warning against their involvement in the basin.²²⁹

As a result, the first several meetings of the Stakeholders Group were shrouded with an "acrimonious mood" that was created by the participants' distrust of both the Commission and the Center (CEM, 1998). In these initial meetings, the participants were generally relegated to a reactive role, responding to the direction and concerns of the Commission. However, by mid-1994, a core group of twenty-five to thirty people had emerged that began to "work diligently in identifying and addressing pertinent issues."

The core group of participants in the Stakeholders Group consists of representatives from nearly every federal, state, and local government agency with management responsibility over the area in question, along with some private interests.²³⁰ Given that 83 percent of San Juan County is public land, broad representation from governmental sources is recognized by all participants as particularly important.

The Stakeholders Group agreed on a mission "to improve water quality and habitats in the Animas River through a collaborative process designed to encourage participation from all interested parties."²³¹ Due to a variety of concerns, the group chose to depend on consensus-based decision-making and to avoid any formal voting procedures.²³² Meetings are held once a month at the Silverton Town Hall and general information about the group is available on the Internet.²³³

²²⁹ Interviews with Peter Butler, Director of the Friends of the Animas River, April 26, 1999, and Carol Russell, Animas Basin Team Leader, Environmental Protection Agency, April 28, 1999. The person making the threats turned out to be a local man. In perhaps one of the most ironic success stories of the entire process, this same man wound up coming to some of the Stakeholders Group's meetings. After he found that the governmental officials and other parties in the process were actually willing to listen to his complaints and concerns, he claimed that his faith in government had been restored.

²³⁰ The entities listed as official participants include: the CDPHE, the Colorado Division of Minerals and Geology, the Colorado Division of Wildlife, the Colorado Geological Survey, the Colorado River Watch, the City of Durango, the Durango and Silverton Narrow Gauge Railroad, the Echo Bay Mines Company, the Friends of the Animas River, the Gold King Mines, the Little Nation Mining Company, the Mining Remedial Recovery Company, the OSIRIS Gold Company, the River Watch Network, the Root and Norton Assayers, the St. Paul Lodge, the San Juan County Commissioners, the San Juan County Historical Society, the Silver Wing Company, the Town of Silverton, the Southern Ute Tribe, the Southwest Colorado Water Conservation District, the Sunnyside Gold Corporation, the Tusco Company, the U.S. Bureau of Land Management, the U.S. Bureau of Reclamation, the U.S. Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Forest Service, the U.S. Geologic Survey. (See Animas River Stakeholders Group, *Animas River Updates/Participants*, http://www.waterinfo.org/Stakeholders_Group/arupdate.html.)

²³¹ See Animas River Stakeholders Group, *Mission, Goals, Objectives & Policies* (visited April 4, 1999); http://www.waterinfo.org/Stakeholders_Group/mission.html.

²³² These concerns included concerns with FACA and questions over how any system of voting would be weighted to fairly represent all the interests (Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, April 12, 1999).

²³³ The Stakeholder Group's homepage is located at <http://www.waterinfo.org/arsg/>.

Key Attributes and Issues Pertaining to Group Structure and Function

There are at least four main issues surrounding the structure of the Stakeholders Group that have a significant impact on the group's effectiveness and perceived legitimacy. First, the Stakeholders Group is fortunate to have a strong leader. Second, the lack of environmental representation continues to be a concern both of the group and outside observers. Third, obtaining consistent funding has been a constant struggle for the group. And fourth, the lack of coordination among state and federal agencies remains a large impediment to the success of the Stakeholders Group. Each of these attributes and issues is described below.

Leadership

Leadership is often cited by those engaged in community-based watershed efforts as a key to success. Consistent with this insight, the success of the Stakeholders Group is largely attributed to the leadership of Bill Simon.²³⁴ Simon is a long-time resident of the basin with a technical background in mining problems that people in both the environmental and industry communities trust. Simon acts as the spokesperson for the group, answering questions from the many journalists, researchers, and local people who want more information about the process. He arranges the monthly meetings and agendas. He coordinates all of the Stakeholders Group's fundraising. On top of this, the Division has recently turned over the entire database of information collected in the Stakeholders Group's studies for Simon to manage.

In addition to these administrative tasks, Simon also directly participates in the on-the-ground research and data collection. He is directing the development of the use attainability analysis and the TMDL framework that must be submitted to the state in 2001. With all of these responsibilities, Simon admits he is beginning to be "spread a little thin."²³⁵ But for now, Simon does it all. As one commentator said, "If you are lucky enough to have a Bill Simon, you will succeed. If you don't, you won't."²³⁶

Environmental Representation

The lack of representation of environmentalists and average citizens is a serious concern to many critics of community-based watershed initiatives. Some argue that community-based watershed management efforts in Colorado are really only a disguise for alternative forums of intergovernmental cooperation that parade under the banner of community involvement.²³⁷ It is true that most of the major players in the Stakeholders Group are either from government agencies with management responsibilities directly implicated by the Stakeholders Group's process, or from mining interests who have a direct economic stake in the outcome of the Stakeholders Group process.

²³⁴ Interview with Larry MacDonnell, Stewardship Initiatives, March 15, 1999.

²³⁵ Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, April 12, 1999. Simon does have one part-time volunteer assistant from Ft. Lewis College in Durango.

²³⁶ Interview with Larry MacDonnell, Stewardship Initiatives, March 15, 1999.

²³⁷ Interview with Larry MacDonnell, Stewardship Initiatives, March 15, 1999.

One participant, Peter Butler, admits to being “a little uncomfortable” about being considered the main environmental representative on the Stakeholders Group.²³⁸ Butler concedes that his economist background and general philosophies might lead some environmentalists to consider him too moderate to represent their concerns effectively. Nonetheless, while acknowledging the lack of a broad array of environmentalist representation on the Stakeholders Group, he concludes that their absence is understandable and not something to be overly concerned about.

In part this opinion derives from the fact that Silverton is a small community whose economic prosperity has always been tied to mining. Despite anecdotal evidence, it is hard for many people in the community to believe, or even imagine, that the upper Animas River ever looked any different than it does today.²³⁹ In addition, other concerns, such as securing adequate schools and medical facilities, weigh more heavily in the minds of many local residents than the water quality problems of the upper Animas basin. Moreover, most of the major environmental groups are located fifty miles south in Durango.²⁴⁰ For these busy people, there is simply not a pressing environmental problem in the upper Animas basin that demands their attention.²⁴¹

Others argue that the group is sufficiently representative of the interested parties and that there is no way to create public interest where none exists.²⁴² In addition, the many government agency participants who live and work in the basin would likely resent the suggestion that they somehow are only agency representatives and do not reflect the community’s values.

Issues of incomplete representation often make even the most ardent advocates of community-based conservation uneasy about devolving direct management responsibility to watershed initiatives like the Stakeholders Group. However, it should be noted that the Commission still retains ultimate control over the water quality standards implemented in the upper Animas basin. If the Stakeholders Group put forth a plan opposed by regional or national environmental groups, those groups could lobby the Commission or resort to a traditional lawsuit to impact the process. Thus, outside environmentalists and others still have an opportunity to influence the process. Nonetheless, it is valid to wonder whether this opportunity to participate is sufficient to give the Stakeholder Group real legitimacy, or if

²³⁸ Interview with Peter Butler, Director of the Friends of the Animas River, April 26, 1999.

²³⁹ Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, April 13, 1999. Simon explains that there are reports from the beginning of the century of people using water from the Cement Creek (a tributary of the upper Animas River) for irrigation and other domestic uses. However, in 1903, these uses of Cement Creek had to be stopped due to a degradation of water quality. Simon claims that at the time people explained that the waters were no longer as pristine as they used to be.

²⁴⁰ These groups include (with their focus in brackets): the Friends of the Animas River (development around Durango), the Taxpayers for the Animas River (Animas-La Plata), Mineral Policy Center (mining all around the West), the Sierra Club (all public lands issues), the Southern Ute Grassroots Organization (Animas-La Plata), and the Pine River Watershed Group (Pine River east of Durango).

²⁴¹ Interview with Peter Butler, Director of the Friends of the Animas River, April 26, 1999. There are no endangered species at stake in the Stakeholders Group’s work, nor are there are not any new proposals for large-scale mining.

²⁴² Interview with Steve Fearn, Board Member of the Southwest Colorado Water Conservation District and President of the Silver Wing Mining Company, April 15, 1999.

something more is required whenever state and federal agencies essentially devolve management responsibilities.

Funding

For the first few years of the Stakeholders Group's existence, it relied heavily on funding from the EPA's Rocky Mountain Headwaters Mining Waste Initiative. However, over the last three years, funding for the entire Mining Waste Initiative program has been reduced from around \$1.5 million to less than \$100,000 dollars. In addition, this program lacks a statutory basis and therefore long-term funding from this source is uncertain (Kenney, 1997). The EPA's Animas Basin Team Leader, Carol Russell, attributes this decline in funding to concerns by the upper levels of management in EPA that community-based groups are not actually achieving any on-the-ground success.²⁴³

The EPA's Section 319 nonpoint program²⁴⁴ has also been a key source of funding for the Stakeholders Group. For 1999, the Stakeholders Group received a full thirty-five percent of the EPA's 319 grant money for the state of Colorado, or nearly \$450,000, all of which will go directly to remediation projects.²⁴⁵ In addition, over the last three years funding for the Section 319 program in Colorado has doubled.²⁴⁶ Nonetheless, EPA has made it known that it will not perpetually fund watershed initiatives through the 319 program because it feels local funding is more appropriate.²⁴⁷ It is clear that, while the EPA does not want the Stakeholders Group to fold, it wants someone else to pick up the bill.²⁴⁸

This issue is of real concern to the Stakeholders Group, in part since the state of Colorado does not have a formal system of supporting community-based watershed efforts. This approach is

²⁴³ Russell coordinates all of EPA's regulatory activities with regard to the Animas River basin. In addition, she is the Co-chair of the EPA's National Hardrock Mining Framework, through which the EPA is attempting to coordinate their regulatory activities under the 37 different laws that deal with mining. The experimentation in the Animas River project is a pilot for this coordinating effort. She believes that the Stakeholders Group, while not perfect, has made some noteworthy progress. Russell points to the empowerment of the community, the increased involvement of the local community in the regulatory process, the increased information sharing between private and governmental actors, and the reluctant recognition by the Forest Service and BLM that they need to participate in the remediation efforts in the basin because they could be held liable. (Interview of April 26, 1999.)

²⁴⁴ See 33 U.S.C. § 1329 (1994). Under section 319, state, territories, and tribes can receive grants to support a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects. The Division actually receives the 319 grants on behalf of the Stakeholders Group. Since the Stakeholders Group is not a legal entity, the San Juan County RC&D actually holds the money for the Stakeholders Group. (Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, May 10, 1999.)

²⁴⁵ See Animas River Stakeholders Group, *Meeting Summary* (visited May 12, 1999), http://www.waterinfo.org/Stakeholders_Group/mtgsummary.html.

²⁴⁶ Funding for Section 319 grants in Colorado has gone from \$1 million three years ago to over \$2 million today. The increase in funding for the 319 program may be a recognition by the EPA that TMDL controls could be getting more serious after the recent round of lawsuits (Interview with Carol Russell, Animas Basin Team Leader, Environmental Protection Agency, April 28, 1999).

²⁴⁷ Interview with Gary Broetzman, Colorado Center for Environmental Management, April 15, 1999.

²⁴⁸ Interview with Peter Butler, Director of the Friends of the Animas River, April 26, 1999.

being taken in other states, such as Oregon where the Oregon Watershed Enhancement Board is providing millions of dollars in direct support every year to watershed initiatives. A bill that would have created a similar program in Colorado was killed in the Colorado Legislature in 1997.

Also of concern is the lack of local funding sources. The Stakeholders Group receives some funding from Southwest Colorado Water Conservation District, and in-kind services are provided by volunteers and San Juan County. However, it is unlikely that these local sources will be able to provide significantly more of the Stakeholders Group's funding in the near future. As a result, the Stakeholders Group—like so many other watershed initiatives—struggles to succeed with the resources they are provided. It appears that the Stakeholders Group will have to subsist on a sporadic diet of mixed federal, state, and local funding for some time to come.

Lack of Coordination Among Government Agencies

The lack of coordination among community-based watershed groups and government agencies is often cited as a major impediment to achieving real progress on water quality issues. Often agencies have different or conflicting goals and incentives that are not easily reconcilable. This is certainly true in the upper Animas basin.

The Forest Service and BLM both have management responsibilities over public lands containing abandoned mines in the upper Animas basin. Since 1997, the two agencies have been engaged in a process of streamlining their operations to eliminate overlapping duties in a program called Trading Post. They share a joint director in Cal Joyner and attempt to administer similar programs—like issuance of firewood or grazing permits—jointly.²⁴⁹ This new emphasis on coordination between the Forest Service and BLM has also been important in the context of the AMD problems in the upper Animas basin.

Soon after Joyner's arrival in San Juan County, the EPA and the Stakeholders Group began talking to Joyner and the other federal land management agencies about their responsibilities in cleaning up the AMD in the basin. Given that very few major sources of AMD were on federal land, the federal agencies did not initially believe that they could be held responsible for the cleanup of these sites on private land.²⁵⁰ However, after a slow process of discussion and education, the Forest Service and BLM became convinced that they could be held liable for some of the AMD waste on private lands that negatively impact federal lands.²⁵¹

²⁴⁹ So far, the program has saved an estimated \$1 million at the two pilot sites (*See* BLM, *Update on Trading Post* (visited May 12, 1999), <http://www.blm.gov/efoia/wo/fy98/ib98-53.html>). In 1997, the Interior Appropriations Bill contained a provision that codified Trading Post arrangement into law (*See* 1997 US Cong. HR 2107, signed into law November 14, 1997).

²⁵⁰ There are only two or three major AMD source on public lands in the upper Animas basin. Most of the mining sites on private land today began as public land but were subsequently patented (Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, April 26, 1999).

²⁵¹ Under the Clean Water Act, federal land management activities have a responsibility to ensure what is discharged from public lands does not degrade water quality. *See* 40 C.F.R. § 122.23 (1992). If pollution from private land is contaminating public land, the federal agencies could be held liable for that discharge of pollutants

In 1995, the United States Department of Interior chose the upper Animas basin as one of two pilot sites for a demonstration project under its Abandoned Mined Lands Initiative ("AML") (CCEM, 1998). The objective of the AML project is to generate data and understanding about the AMD problem and potential remediation strategies. Some parties believe that the fear of liability is why the Forest Service and BLM went to Congress and requested the AML program in the basin, and that this is an accomplishment for which the Stakeholders Group should be credited.²⁵² Unfortunately, some members of the Stakeholders Group view the AML designation as a "top-down action without [local] consultation," and are concerned that the AML program may be pursuing goals that are not coordinated with the Stakeholders Group's efforts.²⁵³ Others have suggested that the Forest Service and BLM should be sharing more of their financial resources from the AML program with the Stakeholders Group to help facilitate a comprehensive solution.²⁵⁴

Accomplishments and Ongoing Activities

Activities from 1995-1998

The Stakeholders Group's cohesiveness was quickly challenged when the Commission, on the recommendation of the Division, decided in February of 1995 to adopt strict numerical water quality standards for the upper Animas (CCEM, 1998). These standards would have required a significant improvement in the water quality over that which existed in 1995 in order to make the river hospitable to aquatic life. The Stakeholders Group opposed these standards on the grounds that it would not provide them with the flexibility necessary to fashion their own solution. In response to these concerns, the Commission agreed to suspend implementation of numeric standards until March of 1998, during which time the Stakeholders Group agreed to develop management recommendations of their own.²⁵⁵ In the interim, the Commission agreed to retain the current ambient water quality standard for the basin with a narrative standard²⁵⁶ to

even though it does not originate on public lands (Glicksman, 1993). At the very least, a citizen suit could force the Forest Service and BLM to clean up their lands at an accelerated pace (Interview with Cal Joyner, Associate Forest Supervisor for the San Juan-Rio Grande National Forests and the Field Office Manager for the Bureau of Land Management San Juan Field Office, Colorado, April 26, 1999).

²⁵² Interview with Carol Russell, Animas Basin Team Leader, Environmental Protection Agency, April 26, 1999.

²⁵³ *Upper Animas River Watershed Stakeholders Group* (visited April 10, 1999),

<http://www.epa.gov/unix0008/cross/cbep/fact/ani.html>.

²⁵⁴ Interview with Greg Parsons, Colorado Water Quality Control Division, April 14, 1999.

²⁵⁵ This decision included provisions requiring the Stakeholders Group (1) not to allow any further degradation of ambient standards in the upper Animas basin, (2) to develop a strategy for cleaning up mine-related pollution, and (3) to work within the targets the Commission set for the eventual water quality improvements that would allow a sustainable brown trout fishery upstream of Silverton (CCEM, 1998).

²⁵⁶ Numerical standards are much stricter than narrative standards. Narrative standards generally require that water quality conditions be maintained "at the current level" or require preventing "undue degradation." In contrast, numerical standards require water quality conditions to meet exact numerical standards for particular pollutants. As a result, the imposition of numerical standards often drives meaningful management changes, whereas

ensure that there would be no further deterioration of water quality.²⁵⁷ From 1995 to 1998, the Stakeholders Group accomplished enough progress to convince a majority, though not all, of the Commission that this was an experiment worth pursuing.

The Stakeholders Group began in 1995 with a three-phase strategy to accomplish the goals set out by the Commission (CCEM, 1998; NRLC, 1996). First, the Stakeholders Group planned to do extensive studies of the water quality in the upper Animas basin. Next, it attempted to determine the most serious sources of contamination and then prioritize sites for cleanup. Finally, the strategy contemplated the initiation of on-the-ground remediation projects.

In 1995, the Stakeholders Group, with extensive assistance from the Colorado Division of Mining and Geology, conducted detailed investigations of the mine sites and of the stream quality in Mineral Creek—a tributary of the Animas. The research was funded by the EPA (under Section 319) and required technical assistance from the Forest Service and the Colorado Geologic Survey. Early in 1996, the Stakeholders Group collected similar data in Cement Creek, another tributary of the Animas River. Finally in 1996, the Stakeholders Group evaluated the Animas River Canyon to determine the habitat limitations for aquatic life in general, and brown trout in particular (CCEM, 1998).

The data collection for cleanup prioritization of pollution sites was conducted by multiple state and federal agencies in coordination with the Stakeholders Group. Based on these data, the Stakeholders Group isolated five areas within the basin that suffer from major contamination that they felt should be the highest priority of the cleanup effort.²⁵⁸ Remediation projects have since been undertaken by several participating stakeholders including the Mining Remedial Recovery Company at Placer Gulch; Sunnyside Gold Corporation at several locations; the BLM at the Forest Queen, Mayday, Joe and John, and Lark Mines; Salem Minerals Company at Mammoth tunnel; the Office of Surface Mining at the Galena Queen Mine; and Silver Wing Mining Company at the Silver Wing Mine.

Funding and technical support for these efforts came from a variety of sources, including the EPA, the Department of Interior, the BLM, private mining companies, Stakeholders Group participants, Office of Surface Mining, Bureau of Reclamation, and the United States Geological Survey. These remediation projects have tested new forms of controlling AMD, which varied from controlling runoff of waste to treating runoff with lime additives. The Stakeholders Group estimates that \$20 million has already been spent on remediation in the basin, and that much more will need to be done.²⁵⁹ Fears over incurring liability have prevented the Stakeholders Group from doing more remediation work.²⁶⁰

narrative standards often do not.

²⁵⁷ Interview with Greg Parsons, Colorado Water Quality Control Division, April 14, 1999.

²⁵⁸ These areas include: California Gulch in the upper Animas basin, Kohler area on the North Mineral Creek, Middle Fork of Mineral Creek, Prospect Gulch in Cement Creek, and upper Cement Creek (CCEM, 1998).

²⁵⁹ Natural Resources Law Center Watershed Survey #38f, on file with the author.

²⁶⁰ This issue is discussed later in the chapter.

Initial Review of the Stakeholders Group in 1998

When the Stakeholders Group process came up for its initial review in 1998, it was clear that the effort needed more time to gather data that could serve as a guidepost for setting use designation standards under the Clean Water Act.²⁶¹ The Stakeholders Group asked for a three-year extension to complete this work. At least one member of the Commission believed that the progress of the Stakeholders Group was insufficient to justify an extension.²⁶² However, after further discussing the matter, the Commission concluded that the Stakeholders Group had made significant progress on acquiring data for the upper Animas River that would eventually lead to new use designation standards.²⁶³ Therefore, the Commission unanimously agreed to grant a three-year extension to the Stakeholders Group.

The Stakeholders Group now has until March of 2001 to complete its recommendations for water quality standards in the upper Animas River.²⁶⁴ Until that time, the Commission has retained the relatively unimposing narrative standard under the Clean Water Act to protect fish habitat. The Commission feels that this will prevent further deterioration of the river while allowing the maximum flexibility for the Stakeholders Group to develop a workable solution.

The Commission admits this additional delay will almost certainly be inadequate for the Stakeholders Group to achieve water quality improvements that will satisfy the more stringent numerical standards passed and then deferred by the Commission in 1995.²⁶⁵ However, the Commission expects that the Stakeholders Group will present its recommendations for the appropriate water quality standards in the basin. The Stakeholders Group is committed to making recommendations based on all of the available data they have at that time.²⁶⁶ If the Commission is dissatisfied with these recommendations, it intends to reinstitute strict numerical standards to provide a legal stimulus for further action.²⁶⁷

The decision to delegate the setting of standards to the Stakeholders Group has not been without bureaucratic difficulties. EPA rejected the Commission's decision in 1998 to defer

²⁶¹ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998 (page 34).

²⁶² Interview with Peter Nichols, former Chair of Colorado's Water Quality Control Commission, April 19, 1999.

²⁶³ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998 (page 34).

²⁶⁴ In reality, the Stakeholders Group only has until the fall of 2000, when the Commission will hold its public hearings on the water quality standards for the upper Animas basin. At that time, the Stakeholders Group will be expected to present its plan to the Commission. Based on this feedback, and in consultation with the Division, the Commission will set water quality standards in February of 2001. (Interview with Greg Parsons, Colorado Water Quality Control Division, April 14, 1999.)

²⁶⁵ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998 (page 25).

²⁶⁶ Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, May 10, 1999.

²⁶⁷ See Colorado Department of Public Health and Environment Water Quality Control Commission, Regulation No. 34: Classifications and Numeric Standards for San Juan River and Dolores River Basins, Effective December 30, 1998 (page 25).

setting numerical standards for three years, arguing that Colorado lacks an adequate system for setting narrative standards.²⁶⁸ Nonetheless, the EPA has agreed not to set its own standards during this three-year period in deference to the Stakeholders Group.²⁶⁹ While the EPA has been supportive of the Stakeholders Group process through grants and technical support, the Commission admits that the Stakeholders Group process does not quite fit within the regulatory framework of the Clean Water Act that the EPA must enforce.²⁷⁰ If the Commission decides to defer the standards again in 2001, the EPA may choose to impose its own standards.²⁷¹

This fact is putting the pressure on the Stakeholders Group to produce concrete results. The state wants to avoid the EPA unilaterally setting standards for the upper Animas basin. If the Stakeholders Group asks for another deferral in 2001, that request is predicted to fall on “deaf ears” in both the Commission and within the EPA.²⁷² While the Stakeholders Group has committed to not ask for another extension in 2001, it remains to be seen whether the EPA will embrace the Stakeholders Group’s recommendations for the 2001 water quality standards.

Current Activities

The current goal of the Stakeholders Group is to propose water quality standards for the upper Animas River by the 2001 deadline. To this end, the Stakeholders Group has nearly two hundred and fifty individual site characterization studies currently in progress. In addition, the Stakeholders Group has recently completed a basin-wide biomonitoring program.²⁷³

The Stakeholders Group had three major remediation projects planned for 1999 designed to control water flowing through old mines: the Animas Mine Waste Control Project, the Cement Creek Mine Waste Control Project, and the Mine Infiltration Identification and Control Project. In addition, there are at least two more remediation projects occurring on private land in coordination with the Stakeholders Group.²⁷⁴ Money for these projects all comes from the EPA's Section 319 nonpoint source pollution grants.²⁷⁵ However, the Stakeholders Group

²⁶⁸ Interview with Carol Russell, Animas Basin Team Leader, Environmental Protection Agency, April 28, 1999.

²⁶⁹ Interview with Greg Parsons, Colorado Water Quality Control Division, April 14, 1999.

²⁷⁰ Interview with Sarah Johnson, Colorado Water Quality Control Commission, March 17, 1999.

²⁷¹ In *Alaska Clean Water Alliance v. EPA*, the federal district court of Washington found that a plain reading of the Clean Water Act reveals that state water quality standards cannot take effect until they are actually approved by the EPA. *Alaska Clean Water Alliance v. EPA*, unpublished opinion, No. C96-1762R (US Dist. Ct. WA, decided July 8, 1997) found at WL 446499 (W.D. Wash.). The EPA is now taking the position that this interpretation of the Clean Water Act applies across the country, a potential bombshell since EPA is notoriously slow about approving standards (Interview with Sarah Johnson, Colorado Water Quality Control Commission, March 17, 1999).

²⁷² Interview with Greg Parsons, Colorado Water Quality Control Division, April 14, 1999.

²⁷³ Natural Resources Law Center Watershed Survey, at #38c-d.

²⁷⁴ Steve Fearn's Silver Wing Company and Salem Minerals are working on mine drainage treatment at two separate sites with EPA Section 319 money. (Interview with Bill Simon, Coordinator of the Animas River Stakeholders Group, May 10, 1999.)

²⁷⁵ The Section 319 money goes first to the Division and the Division through grants chooses recipients. When the Stakeholders Group receives money from the Division, the San Juan County RC&D actually holds the money for the Stakeholders Group since the Stakeholders Group is not incorporated.

complains that potential liability for third-party cleanups under the Clean Water Act has prevented it from undertaking more remediation projects.

As a result, the Stakeholders Group is looking for legislative assistance to make their cleanup and remediation work more effective and less costly. The Stakeholders Group supports a “Good Samaritan Provision” that would amend the Clean Water Act to exempt state agencies, and entities such as the Stakeholders Group, from liability associated with voluntarily cleaning up abandoned mine sites (Kenney, 1997). The effort to get the Good Samaritan Provision is being led by the Western Governors’ Association (WGA, 1998b). The Western Governors Association succeeded in having the Good Samaritan Provision introduced into Congress in 1994 (CEEM, 1998). While the initiative passed the House, it was never debated or introduced in the Senate. Many environmentalists worry that the definition of those who would be exempt from liability under the Good Samaritan Provision might be too broad and therefore let some guilty polluters off the hook.

Finally, the Stakeholders Group plans to develop a framework for Total Maximum Daily Load (TMDL) regulation in the basin.²⁷⁶ The process of developing TMDL standards could be the most challenging hurdle the Stakeholders Group has dealt with to date. However, the Stakeholder Group is not worried about the impact of TMDLs in the upper Animas basin. Simon claims that since natural or unavoidable background conditions of contamination are exempt from the TMDL process, it may not be as difficult a problem as imagined.

Conclusion

The Animas River Stakeholders Group is an exciting and active mechanism for addressing water quality problems in the upper Animas basin. While it is difficult to say with any certainty if the Stakeholders Group can be successful in achieving a better result than the traditional regulatory system alone²⁷⁷, many parties familiar with the Stakeholders Group believe significant progress is being made. In fact, the progress the Stakeholders Group has made in data collection, along with the significant goodwill that has been created by the process among locals, has led some commentators to call the Stakeholders Group a resounding success²⁷⁸, and “perhaps the best example of civic environmentalism in the country.”²⁷⁹ While these claims may be unverifiable given their subjective nature, there is no doubt that the state of Colorado, the EPA, and others are looking to this effort as a possible model for other such efforts around the country.

²⁷⁶ TMDLs are discussed briefly in Chapter 3.

²⁷⁷ Of course, the term “better” is a term open to definition. For instance, will the result be better if more community members agree with it or were involved in its creation? Or is better measured only by on the ground criteria?

²⁷⁸ For example, *see* CCEM (1998).

²⁷⁹ Interview with Cal Joyner, Associate Forest Supervisor for the San Juan-Rio Grande National Forests and the Field Office Manager for the Bureau of Land Management San Juan Field Office, Colorado, April 26, 1999.

Chapter 16

Observations and Policy-Level Recommendations

Introduction

We conclude this report by focusing primarily on trends and findings that have emerged since the publication of the first *Source Book* in 1996. In 1996, watershed initiatives were still largely an unknown phenomenon that the Natural Resources Law Center sought to describe. While describing watershed initiatives is still part of our mission and a major focus of this new *Source Book*, modern inquiries to the Natural Resources Law Center are increasingly from people already aware of the basic information. Now we are typically being asked for advice in predicting where the movement is going, which issues are emerging as most salient, which answers are most elusive, which cases best illustrate particular issues or experiences, and which lessons are most widely transferable. Inquiries pertaining to measures of success and “appropriateness” have also become common, and seem to be surrounded with a sense of urgency. While we do not claim to have complete or definitive answers to these questions, the conclusion of this project provides an obvious opportunity for reflection and speculation. Hopefully, the observations offered below will encourage still more detailed investigations, leading to insights of practical value to both field-level practitioners and policy-makers.

Some Trends and Observations

Of all the information that we have gathered over the past couple years, a few trends and observations stand out, either due to their significance, prevalence, or both. Three such observations are (1) the strength and breadth of the watersheds movement in the Pacific Northwest, (2) the growing importance of nonpoint source pollution and Total Maximum Daily Loads (TMDLs), and (3) the emergence of so-called “umbrella groups.”

The Pacific Northwest: The Preeminent Laboratory of Experimentation

In compiling research for the revision of the *Source Book*, we were repeatedly struck by the superior level of development in the watershed movement along the Pacific coast and in the Columbia River Basin in the Northwest. In comparison to the other parts of the West, not only is the sheer number of groups active in the Pacific Northwest much larger, but the level of funding²⁸⁰ and administration is generally much greater as well. Unique and aggressive state

²⁸⁰ As shown earlier in Figure 13-84 (chapter 13), it would appear that budgets for individual watershed initiatives in the Pacific Northwest are not significantly different than those for groups elsewhere in the West, however, the net level of funding is higher in the Pacific Northwest given the high density of groups in the region.

programs have shaped the watershed movement in this region, and new innovations, like the proliferation of umbrella groups (discussed later), have also set a standard.

Several factors are likely responsible for this high level of activity in the Pacific Northwest. First, there is simply more water in this region than in other parts of the West. Along the mountainous coastlines of Northern California, Oregon and Washington, rugged terrain and high precipitation has conspired to create hundreds of relatively small, discrete watershed drainages, most containing at least one year-round stream. This contrasts the more open, arid topography of the Southwest, where the “jurisdiction” of a watershed group formed around one stream or river segment may cover hundreds of thousands of acres. Also extremely important in the Pacific Northwest is the influence of federal environmental laws, particularly the Endangered Species Act as pertaining to regional salmonid populations. Many of these issues are acute in the upper regions of the Columbia Basin, implicating watersheds in Idaho and small parts of Montana and Wyoming.

It is against this backdrop of voluminous water resources, smaller drainages, compelling natural resource issues, and federal environmental laws that the role of watershed groups in the Pacific Northwest has developed. The past few years have seen a growing influence of state watershed management programs in this region. The Oregon program, administered by the Oregon Watershed Enhancement Board, is the best known of these programs. It provides financial resources to well over 100 active watershed initiatives. Unlike many groups from the Interior West, nearly all Oregon groups have paid coordinators and most have offices and support staff.²⁸¹ The lesser known Idaho program is also compelling, particularly by its explicit effort to “nest” the activities of so-called Watershed Advisory Groups (WAGs) into a coordinate framework provided by the Basin Advisory Groups (BAGs).

It remains unclear if the state programs of the Pacific Northwest should be viewed as the “best” programs; they are undoubtedly the most ambitious and structured, and appear to be the leading edge of the watershed movement in the West. In addition to issues of structure, budget and activity, the watershed initiatives of the Pacific Northwest also have a different “feel” from those outside of the region. Primarily, this is due to the central role of citizens and other nongovernmental stakeholders in the initiatives of the Pacific Northwest. The model in the Pacific Northwest appears to be one of community-oriented watershed initiatives featuring the assistance, support and involvement of government agency personnel. Elsewhere in the West, the model tends to be one of interagency workgroups supplemented by citizen and stakeholder involvement.²⁸² Again, this observation is not meant to anoint one approach as preferable to another, but suggests that the efforts of the Pacific Northwest better approximate the rhetoric of community control so prevalent in the watershed initiative literature.

²⁸¹ Some groups (requesting anonymity) have indicated that, especially during the early years of the state program, they had more funding available than they could practically spend, a “problem” not reported elsewhere.

²⁸² One way to appreciate this is to look at the list of contact people provided in the *Source Book*. The typical contact person for a group outside of the Pacific Northwest is usually an agency employee, often a Natural Resources Conservation Service employee. In the Pacific Northwest, coordinators are often concerned citizens recruited out of the local community.

A Growing Arsenal of Federal Hammers: Nonpoint Source Pollution and TMDLs

In many western watersheds, the Endangered Species Act is the preeminent “federal hammer” prompting the formation and activity of watershed initiatives. The Act prohibits any federal agency action—and many private activities—that may jeopardize an endangered or threatened species or modify its habitat.²⁸³ As such, the Endangered Species Act dictates water resource management decisions at many levels, from requiring instream water levels to support endangered fish, to curtailing logging operations that might create sediment pollution. Many watershed initiatives are actively involved in federally mandated management of endangered species habitat. Key species include the razorback sucker on the upper Colorado River, and the multitude of salmon populations along the entire reach of the Columbia and the north Pacific coast.

The Endangered Species Act, however, is not the only hammer of significance influencing western waters and the functioning of western watershed initiatives. In recent years, the actual and potential influence of the Clean Water Act on western watershed management has grown significantly. The Act has always been among the most important of all environmental laws, requiring permits for the discharge of pollutants from point sources into the nation’s waterways. Until recently, most activity under the Clean Water Act was confined to these permitting activities. Lately, however, Section 303(d) has become a focus of regulatory activity. This section requires states to identify and list those waters within their boundaries for which the discharge permits have failed to achieve water quality goals. In these non-attainment areas, the Clean Water Act requires the establishment of Total Maximum Daily Load (TMDL) standards for each listed water segment at a level adequate to attain the water quality goals. Essentially, the TMDL is a calculation of the stream’s ability to assimilate pollutants—a limit defined mostly by biophysical factors. Once a TMDL standard is established, then this “allowable” level of pollution must be allocated among all polluters. Increasingly, this means attempting to address nonpoint sources of pollution from broad urban and agricultural areas, an exceedingly difficult logistical challenge for administrators.

In part due to the enormous administrative challenge of TMDL implementation, Section 303(d) was largely ignored for the first two decades of Clean Water Act. However, the growing inability of point-source programs to make further gains in addressing water quality issues, combined with several strategically placed TMDL lawsuits, have forced the Environmental Protection Agency to seek new strategies for protecting water quality. Increasingly, the federal government is identifying watershed initiatives as a potentially useful mechanism for addressing this complex challenge.

In particular, the Clean Water Action Plan, a multi-agency federal initiative led largely by the Environmental Protection Agency and the U.S. Department of Agriculture, is based on a program of unified watershed assessments, watershed restoration action strategies, watershed pollution prevention, and watershed assistance grants. This strategy includes supporting “locally led partnerships that include a broad array of federal agencies, states, tribes,

²⁸³ See Chapter 3 for a discussion of relevant federal laws pertaining to watershed management.

communities, businesses, and citizens to meet clean water and public health goals.”²⁸⁴ Section 319 of the Clean Water Act, which provides grants to states for addressing nonpoint source pollution, is already the major source of federal funding for many watershed initiatives—particularly for coordinator’s salaries. As TMDL and nonpoint source pollution issues continue to become more prevalent, it seems quite likely that watershed initiatives will be asked to play a greater role in resource management and problem-solving.

Umbrella Groups

Another significant development over the past several years has been the growth of so-called “umbrella groups.”²⁸⁵ Umbrella groups can be loosely defined as organizations that do not focus on a single watershed, but rather work within a larger geographic area (often a particular basin). These groups provide oversight or advice and services to several individual watershed efforts. These “umbrella groups” come in many forms, but—not surprisingly—seem to be most prevalent in the Columbia Basin and Pacific Coast states of California, Oregon, Washington and Idaho. Examples of umbrella groups include the Rogue Basin Coordinating Council in California/Oregon, Streamworks in northern Oregon, and the BAGs (Basin Advisory Groups) in Idaho. Umbrella groups may provide funding opportunities, administrative infrastructure, and general networking opportunities to watershed initiatives that they would otherwise not be able to realize. They may also begin to make the connection between small watersheds and larger river basins, a traditional deficiency in American water management.

Like the local watershed initiatives themselves, umbrella groups come in many forms. Some are grassroots non-profits dedicated to assisting groups with environmental agendas, such as People for Salmon in Washington and the aforementioned Streamworks in Oregon.²⁸⁶ Increasingly, however, these organizations are established by state governments as part of a larger watershed planning scheme. This is the case with the Basin Advisory Groups (BAGs) in Idaho, and a pair of Basin Coordinating Councils operating under Oregon Watershed Enhancement Board. One of these efforts is the Rogue Basin Coordinating Council, directed by representatives from seven watershed initiatives in this discrete coastal basin in southern Oregon and northern California. One of the operational highlights of the Coordinating Council is that member councils can propose joint projects to be undertaken by all the groups, using joint funds. This pooling of resources greatly strengthens the groups’ grant-writing and administrative capabilities. A recent example of a successful joint project was the receipt of a grant to train and equip one GIS (Geographic Information System) specialist for each of the seven member groups, and then coordinate the GIS capabilities for the region. Another joint

²⁸⁴ A Clean Water Action Plan website exists to describe developments in the still emerging program (<http://www.cleanwater.gov/action/overview.html>). The quote is taken from the “overview.”

²⁸⁵ Note how this situation is beginning to mimic the world of community-based forestry partnerships, as discussed in Chapter 12.

²⁸⁶ The *Source Book* contains at least one case that could easily be classified as an umbrella group: the Rio Grande/Rio Bravo River Coalition (chapter 11). This organization is working to develop the capacity of local communities and other local grassroots groups and organizations in an area that encompasses the entire Rio Grande basin on both sides of the U.S.-Mexico border. It is included as a watershed initiative case study only due to the lack of watershed initiatives functioning in this basin.

project now underway is a proposal to map all fish passage barriers in the basin, and coordinate efforts to address the passage problems.

Emerging Issues and Future Research

As we head into a new century, the most pressing research questions for watershed initiatives involve issues of success and appropriateness. As discussed in Chapter 14, it is extremely difficult to systematically assess effectiveness of western watershed initiatives for many reasons, including the youth of most efforts, the difficulty in maintaining an adequate database of highly diverse and rapidly changing initiatives, the challenge of maintaining objectivity in data collection schemes reliant on participant observations, and the presence of conflicting normative (i.e., value-based) ideas influencing how success should be defined. Researchers face other challenges as well, including the growing hesitance of many watershed initiatives to cooperate with researcher inquiries. This apparent trend is partly explained by time and budgetary limitations, but also by the feeling that these interactions are often one-way streets. We have heard from several groups expressing concern that researchers “take” information without providing anything in return in terms of practical advice or assistance. Additionally, several watershed initiatives complain that researchers consistently fail to allow groups to review case studies for accuracy before publication. That is bad form on the part of the research community.²⁸⁷ We also occasionally hear from watershed initiatives asserting that it is nobody’s business what they are doing, a position that is hard to justify if the effort involves public resources or the enforcement of legal requirements, and/or receives public funding.

One way to potentially focus the research agenda is to identify those questions generating the greatest diversity of opinions. This has been done below in Table 16-1, which lists the statements/questions from the Hart survey featuring the highest standard deviations. These are the statements to which the Oregon survey respondents exhibited the greatest diversity of opinions and experiences. These statements cover some key issues, including the adequacy of funding and staffing levels, process characteristics, quality of representation, and on-the-ground effectiveness. For “factual” questions such as numbers 55 and 52, the diversity of responses suggests significant variability in experiences *among* different watershed initiatives. For other questions, such as numbers 1 and 2, the variability shown might also reflect some differences in opinion and interpretation *within* given watershed initiatives. Both phenomena are worthy of further exploration.

²⁸⁷ The Natural Resources Law Center has tried to address these concerns in several ways. For example, all watershed initiatives featured in *Source Book* case studies were provided with an opportunity to review and, if necessary, modify the factual information in the case studies—an opportunity exercised by just over 50 percent of the groups. All featured watershed initiatives also receive a free copy of the *Source Book*.

Table 16-1. Summary of the Eight Valued-Scaled Questions Showing the Largest Variability (as Determined by Standard Deviation) in the Hart Survey of 276 Oregon Watershed Initiative Participants.								
Question #	Statement/Question as Written in the Hart Survey	Strongly Disagree = 1	Disagree = 2	Neutral = 3	Agree = 4	Strongly Agree = 5	Mean	Standard Deviation
10	The watershed group with which I am associated has adequate financial support.	47	93	63	57	15	2.64	1.15
12	The watershed group with which I am associated has not improved physical conditions in the watershed.	28	96	64	60	25	2.85	1.15
2	The watershed group with which I am associated uses an ineffective process to reach decisions.	33	110	55	60	18	2.71	1.13
55	During its formation the group used an independent party or neutral facilitator.	12	49	21	54	7	2.97	1.12
52	During its formation the group received financial assistance to support formation.	20	29	13	74	10	2.97	1.12
17	The watershed group with which I am associated has inadequate staff support.	18	87	65	81	23	3.01	1.10
1	The watershed group with which I am associated is well balanced.	14	39	27	155	39	3.61	1.06
6	The watershed group with which I am associated is not representative of interests in the watershed.	69	142	21	32	10	2.17	1.05

Policy-Level Recommendations

The *Source Book* is primarily a directory and basic reference—a place for beginning a journey, rather than a destination. True, for parties with only a modest interest in the western watersheds movement, the *Source Book* may provide all the data that is desired on the subject. But for those with a more intimate interest in this subject matter, the *Source Book* is best used as a springboard to more detailed investigations. One obvious product of those investigations will be increasingly detailed and effective policy recommendations, a particular interest (and role) of the Natural Resources Law Center. The Natural Resources Law Center has published policy-level recommendations in several venues, namely in *Resource Management at the Watershed Level* (Kenney, 1997) (our report to the Western Water Policy Review Advisory Commission), the *State Role in Western Watershed Initiatives* (NRLC, 1998), and in *Arguing About Consensus* (Kenney, 2000).

Despite the passage of time and our increase in knowledge, we are convinced that the recommendations found in those reports still appear sound. One reason these policy recommendations are still relevant is that they are general in nature. Originally, we crafted highly general recommendations based on the logic that the current state of research and experimentation was still in its infancy, and consequently did not support more detailed recommendations. Although there remains an abundance of still unanswered research questions, today we know much more. But what we have learned is not pointing us to more specific policy recommendations. To the contrary, perhaps the most dominant theme of our research is that there is no dominant theme. Despite all our attempts to correlate form with function, and function with outcomes, watershed initiatives stubbornly defy useful generalizations. Obviously some exceptions exist, and where they do, we have attempted to draw attention to those exceptions as they are highly important. But perhaps the greatest defining characteristics of watershed initiatives are diversity and uniqueness. For watershed initiatives, “one size often fits just one.”

While this observation may appear to throw a wrench into efforts to craft policy recommendations, just the opposite is true. It is highly fortuitous that “what we know” and “what we do not know” both point to similar policy recommendations—at least at this point in time.²⁸⁸ Both suggest restraint, caution, and incremental change, discouraging efforts to aggressively replicate or standardize watershed programs except to the extent that flexibility and creativity are maintained. Well-intentioned legislative and/or executive attempts to recognize or support watershed initiatives could easily be as harmful to the movement as could direct opposition if the net result of that governmental attention is to impose one model on all efforts.

This line of reasoning brings us back to the concept of “guarded optimism,” the policy described in the Natural Resources Law Center publications mentioned above. That policy suggests that most western watershed initiatives should be viewed as exciting and promising,

²⁸⁸ Thus, our recommendations may not be getting much more specific, but they are getting better—they are the product of a better understanding of the situation.

but still largely incomplete, experiments in resources management and problem-solving. The evidence collected to date is sufficient to maintain enthusiasm and to justify further public investments in these collaborative efforts, but only in a manner maintaining adequate regulatory backups. Those interests that see watershed initiatives as a potential replacement to the regulatory regimes of the Clean Water Act and Endangered Species Act should realize that these “regulatory hammers” are a common—often essential—stimulus behind watershed initiative formation and activity. It is possible, actually quite likely, that neither the regulatory nor the consensus-based processes can offer the on-the-ground benefits possible through both processes occurring simultaneously.

Policy-makers should also be sensitive to issues of representation, balance, and accountability. Those lamenting the involvement of national interests—particular the federal natural resource agencies—in seemingly local resource management affairs should recognize that the federal government remains the primary source of financial resources, technical support, and implementation authority utilized by most western watershed initiatives. Given the magnitude of federal lands in the West and the range of “public good” issues addressed through federal environmental legislation, this federal involvement seems appropriate on both philosophical and practical grounds. To the extent that a watershed initiative deals completely with private lands and private issues, then these recommendations are largely moot. This situation, however, rarely occurs in the West.

Ultimately, the goal should be to base policy decisions on effectiveness. Policy-makers should show little tolerance for proponents describing watershed initiatives as panaceas to difficult and seemingly chronic problems in resources management, nor for opponents convinced that all efforts have anti-environmental agendas and promote civility over real problem-solving. While each perspective can be supported by case studies, neither perspective has emerged as an accurate generalization. Clearly, a reading of the *Source Book* case studies paints a fairly rosy picture. However, that enthusiasm should be tempered with a realization that defunct efforts are obviously not included, and that case studies based on participant impressions have an inherent bias. The Natural Resources Law Center continues to find more reasons for excitement than pessimism, but realizes that there is much more to learn.

Finally, we urge policy-makers and watershed initiative participants to remember that learning through experimentation is a legitimate means of identifying improved institutional arrangements only to the extent that these “experiments” are faithful to the scientific construction of experimentation. This requires that issues and assumptions are well defined, that information is collected and analyzed in a credible manner to test those assumptions, that measurable results are explicitly used to shape conclusions, and that peer review is used to validate results. Those working on-the-ground in watershed initiatives realize that this is not a beauty pageant, but rather is a serious attempt by dedicated people to solve real problems. The appropriate role of policy-makers is to provide the assistance needed to give these efforts (within acceptable bounds) a chance to succeed or fail, and then to base future decisions upon that track record. As shown in this *Source Book*, that track record is rapidly growing.

Appendix A

The Watershed Survey

The following survey was used by the Natural Resources Law Center to gather the information featured in the case studies. Over the course of the project, the survey was slightly modified on a few occasions to correct mistakes and to address areas of confusion. This survey can also be viewed online at www.colorado.edu/Law/NRLC/ under the “Watershed Survey” link.

Survey Questions for the Watershed Source Book Revision (Long Form)

Instructions: Most questions are multiple choice and can be answered by checking the appropriate box (or boxes, if necessary). For other questions, please write your answers on the lines provided. Additional comments, or other materials, can be provided on an additional sheet of paper. Please return the survey in the envelope provided. Feel free to include any additional information about the group that we may need to gain an accurate picture of the watershed effort.

Name of Watershed Initiative/Group: _____

Contact Person:

1. a) Your name: _____
b) Title and affiliation: _____
c) Mailing address: _____

- d) Phone number: () _____
- e) Fax number: () _____
- f) Email address: _____
- g) Homepage: _____

2. Your role in the watershed group: (check all that apply)

Coordinator

Facilitator

Participant

Federal agency representative

Which agency? _____

State government representative

Which agency? _____

- Local government representative
Which agency? _____
- Tribal Representative
Which tribe? _____
- Representative of an environmental organization
Which one? _____
- Representative of another non-governmental organization
Which one? _____
- Other (please explain): _____

3. Is participation in the watershed group part of your job (as opposed to being a volunteer activity)?

- Yes No

4. What economic sector are you most affiliated with?

- Forestry
- Environment
- Tourism and/or recreation
- Agriculture and/or ranching
- Mineral and/or energy production
- Other: _____

General Characteristics of the Region of Concern

5. What part of the watershed is the group concerned with? (Check all that apply)

- Upper watershed Mid-watershed Lower watershed
 Entire watershed Other: _____

6. Approximate size of that “focus area”: _____ acres

7. Please provide a brief physical description of that focus area: _____

8. Number of counties with jurisdiction over the focus area: 1 2 3 4 or more

9. Approximate population: less than 1,000 1,000 to 5,000 5,000 to 25,000

25,000 to 100,000 100,000 to 250,000 250,000 to 1 million

greater than 1 million

10. Population distribution: Mostly in towns/cities Mostly rural Equal mix

11. Largest town within the focus area: _____

Approximate population of that town: _____

12. a) Economy: Is a significant percentage of the region's population employed in natural resource jobs? Yes No
 If yes, the major natural resource economies are: (check all that apply)
 Forestry
 Tourism and/or recreation
 Agriculture and/or ranching
 Mineral and/or energy production
 Other: _____
- b) The local economy is: Highly diversified Moderately diversified
 Not diversified
- c) The local economy is: Strong Moderate in strength Weak
13. Other important characteristics of the focus area: _____

Background and Scope of the Watershed Group

14. What year did your group form? _____
15. Who or what groups were most responsible for forming your group? (If more than one box is checked, please circle which had the biggest role in the group's formation.)
 Federal agency: _____
 State agency: _____
 State legislature: _____
 Local government: _____
 Tribe: _____
 Non-profit organization: _____
 Citizen / activist: _____
 Other: _____
16. What was the primary stimulus or event that led to the group's formation? _____

17. What physical / environmental problems are your group highly concerned about? (Please check and explain all that apply; if more than one is checked, please circle the most important)
 a) Water supply / flow regimes: _____

 b) Water quality: _____

c) Fish and wildlife maintenance / endangered species: _____

d) Land use and/or management: _____

e) General environmental degradation: _____

f) Other: _____

18. What institutional problems is your group concerned with? (check all that apply; if more than one is checked, please circle the most important)

a) Inadequate interagency or interjurisdictional coordination: _____

b) Transboundary impacts (from activities outside the group's geographic area): _____

c) Inadequate attention/funding being given to a natural resource problem: _____

d) Lack of local involvement in resource management: _____

e) Ineffective management programs or laws: _____

Other: (please explain): _____

19. What other problem-solving strategies to deal with these problems had been attempted prior to the formation of your group? _____

20. What are the group's short-term goals?

1 _____

2 _____

3 _____

21. Does your group have a mission/vision statement? Yes No
(If yes, please write in the space below or attach.) _____

22. What are your group's long-term goals (if not clear from your mission statement)?

Participation & Organizational Structure of the Group

23. The group includes participants from:
- One or more federal agencies (if so, please indicate the agencies that participate):
 - Forest Service
 - Bureau of Land Management
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Corps of Engineers
 - National Park Service
 - Natural Resource Conservation Service
 - Environmental Protection Agency
 - US Geological Survey
 - Other: _____
 - One or more Indian tribes: _____
 - One or more state natural resource agencies: _____

 - One or more local governments (including conservation districts): _____

 - One or more water districts/organizations: _____
 - One or more environmental organizations: _____
 - One or more non-governmental organizations (other than environmental organizations): _____
 - One or more academics or citizens (not representing any of the categories above): _____
 - Other participants: _____

24. Can anyone join the group? Yes No
If participation is at all limited, please explain: _____

25. Organization of the watershed group:
- a) Does the group have a coordinator? Yes No
If yes, is this a paid position? Yes (funded by: _____) No

b) Does the group have a facilitator? Yes No
If yes, is this a paid position? Yes (funded by: _____) No
If both a & b are marked no, how is the group administered? _____

c) Does the group have sub-committees? Yes No
If yes, please list: _____

d) Does the group have an office? Yes No
If yes, where is it located? _____

Processes of the Group

26. How often do you hold meetings?
 Weekly Twice monthly Monthly Quarterly Twice yearly
 Annual Other: _____

27. Are meetings well-attended and efficiently run? Yes No
If no, please explain: _____

28. How are issues identified and brought to the group? _____

29. The process of discussion and decision-making utilized by the group:
 has been pre-determined by the group during its initial formation
 is at the discretion of the coordinator/facilitator
 is largely ad hoc and unspecified
 Other: _____

30. In order to make decisions, the group requires:
 Unanimous agreement (i.e. all parties expressing agreement)
 Consensus (i.e. no dissenting parties; all parties agree to support the decision)
 Super-majority rule of _____%
 Majority rule
 Other: _____

31. Do all participants believe they have the opportunity to equally and adequately participate in decision-making? Yes No

32. Is the current size, composition, organizational structure, and meeting frequency appropriate for what the group wants to accomplish? Yes No
If no, please explain: _____

33. Does your group interact with other watershed groups? Yes No
If yes, please explain: _____

Budget/Finance Questions

34. What is the current annual budget of the watershed group (including the estimated value of any in-kind services donated to the group, such as administrative support or equipment)?

No budget Less than \$20,000 \$20,000 to \$75,000 More than \$75,000

35. Is this a substantial change from the last few years? No Yes
If yes, please explain: _____

36. Which sources provide funding or other valuable in-kind services?

Federal (excluding NRCS conservation districts):

Agency/Program: Amount / For use in:

State Funding:

Agency/Program: Amount / For use in:

Local (including NRCS conservation districts):

Agency/Program: Amount / For use in:

Other parties/sources:

Agency/Program: Amount / For use in:

37. Is funding adequate to achieve your short-term goals? Yes No

Projects, Activities, and Accomplishments

38. Which of the following activities has your group undertaken or planned to undertake?

a) Development of management plans
 Completed In progress Planned

Please describe: _____

b) Shared decision-making / negotiated problem solving

Completed In progress Planned

Please describe: _____

c) Resource monitoring

Completed In progress Planned

Please describe: _____

d) Scientific research

Completed In progress Planned

Please describe: _____

e) Legal or policy research

Completed In progress Planned

Please describe: _____

f) On-the-ground remediation or restoration activities (e.g. planting trees)

Completed In progress Planned

Please describe: _____

g) Publication of newsletters and/or brochures

Completed In progress Planned

Please describe: _____

h) Conferences / workshops

Completed In progress Planned

Please describe: _____

i) Other educational activities

Completed In progress Planned

Please describe: _____

j) Other activities:

Completed In progress Planned

Please describe: _____

39. Which accomplishment is the group most proud of? _____

Analysis of Performance

40. a) How successful do you believe the watershed group is being in addressing the natural resource problems listed in question #17?

- Very successful Moderately successful Relatively unsuccessful
 Total failure

b) If successful, what evidence is available to support this view? (check all that apply)

- Monitoring data showing on-the-ground improvements
 Most participants believe the problem is being solved
 The level / rate of success is believed to be greater than that possible through other problem-solving approaches. Please explain: _____
-

41. How successful do you believe the watershed group is being in addressing the institutional problems listed in question #18?

- Very successful Moderately successful Relatively unsuccessful
 Total failure

42. Which of the following actions are likely to be an essential component for your continued problem-solving effort? (If more than one box is checked, please circle the most essential action.)

- Changes in federal or state law?
 A substantial modification of land-use practices?
 A substantial modification in water allocation?
 A fundamental reallocation of agency resources and priorities?
 Modified operation of existing facilities?
 Voluntary behavioral and/or ideological changes by local resource users and groups?
 On-the-ground modification of the physical landscape (e.g., tree planting, erosion control, etc)?
 Generation of additional technical data or knowledge about the resource?
 Generation of increased public awareness of the resource or resource problem(s)?
 Other(s). Please explain: _____

43. Overall, are federal agencies helpful to your group?

- Very helpful Moderately helpful Slightly helpful Not helpful

44. Overall, are state agencies helpful to your group?

- Very helpful Moderately helpful Slightly helpful Not helpful

45. Overall, are city and county governments helpful to your group?
 Very helpful Moderately helpful Slightly helpful Not helpful

46. Please list what you think are the top three “Keys to Success”:

1 _____
2 _____
3 _____

Please provide any additional comments about your watershed group and/or feedback on how to improve this survey.

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Useful Websites for Watershed Initiative Research

National

<http://www.epa.gov/surf>

description: EPA Surf Your Watershed

<http://www.epa.gov/surf/adopt/network.html>

description: EPA Watershed Network

<http://www.ctic.purdue.edu>

description: Purdue University's National Watershed Network

<http://www.rivernetwork.org/netwkg.htm>

description: River Network Directory

<http://riverscouncilofwa.org/citdir.htm>

description: Washington Citizen's Directory

<http://water.usgs.gov/public/wrd002.html>

description: U.S. Geological Survey Real Time Watershed Info (by state)

http://www.rvares.er.usgs.gov/nawqa_home.html

description: U.S. Geological Survey Water Quality Assessment (NAWQA)

<http://www.terrene.org/wirsdata.htm>

description: Watershed Information Resource System (WIRS)

<http://glinda.cnrs.humboldt.edu/wmc/>

description: Watershed Management Council (CA)

<http://www.westgov.org/wga/initiatives/enlibra/resourceguide/index.htm>

description: Enlibra Resource Guide (index)

California

http://www.ice.ucdavis.edu/California_Watershed_Projects_Inventory

description: California Watershed Projects Inventory

<http://ceres.ca.gov/cacrm/index.html>

description: California's Coordinated Resource Management and Planning homepage

<http://endeavor.des.ucdavis.edu/wpi/>

description: California Watershed Projects Inventory plus the Natural Resources Project Inventory

Colorado

<http://www.colorado.edu/Law/NRLC/>

description: Natural Resources Law Center

<http://cwrii.colostate.edu/>

description: Colorado Water Resources Research Institute

<http://stewardshipinitiatives.com>

description: Stewardship Initiatives

Montana

<http://water.montana.edu/docs/watersheds/MWCCHome.htm>

description: Montana's Watershed Coordination Council

New Mexico

http://www.nmenv.state.nm.us/swqb/wow_grp.html

description: list of watershed groups working in New Mexico

Pacific Northwest

<http://www.4sos.org/>

description: For the Sake of the Salmon homepage

<http://www.wrd.state.or.us/programs/supply/gweb.html>

description: Oregon Watershed Enhancement Board

<http://www.wa.gov/ecology/watershed/index.html>

description: Washington Department of Ecology Watershed Planning