

RECLAMATION

Managing Water in the West

Sharing Water, Building Relations: Managing and Transforming Water Conflict in the US West

Participant Workbook



U.S. Department of the Interior
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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Sharing Water, Building Relations:

Managing and Transforming Water Conflict in the US West

A Professional Skills-Building Workbook

Prepared and Edited by

Oregon State University

Program in Water Conflict Management and Transformation

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In Collaboration With

US Bureau of Reclamation

Western Water Institutional Solutions Project



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Kitzhaber, John. "Enlibra II." Environmental Summit on the West II. Salt Lake City, UT. 15 May. 2002.

Kitzhaber, John. "Western Governors' Association Enlibra Speech." Western Governors' Association Meeting. Denver, CO. 4 Dec. 1998.

The Oquirrh Institute. Introduction and Overview: Chapter 1. in *The Enlibra Toolkit: Principles and Tools for Environmental Management*. Salt Lake City, UT: The Oquirrh Institute, 2003.

Western Governors' Association. "Policy Resolution 07-4: "Watershed Restoration Through Partnerships," Denver, CO: Western Governors' Association, 2007.

Western Governors' Association. "Water Needs and Strategies for a Sustainable Future," Denver, CO: Western Governors' Association, 2006. Available at: <http://www.westgov.org/wga/policy/07/indian-water-rights.doc>

Western Governors' Association. "Policy Resolution 02-07: Principles for Environmental Management in the West," Denver, CO: Western Governors' Association, 2002.

About the Editors

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How to Use This Workbook

Workbook Rationale

Conflict is normal and arises from an array of sources. Some conflicts offer creative opportunities to deepen our understanding and discover better solutions; others bring things to a stand-still for decades with no apparent resolution. This workbook provides a framework to deepen one's understanding about conflict around western water issues and possible responses. It offers general background information to the context of water conflict in the West, overview materials for different approaches to conflict, skill-building exercises, and supplemental readings.

Structure of the Participant Workbook

The workbook is designed to aid students and professionals through collaborative learning and skills-building exercises to learn about a variety of approaches to responding productively to conflict. It is written to be equally relevant for the participant and a separate instructor manual is available for the instructor/facilitator. This workbook is designed to stand alone, for basic understanding of the issues and processes involved, or to supplement other texts.

Suggested supplemental readings are listed at the end of each module in the Participant Workbook, and extensive citations are listed in the bibliography (Appendix A) to guide the participants in further inquiry. The exercises can be worked straight through or they can be selected individually, as the instructor/facilitator deems appropriate.

In a very general sense, a framework for assessing and engaging western water conflict is presented as four non-linear stages of negotiation or processes – adversarial, reflexive, integrative, and action. The framework helps participants understand the likely nature and outcomes of the processes they are participating in, as well as helps leaders understand what may be needed for more fruitful processes depending on the challenges they face.

These four stages depend on increasingly keen communication skills and understanding, as well as ability to detect and frame common goals, dreams, and visions. While a negotiation process might naturally flow among the stages of the framework, or individual stakeholders might be operating from different levels, negotiation processes can also be designed and facilitated in a way that it is more completely reflective of one stage. Though the elements of all stages exist at the same time, many don't recognize this, which limits their potential for conflict

transformation. Further, the nature of relationships between stakeholders and the resource, and the preparation and skills needed at each stage differs significantly. These differences and skills are discussed within the following modules organized around each stage of the framework:

Module 0: Introduction to Hydropolitics in the Western United States.

Module I: Initial State – Law, Allocations, and Jurisdictions. Western water conflict often arises over uncertainties created by an array of state and federal laws and institutions affecting water's use and nonuse. Many institutions provide mechanisms for this type of conflict resolution. At this level, conflict arises between and among stakeholders over how water will be used, protected, and managed. Conflicts at this state can be interpersonal, inter-agency and/or inter-jurisdictional as well. Focus and analysis is on stakeholders, positions, and issues. Usually there is just one issue for negotiation. Negotiations are often *adversarial*, with an emphasis on *rights*. Skill-building exercises deepen our awareness of our own role in conflict through our misperceptions, entrenched thinking, and miscommunication.

Module II: Changing Perceptions: Basins without Boundaries. Negotiations at this level may be convened outside of traditional institutional structures and engage relevant economic sectors, environmental concerns and public interests. The focus is on **skills-building** and listening skills. Negotiations occur in a *reflexive* stage, and parties identify *needs and interests*.

Module III: Enhancing and Sharing Benefits. The focus shifts and is no longer about negotiation, water management, or conflict. Instead, it becomes a collaborative process with the intention of promoting constructive change processes. The process engages the dynamic natural and social systems within which relationships are embedded. Participants explore reframing the problem for the new possibilities and insights it presents. Together they uncover and form a base of shared meaning that can help coordinate and align collective actions and shared values. The focus is on consensus-building, and analysis is on benefits of cooperation. The process is *integrative*, where parties define *benefits* – economically, ecologically and socially through time.

Module IV: Putting it all Together – Institutional and Community Capacity. The focus here is on capacity-building, and analysis is on institutional capacity. It is an *action* stage. Governance structures are usually created or adapted to complement existing institutions and structures. These offer the crucible for ongoing discussions, community-building and progress at a human scale, and are ideally networked with relevant institutions and agencies to meet resource management, restoration, and sustainability goals.

In the Participant Workbook, each of the modules includes general setting information, overview material, skill-building exercises, and supplemental

readings. The exercises in the Participant Workbook are not detailed and only highlight the objectives and key points of the exercise; they are, however, detailed in the Instructor Manual.

Module 0: Introduction to Hydropolitics and Conflict Transformation

Module 0 Overview. Introduction to Hydropolitics

Water, unlike other scarce resources, is integral to all facets of life – from biology and ecological integrity, to health, economies, and community identity, to aesthetics and spiritual practice. It touches our deepest values. It also fluctuates wildly in space and time in its presence.

Water management, therefore, is by definition conflict management. Yet water management is usually fragmented, and it is often subject to contradictory, competing, and/or antiquated laws. Though different laws try to provide certainty about use and availability of water, the task for water management is multi-objective and based on navigating competing interests and needs.

Within a nation or state these interests usually include domestic users, agriculturalists, hydropower and energy producers, recreators, and environmentalists—any two of which are regularly at odds—and the chances of finding mutually acceptable solutions typically drops as more stakeholders are involved. Add international boundaries, and, without careful understanding and handling of the issues involved, the chances decrease yet again. Finally, trying to anticipate and plan for the dynamic nature of the hydrologic system as well as the natural systems and society that depend upon it, is more of an art than science, and challenges our traditional organizations and structures.

Section A. General Setting: The Western United States

Western water law and management have their own version of this dynamic. In addition to the expected conflicts between diverse and sometimes incompatible users, the western United States has some unique circumstances that add complexity. For example, the West is the most rapidly growing region in the United States.¹ Finding the water and creating the infrastructure to meet the needs of this unprecedented growth is a challenge in itself. The fact that it is also the driest region in the country compounds the challenge.

Water to accommodate new growth is likely to rely largely on water obtained from changes to existing uses of surface and ground water, with limited opportunities to develop new supplies. In some cases it may mean using new management and/or conservation strategies. Any of these has the potential to trigger conflict with other users. Agricultural water is a likely source of water to be converted to meet growth needs since it accounts for most of the diversions from rivers and streams in the West. Rural communities often experience social, economic, and environmental impacts from these transfers, as do the traditional users. Many of these “third party impacts” – or adverse consequences – are important yet difficult to fully anticipate. Further, as water is transferred from agricultural uses to municipal and industrial water use, demand becomes more inelastic – limiting options and flexibility in water management to meet multiple needs in times of drought or shortage.

While there is legal and public support for several instream uses including water for fish, wildlife, recreation, habitat for endangered species, and water quality, the western water management system has been struggling to catch up with these needs and manage water for these uses. Different western states have tried a myriad of fledgling approaches to start to systematically address these needs. Often, however, reallocations of water for instream needs are catalyzed by legal action or the threat of legal action. Finding ways to meet these needs in arid areas experiencing growth is increasingly complex, contentious, and has the potential to bring any water management decision to a standstill as water interests exert their political and legal power.

Other pressures are growing. As foreign oil climbs in its cost and tensions over supplies, many look to western states to meet some of the country’s energy production. This is expected to raise additional demands and challenges to

¹ From 2004-2005, five of the six fastest growing states were Arizona (3.5%), Nevada (3.5%), Idaho (2.4%), Utah (2.9%) and Texas (1.7%) with four other states not far behind – Colorado (1.4%), Oregon (1.4%), New Mexico (1.3%) and Washington (1.3 %). The West was the fastest growing region in the 1990s as well growing by 19.7 percent. Source: Western Governors’ Association. “Water Needs and Strategies for a Sustainable Future,” Denver, CO: Western Governors’ Association, 2006 (citing U.S. Census Bureau statistics).

existing water supplies and their water quality – from how to deal with water produced from extraction processes, to meeting the cooling water demands of coal and natural gas fired power plants, to the environmental and flow regime challenges of hydropower.

Unquantified Indian water rights have been an issue for many decades – arguably since the mid-1800s. While 21 negotiated settlements of Indian land and water rights have been reached in the last 25 years, many remain. In most basins, tribes have the oldest water rights. Tribal rights may also include fishing and hunting rights which have further implications for water and land management. In the absence of litigated or negotiated settlements quantifying the amount of water represented by these rights (and any associated hunting and fishing rights), uncertainty remains for the tribes as well as all junior users and water managers.

Historically, the uncertainty of these long-unquantified reserved Indian water rights has run directly into the willingness of energy industries and other businesses to invest in any major enterprise in the western states. Unlikely coalitions have formed since 1987 to try and solve this uncertainty – with western businesses, western governors, western water managers, and tribal organizations calling for the quantification of these reserved Indian water rights.² In 2006, the Western Governors’ Association stated that “Failure to conclude meaningful water right settlements will undermine the Western States’ planning for sustainable growth and disrupt their ability to meet long term water demands.”³

The other 800-pound gorilla is climate change. Climate change and drought response are relative newcomers to this complex picture. Because the West stands to be disproportionately impacted by climate change,⁴ western state, federal, tribal, and local leaders, agencies, utilities, businesses, farmers unions and conservation organizations, are taking it seriously.⁵ The average temperatures in the West have reportedly risen more than any other region of the contiguous United States during the last century. Regional climate models suggest temperature increases in the West could be 4-13 degrees F during this century. In the West, this is likely to result in smaller snowpack, earlier snowmelt, more extreme flood events, receding glaciers, more evaporation and dryness, less groundwater, more drought, more wildfires, water quality challenges, reduced productivity of hydropower facilities, challenges to navigation because of reduced

² Western Governors’ Association. “Policy Resolution 07-3: Negotiated Indian Water Rights Settlements,” Denver, CO: Western Governors’ Association, 2007.

³ Western Governors’ Association, “Water Needs and Strategies for a Sustainable Future,” 19.

⁴ Ibid, 21.

⁵ See The Rocky Mountain Climate Organization, Western States Water Council, Western Governors’ Association websites for references to their work.

flows, irreversible ecosystem impacts, and reduced recreation opportunities and economies.⁶

The challenges multiply when any of these impacts is probed. For example, the Rocky Mountain States get 70 to 90 percent of their water supply from snowmelt. Earlier snowmelt means that peak streamflows will be earlier, weeks before the peak needs of farmers, ranchers, homeowners, rafters and others. The loss of nature's very efficient high-elevation natural seasonal reservoir – snowpack – creates a myriad of challenges both in terms when, where and how much supply will be available, and questions about storage in general.

These are among the many opportunities and challenges in this dynamic system. While some of the looming challenges are still coming into focus, the West is working to evaluate its legal and institutional frameworks to enhance flexibility and responsiveness. To date, its ability to adopt adaptation policies is complicated by complex water adjudications and the dominance of federal land.⁷ It also wrestles with its century-old laws which were made with different societal goals in mind. Nevertheless, there are some promising signs and examples of adaptation for such dynamic times and needs.

⁶ Western Governors' Association, "Water Needs and Strategies for a Sustainable Future," 21, and The Rocky Mountain Climate Organization. "Less Snow, Less Water: Climate Disruption in the West," Louisville, CO: The Rocky Mountain Climate Organization, 2005.

⁷ Western Governors' Association. "Regional and National Policies Regarding Global Climate Change," Denver, CO: Western Governors' Association, n.d..

Section B. Challenges and Opportunities for Western Water

Context

Both western water conflict and its resolution can result from the application of current laws, institutional coordination and function, funding levels, and capacity of agency resources that are available to issues around western water.

The Challenges

One of the challenges to western water management is the array of laws that were written at different times that are still simultaneously on the books. Because of their different objectives, they do not always work in harmony, nor are they equally relevant to the challenges of the day. Further, there are sometimes tensions and jealousies between layers of government over whose laws are attended to first. There are also challenges created by the lack of funding and human resources allocated by different levels of government or non-governmental organizations to implement the laws and to help them work in concert. All of these can create conflict and frustrations.

The Opportunities

While there is the potential for paralyzing disputes, history shows that water and new issues around its management can catalyze dialogue and cooperation, even between especially contentious users. Moreover, as we move from thinking about rights and jurisdictions to thinking in terms of sharing “baskets” of benefits, or entirely reframing around our quality of life and today’s higher dreams, the opportunities of cooperation become palpable.

Traditional Chronology: Development, Crisis, Conflict Resolution

A general pattern exists across the West whereby senior water right holders established rights to the point of complete, if not over-appropriation of the resource. Subsequently, even more senior, but unquantified rights (usually tribal rights), or water and/or flows for water quality, habitat, or endangered species need to be addressed. This shifts certainty and expectations for other water right holders. This alone can be enough to bring a basin to a standstill. Then add a drought or growth. While this can create situations that may be even frightening (e.g. the Klamath), it can also be the catalyst for taking the steps necessary to reframe and retool institutions, agreements, and funding structures.

Getting Ahead of the Curve: Reframing & Institutional Capacity Building

Despite their complexity, water and water-related disputes *do* get resolved. Resulting agreements and institutions can be very resilient. The challenge is to get ahead of the “crisis curve,” to facilitate capacity and cooperation in advance of costly, time-consuming crises which, in turn, threaten local and regional economies, human and community health, and ecosystems. In general, successful

approaches have been to pivot the focus on quantity to quality, and to shift from incremental and Cartesian thinking to an increasingly comprehensive and systemic approach.

Section C. Adaptive Management and Conflict Management⁸

Reclamation has also developed a manual for using adaptive management workshops as a forum for water resource conflict management. The topic of adaptive management and how it relates to conflict management and transformation is briefly presented in this workbook. For additional information on adaptive management refer to, “An Adaptive Management Workshop Manual to Assist in the Prevention, Management, and Resolution of Water Resource Conflicts” (see Appendix A for full reference).

Introduction to Adaptive Management

Adaptive management is a rigorous approach to managing complex natural systems by deliberately designing and conducting management actions as experiments to improve learning and reduce uncertainty so that decision makers have a scientific foundation to integrate with political considerations in determining whether or not to change management policies.⁹ Adaptive management is not an end unto itself, but rather a means to reach better decisions that result in improved resource management.¹⁰ It is one of several related collaborative management methods that have been used to address complex natural resource issues.¹¹

Adaptive management often is portrayed as a six-step process or cycle (Figure 1). Step 1, assessing the problem, often is accomplished in part through a series of workshops that include input from scientists, managers, and other stakeholders. Participants define the scope of the problem, bring together existing knowledge, and forecast potential outcomes of different management actions that might be

⁸ This section is adapted from Kubly, D. and D.R. Clark. *An Adaptive Management Workshop Manual to Assist in the Prevention, Management, and Resolution of Water Resource Conflicts*. Salt Lake City: Bureau of Reclamation. 2012.

⁹ Holling, C.S. *Adaptive Environmental Assessment and Management*. New York: John Wiley & Sons. 1978; Walters, C. *Adaptive Management of Renewable Resources*. New York: Macmillan Publishing Company. 1986; Bormann, B.T., et al. “Adaptive Management.” in *Ecological Stewardship: A Common Reference for Ecosystem Management*, ed. Johnson, N.C., et al. (Oxford, UK: Elsevier Science Ltd., 1999), 505-534; Murray, C. and D.R. Marmorek. “Adaptive Management: A Spoonful of Rigour Helps the Uncertainty Go Down.” *Proceedings of the 16th International Conference, Society for Ecological Restoration*, Victoria, Canada, August 24-26, 2004.

¹⁰ Williams, Byron K., Robert C. Szaro, and Carl D. Shapiro. “Adaptive Management: the U.S. Department of the Interior Technical Guide.” Washington, D.C.: Adaptive Management Working Group, U.S. Department of the Interior. 2009. Accessed online August 20, 2012: <http://www.doi.gov/initiatives/AdaptiveManagement/documents.html>.

¹¹ Blumenthal, Dana and Jean-Luc Jannink. “A Classification of Collaborative Management Methods.” *Conservation Ecology* 4, no. 2 (2000): 13. Accessed online September 19, 2011, <http://www.consecol.org/vol4/iss2/art13/>.

taken. Design, in step 2, refers to the development of management and monitoring plans under which to take actions and measure their effects. In steps 3 and 4 the plans are implemented and observations are made on resource responses. Step 5 is the phase in which program participants compare what happened to what was forecast to happen. In step 6, adjustments are made based on knowledge gained to improve achievement of management objectives.

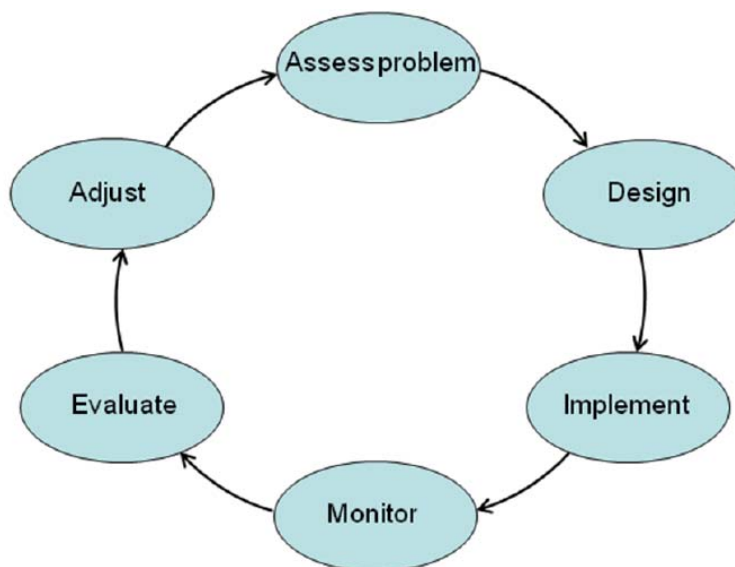


Figure 1. A diagrammatic framework for the adaptive management process of learning by doing.¹²

These six steps also can be divided into two phases: a setup phase and an iterative phase.¹³ In the set-up phase key components are developed, and in the iterative phase those components are linked together in a sequential decision process. The set-up phase has five structural elements, namely stakeholder involvement, management objectives, potential management actions, predictive models, and monitoring plans. The iterative phase uses these elements in an ongoing cycle of learning about system structure and function, and managing based on what is learned. To be effective, adaptive management requires a commitment to learn and then adjust based on what is learned. It is much less likely to be effective if participants enter the process with their minds made up leaving little opportunity for learning. Since one cannot learn from experience without measuring the consequences of actions taken, adequate resources for monitoring effects of actions also are necessary. Finally, decisions, actions and outcomes need to be

¹² Nyberg, Brian. "An Introductory Guide to Adaptive Management for Project Leaders and Participants." Vancouver, British Columbia: British Columbia Forest Service. 1999.

¹³ Williams et al. 2009; Williams, B.K., and E.D. Brown. Adaptive Management: The U.S. Department of the Interior Applications Guide. Washington, DC: U.S. Department of the Interior. 2012. Available at: <http://www.usgs.gov/sdc/doc/DOI-Adaptive-Management-Applications-Guide-27.pdf>.

documented and communicated to all involved in the process, so that knowledge gained is shared.¹⁴

Intersect between Conflict Management and Adaptive Management

Adaptive management brings to conflict management a process for commitment to an open forum with broad-based participation that allows a wide variety of positions to be heard in seeking solutions. It brings a commitment to an objective, science-based foundation for decision making that forces attention to fact finding and learning in the face of uncertainty. Participants agree to apply modeling as a means to achieve a better understanding of how resources may react to management actions and to allow comparisons of predicted outcomes, in full view of underlying assumptions and uncertainties. Monitoring of resources ensures that managers have feedback on whether their actions are having the desired effects. From these projected outcomes and empirical results, experiments can be designed to test the predictions and improve knowledge, or, if risks are acceptable to decision makers, policy changes can be implemented. Through this combination, the process has the potential to satisfy the need for legitimacy, fairness and wisdom.¹⁵

There are situations in which the issues that engender conflict are driven primarily by differences over values, rather than over outcomes. People can disagree about many different aspects of a resource management issue, but these differences usually center on either facts related to cause and effect relationships or values directed at preferences for an outcome. Cardwell and others (2009) use an example of the relationship between stream flows and a recreational fishery to illustrate the difference.¹⁶ Participants in the dispute can disagree over technical questions (facts) such as whether a particular flow will affect a fishery. They can also disagree over what the flow should be based on their preference (values) for whether or not the fishery should even exist in the stream. Where the latter prevails, resolution of the dispute may not be furthered by incorporation of additional scientific information and reduction of uncertainty. The influence of science in adaptive management will thus be stymied, leading to pathways that rely more on bargaining and compromise.¹⁷

This is not to say that adaptive management and conflict management processes exist in two separate worlds. During the course of much resource-based conflict management, there will be times in the process where participants disagree because they differ in their values, but other times where a science-based

¹⁴ Nyberg, 1999.

¹⁵ Wondolleck, J., and S. Yaffe. *Making Collaboration Work: Lessons from Innovation in Natural Resource Management*. Washington, D.C.: Island Press. 2000.

¹⁶ Cardwell, H., S. Langsdale, and K. Stephenson. *The Shared Vision Planning Primer: How to Incorporate Computer Aided Dispute Resolution in Water Resources Planning*. U.S. Army Corps of Engineers Institute for Water Resources Report 2008-R-2. 2009.

¹⁷ Lee, K.N. *Compass and Gyroscope*. Washington, D.C.: Island Press, 1993.

approach is profitable. The successful practitioner will recognize these critical junctures and apply appropriate techniques to continue learning and problem solving. Lee refers to the two components metaphorically by characterizing adaptive management as a compass that guides the application of science to policy by producing reliable knowledge on the relation between cause and effect for resource responses to purposeful and unavoidable changes in the environment, whereas bounded conflict, addressed through conflict management techniques, serves to constrain politics in such a way as to protect the adaptive process by disciplining discord.¹⁸

Adaptive Management Workshops as Forums for Conflict Management

Adaptive management workshops are considered a *core activity* in adaptive management endeavors and they can serve a valuable purpose in promoting dialogue, understanding, and trust in conflict management. Their principal use historically has been in the initial phase, assessing the problem, however they can occur anywhere in the process as a means of communication with and gaining responses from stakeholders.

The primary steps in using adaptive management workshops as a forum for conflict management and decision-making are (a) *pre-meeting* efforts, (b) *scoping* workshop sessions, (c) *structure* workshop sessions, (d) *dynamics* workshop sessions, and (e) *implementation*.¹⁹

During the *pre-meeting* period, the organizers of the conflict management process inform themselves as to the critical issues, history, scale, and geographic extent of the conflict. They make a preliminary assessment as to the usefulness of adaptive management processes for addressing the conflict before them.

At *scoping* workshops, there will be an exploration of the participants' expectations and concerns. The rationale for using an adaptive management approach will be discussed. Training in conflict management skills will occur. Time is spent determining what management problems must be addressed and their geographic scope. The participants work toward identifying management objectives and identifying key indicators for the success or failure to meet each objective. Development of an overall conceptual model of the management problem is a key exercise in the scoping process.

At *structure* workshops, detailed analyses are undertaken of the water basin subsystems and their inter-relations. Once this is done, it will be possible to determine what the implications of this new understanding are for the various

¹⁸ Ibid.

¹⁹ Walkerden, Greg "Adaptive Management Planning Projects as Conflict Resolution Processes." *Ecology and Society* 11, no. 1 (2005): 48. Accessed online September 12, 2011, <http://www.ecologyandsociety.org/vol11/iss1/art48/>.

stakeholder interests. Does this new understanding open up new possibilities for reallocation of basin benefits? A scenario gaming environment, conceptual models, and/or quantitative models can be used to explore the outcomes of various assumptions or management actions.

During the *dynamics* workshops exploration of the outcomes of various assumptions and management actions continues with an eye towards reaching a final accord. Negotiation goes on hand in hand with adaptive management processes. If they are successful, a final agreement is signed.

Implementation will generally be accomplished under the auspices of government agencies. Nonetheless, some stakeholders may wish to continue their involvement in the adaptive management conflict management process into the various stages of implementation to monitor implementation results. The relationships built up during this process can often be used to forestall and resolve subsequent conflicts.

Additional adaptive management references:

Walkerden, Greg “Adaptive Management Planning Projects as Conflict Resolution Processes.” *Ecology and Society* 11, no. 1 (2005): 48. Accessed online September 12, 2011, <http://www.ecologyandsociety.org/vol11/iss1/art48/>.

Williams, Byron K., Robert C. Szaro, and Carl D. Shapiro. “Adaptive Management: the U.S. Department of the Interior Technical Guide.” Washington, D.C.: Adaptive Management Working Group, U.S. Department of the Interior. 2009. Accessed online August 20, 2012: <http://www.doi.gov/initiatives/AdaptiveManagement/documents.html>

Williams, B.K., and E.D. Brown. Adaptive Management: The U.S. Department of the Interior Applications Guide. Washington, DC: U.S. Department of the Interior. 2012. Accessed online September 10, 2012: <http://www.usgs.gov/sdc/doc/DOI-Adaptive-Management-Applications-Guide-27.pdf>.

Section D. The Framework – Stages of Water Conflict Transformation

As mentioned in the Rationale, there are no “blueprints” for water conflict transformation. There does seem to be, however, general patterns in approaches to water conflict which have emerged over time. Positional disputes between, for example, developers and environmentalists, or rural and urban users, suggest zero-sum confrontations where one party’s loss is another’s gain where confrontation seems inevitable. Yet such “intractable” conflicts are regularly and commonly resolved, as creative thinking and human ingenuity allow solutions which draw on a more intricate understanding of both water and conflict to come to the fore.

This workbook offers a framework for transformation of water disputes from zero-sum, intractable disputes to positive-sum, creative solutions. The framework illustrates how conflict can be approached from four ways of perceiving the situation and possibility (Figure 2). Note that all four types are possible simultaneously – somewhat like nesting Russian dolls. If one were to move from the first type to the fourth type they would move from a situation that is polarized and focused on differences to something that has never been created before.

The four types need not be approached in any sequence, and no one approach need be achieved before another. However, one may notice that there could be a logical and building flow from the first to the fourth process as participants grow in their skill level, self-awareness, trust in the process, and imagination. This workbook is structured to move through these processes as a way to build skills and understanding in a logical fashion. Therefore, there may be references to “levels” or “stages” of negotiation or process. Once these levels/stages have been mastered, however, one can move more freely throughout the framework.

In today’s world, many disputes are resolved using the skills, tools and institutions of the first or second levels. Outcomes are still satisfactory and resilient. Relatively few conflicts actually use the third or fourth level because it is still an emerging paradigm which relatively few are consciously aware of or fluent in. Nevertheless, like any skill, it is useful to understand the full framework and how one might move fluidly through and between the levels when assessing conflicts and creating solutions. Further, currently there are conflicts that appear to be intractable. These and several other challenges facing the West appear to be good candidates for work at the third and fourth levels.

Type of Process/ Negotiation Stage ²⁰	Focus of Process	Collaborative and transformational skills ²¹	Context, Geographic Scope, or Framing for Outcomes
Adversarial	Rights	Trust-building; deepening understanding of conflict	State, federal, tribal land and water laws; Priority, jurisdiction & supremacy/sovereignty of rights
Reflexive	Needs and Interests	Skills-building in listening for and identifying positions, needs and interests	 Watersheds/Basins
Integrative	Benefits/ Values/ Reframing	Consensus-building; relationship-building	 “Problem-shed”/“Benefit-shed”
Action	Governance in relationship to dynamic systems; equity	Capacity-building; community-building	 Networked systems across state, region and/or country

Figure 2: Four Stages of Water Conflict Transformation

²⁰ These stages build primarily on the work of Jay Rothman, who initially described his stages as ARI – Adversarial, Reflexive, and Integrative (Rothman 1989). When ARI become ARIA, adding Action, Rothman’s terminology (1997) also evolved to Antagonism, Resonance, Invention, and Action. We retain the former terms, feeling they are more descriptive for our purposes.

²¹ Expanded from and including Kaufman (2002), who ties each set of dynamics specifically to Rothman’s ARIA model in great detail, based on his extensive work conducting “Innovative Problem Solving Workshops” for “partners in conflict” around the world.

Communication Style	Goal of Conflict Resolution Process²²	Focus of Process and Participants	View of Conflict
Defend; Debate; Deliberate	Make decision – often win/lose among parties who differ	Apply laws and policies to reach a decision; control information to be selective and tactical	Competitive; polarized; desire to bring pain, anxiety, and difficulties to a end
Listen without resistance; explore underlying causes, beliefs, and assumptions	Reach an agreement among parties about the presenting problem	Content-centered	Need to de-escalate
Generative dialogue; collectively invent new possibilities and new insights	Promote constructive change processes; uncover and form a base of shared meaning that can help coordinate and align actions and values; solve and dissolve problems ²³	Relationship-centered; engages the systems within which relationships are embedded; focus shifts to listening/sensing an already existing wholeness; share information	Collaborative; Envisions conflict as an ecology that is relationally dynamic, all of which is normal and results in constructive change.
Network information and communication to maintain collective flow and opportunity	Facilitate people thinking and acting together in relationship within reframed context from which new agreements can come	Create or re-create institutions, policies, structures, and networks from which communities/society can express their new basis of shared meaning, goals and principles	Conflict leads to new capacity, and a shared vision reflecting new understanding to improve quality of life

Figure 2: Four Stage of Water Conflict Transformation (continued)

²² Developed from Lederach, John P. *Preparing for Peace: Conflict Transformation Across Cultures*. (Syracuse, NY: Syracuse University Press. 1995).

²³ Isaacs, William *Dialogue: The Art Of Thinking Together*. (New York, NY: DoubleDay. 1999).

Stage 1 – Adversarial

Figure 2 illustrates the generalized framework and each of the stages or perspectives. It begins with Stage 1, where conflict is perceived as *adversarial* and competitive. Participants are focused on their *rights*. They may also focus on their issues and positions. Their thinking is framed in “us vs. them”; black and white. Attention is often focused on the past.

Adversarial negotiations often arise over uncertainties created by an array of state and federal laws and institutions affecting water’s use and nonuse. At this level, conflict occurs between and among stakeholders over how water will be used, protected, and managed. Conflicts at this level can be inter-personal/organizational, inter-agency, inter-jurisdictional, and/or inter-governmental. Focus and analysis is on stakeholders, positions, and issues. Often the negotiation is focused on water allocations.

There are skills that can be developed at this level that can lead to greater understanding and more satisfactory outcomes. The collaborative learning emphasis is on self-awareness of how we communicate and perceive situations, and *trust-building*. These can open us up to the possibility that there is more to a situation than we originally thought, and help us be willing to listen to other perspectives without believing that we need to change them.

Stage 2 – Reflexive

In the *reflexive* level, Stage 2, the focus shifts from *rights* (what a party feels it legally deserves) and positions (specific proposals disputants put forth that suggest a way the conflict can be resolved), to *needs* (what is actually required to fulfill disputants’ goals) and *interests* (the expression of needs which drive behavior and provide motivation to seek a solution to a problem). Reflexive negotiations are also called collaborative processes, alternative dispute resolution, and mediation.

The tone is more open. Listening becomes pivotal to success. The process involves all parties with a stake in an issue – those who are affected by the outcome and those in a position to help implement or block implementation of an outcome (i.e. stakeholders). Attempts are made to shift the nature of negotiations to try to increase the amount of resources and to maximize mutual gain.

This shift, from speaking to listening, from rights to needs and interests, is a crucial conceptual shift on the part of the participants, and can be both profoundly difficult to accomplish, and absolutely vital to achieve for any movement towards win-win solutions that are more sustainable for basin management. To help accomplish this shift, the collaborative learning emphasis is on *skills-building* – becoming a better listener, and learning how to elicit and work with the needs and interests of stakeholders. Once participants are able to hear each other better and understand their motivations and needs, the problem-solving capabilities, which are inherent to most groups, can begin to foster creative, cooperative solutions.

Stage 3 – Integrative

The third type of process is *integrative*. The focus shifts. Initially, the needs expressed in stage 2 begin to coalesce and forms group interests – the “why” underlying the desire for the resource. The process is no longer about negotiation, water management, or conflict. Instead, it becomes a collaborative process with the intention of promoting constructive change processes, and enhancing the quality of the resource and quality of life.

Instead of the old habit of thinking of water as something to *manage*, the process engages participants in thinking about how to enhance benefits throughout the region, primarily by thinking comprehensively about resources beyond just water. They explore a new way of thinking about the dynamic natural and social systems within which relationships are embedded. This might include geographic units other than the basin they have previously focused on.

Participants explore reframing the problem for new possibilities and insights. Together they uncover and form a base of shared meaning that can help coordinate and align collective actions and shared values. The focus is on *consensus-building* and parties think in terms of a “problemshed”/“benefits-shed,” and *benefits* – economically, ecologically and socially through time.

Stage 4 – Action

The focus of the *action* stage is on capacity-building, and analysis is on institutional capacity. Governance structures are usually created or adapted to complement existing institutions and structures. These offer the crucible for ongoing discussions, community-building and progress at a human scale, and are ideally networked with relevant institutions and agencies to meet resource management, restoration, and sustainability goals.

The scale is dependent on the chosen problemshed/benefits-shed, but is likely to engage a network of local, state, regional and even national entities. Some may need to be created; others may need to learn to work in new ways with one another. The collaborative learning emphasis is on *capacity-building*, primarily of institutions.

The Framework in Total

It is critical not to think of these “stages” as a linear process; the further along the better. Each “stage” co-exists with the other stages. For example, our rights, interests, needs, values, hopes and dreams all live within us at the same time. If, through a process in Stage 3, structural shifts or a paradigm shift occurs, the change will need to be reflected in the rules and rights in Stage 1.

Issues differ and call for different responses. Leadership and “ripeness” also differ from issue to issue. Sometimes issues should be addressed as is; other times, they reflect a bigger pattern of problems and interconnections that would be better addressed by a more significant and holistic shift.

One might think of these stages as existing in parallel “universes” simultaneously, each with its own set of approaches or tools, any of which may be useful at any given time, or conceptually as a helix or set of spheres rather than strictly linear. They are broken down here only for the purposes of explanation.

Section E. Basic Definitions for Dispute Resolution²⁴

Definitions associated with Stage 1:

Competitive – Competitive negotiators want to "beat" their opponents; they use high demands, threats, and make few concessions. They generally try to undermine their opponent's confidence and seek the maximum for themselves. This traditional style of negotiating goes by a number of different terms such as positional, win-lose, adversarial, power negotiating, hardball, and hard bargaining.

Distributive Bargaining – In distributive bargaining the parties think of the items being negotiated as fixed and each party tries to get the most for themselves. Usually there is just one issue for negotiation and more for me means less for you. Negotiators are bargaining over the distribution of profit on the bargaining range. This is a "zero-sum" negotiation. Although the goals of the parties are in direct conflict, a negotiator can be either competitive or cooperative in a distributive bargaining situation.

Definitions associated with Stage 2:

Cooperative – Cooperative negotiators want to "work with" their opponents; they use reasonable opening offers, show good faith, and initiate the exchange of mutual concessions. They seek a fair and just settlement. This style of negotiating is also called win-win, interest-based bargaining, and problem solving.

Interest-based – Interest-based bargaining attempts to shift the nature of negotiations to a more collaborative basis. Instead of moving from position to counter-position to compromise, negotiators try to identify their interests PRIOR to the development of solutions. Once interests are identified, the negotiators then jointly develop a wide-ranging set of alternatives, and then choose the best alternative.

Integrative Bargaining (may also be associated with Stage 3 process) – During integrative bargaining, the parties are working together to increase the amount of resources and to maximize mutual gain. Integrative bargaining requires two or more issues so that trades can be made. Creating the additional resources is sometimes referred to as "expanding the pie". Some would call this "Win-Win" negotiating. The theory here is that the parties have different interests which can be integrated (reconciled) to create joint gains. Joint gains are an improvement for all parties to a negotiation.

²⁴ Adapted from Barkai, John. "Teaching Negotiation and ADR: The Savvy Samurai Meets the Devil." *Nebraska Law Review* 75, (1996): 704-751.

Positions – Positions are "what" the negotiators say they want. They are really solutions which have been proposed by the negotiators. Positions are based upon the interests of the parties; interests are usually not disclosed, at least not in competitive negotiations. In most negotiations people take, and then give up, a series of positions. Behind every position lie many interests.

Interests – Interests are "why" the negotiators want the positions they take. Interests lie behind the positions of the negotiators. Interests represent the basic needs to be met. Money and price are not interests in themselves. Money represents purchasing power, the ability to acquire other needs, status, or power itself. Understanding interests is the key to understanding "win-win" negotiating. In many negotiations the interests are never explicitly discussed. In fact, interests are usually kept secret. Successful "win-win" negotiating requires finding a way to disclose interests without being taken advantage of.

Section F. Understanding Conflict

Exercise 0.1: Understanding Conflict

Exercise is conducted by instructor/facilitator.

Objectives

Part 1: Understanding Our Perception of Conflict – To introduce how negatively most perceive conflict; that we can change that perception.

Part 2: Optical Illusion –To introduce how misperceptions can exacerbate conflict.

Part 3: Scoring Points –To introduce how entrenched thinking can put us automatically in a conflict posture where often better results can be obtained through cooperation.

Part 4: Ugli Orange – To point to the exacerbating role miscommunications play in conflict.

Key Points of Exercise

Misperceptions can exacerbate conflict for instance when we say “water” or “rights” or “own” it can mean different things to different people.

Entrenched thinking can put us automatically in a conflict posture where often better results can be obtained through cooperation. This also points to *listening* as a key skill in conflict transformation.

Miscommunication exacerbates conflict.

There is a difference between *positions* (what someone wants) and *interests* (why they want it) (See Module II for further exploration of interests). In general, transforming conflict from distributive, or zero-sum, to integrative, or positive-sum, requires understanding the interests that underlie the positions of a party, which is often incredibly difficult to determine.

Emotions can run high in negotiations.

Instructions/Additional information

To be provided by instructor.

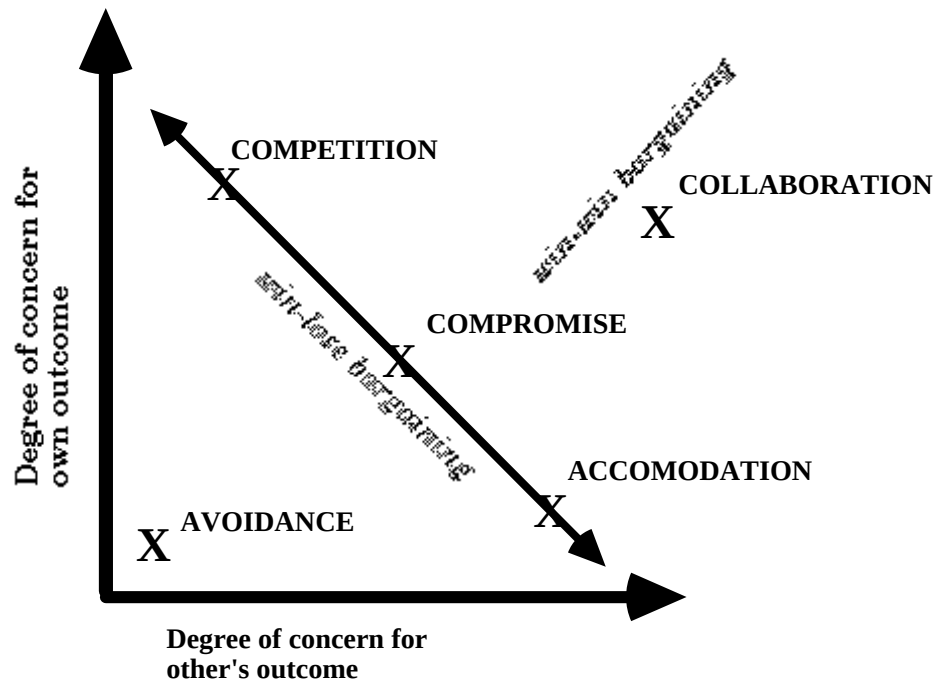


Figure 3: Styles of Conflict Management²⁵

²⁵ Delli Priscoli, "Collaboration, Participation, and Alternative Dispute Resolution: Process Concepts for the Banks' Role in Water Resources." See "Basic Definitions" in Module 0: Section D for more information.

Section G. Supplemental Reading for Module 0

Western Governors' Association. "Water Needs and Strategies for a Sustainable Future," Denver, CO: Western Governors' Association, 2006.

<http://www.westgov.org/wga/publicat/Water06.pdf>

Western Governors' Association, "Water Needs and Strategies for a Sustainable Future"

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Water Needs and Strategies for a Sustainable Future



Western Governors' Association ♦ June 2006



The Western Governors' Association wishes to thank the Western States Water Council for its assistance in the preparation of this report.

Background - Challenges are Increasing

Population growth is continuing at an unprecedented rate in the West with ramifications not only for cities but rural communities and agricultural areas. At the same time, public support continues to grow for instream uses, which include bays and estuaries, for such purposes as fish and wildlife habitat, recreation, and water quality protection, placing additional demands on a limited resource.

Water for increasing energy needs is expected to raise additional demands on available supplies. Unquantified Indian water right claims represent further challenges which strain water resources and institutions throughout the West. Climate change represents another threat to reliable and sustainable water supplies for the West. A recent study finds that “no other effect of climate disruption is as significant as how it endangers already scarce snowpacks and water supply.”¹

While water resources are available for growth in the aggregate, they are essentially fully “appropriated” under regimes that have vested private property rights in water right holders. New uses to accommodate growth must largely rely on water obtained from changes to existing uses of surface and ground water, with limited opportunities to develop new supplies. In many instances,

this will result in the reallocation of water to “higher valued uses” with accompanying third party impacts that must be considered, such as adverse consequences for rural communities and the environment.

Additional means to address the water demands of the West include surface and ground water storage, desalination, water reuse, weather modification, ground water recharge and conjunctive use. However, at the federal level, the operation and maintenance budgets of the two largest federal water supply agencies, the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation, now exceed their construction budgets. Their operation and maintenance backlog, as well as their rehabilitation and replacement needs, continues to grow. The Environmental Protection Agency’s funding for the Clean Water Act and Safe Drinking Water Act State Revolving Loan Funds is declining while needs grow.

Resources, both budgetary and workforce, to accomplish the recommendations included in this report will need to come from a variety of sources. Partnerships between local, state and federal entities are likely to become more commonplace and a necessity as federal budgets become more limited.

¹ *Less Snow, Less Water: Climate Disruption in the West*, The Rocky Mountain Climate Organization, September 2005.

“Resources, both budgetary and workforce, to accomplish the recommendations included in this report will need to come from a variety of sources.”

Analyses and Recommendations

1. Water Policy and Growth

Analysis

Water scarcity (relative to demand) is reality in much of the West, but reservoir storage, transbasin diversions, ground water development, water right transfers, conservation, and other measures have allowed growth to continue. However, in some areas for the first time legal and physical limits are appearing on the planning horizon. In the future, we may not be able to sustain unlimited growth and still maintain our current quality of life. Difficult political choices will be necessary regarding future economic and environmental uses of water and the best way to encourage the orderly transition to a new equilibrium. Among other things, these new realities require an evaluation of the relationship between water policies and growth.

While growth management remains primarily a local prerogative, states are increasingly exercising their influence. States have the primary responsibility for water allocation and management. They have jurisdiction to sanction both new appropriations and transfers of existing uses. They also have the primary responsibility for protecting water quality, and the pivotal role in the integration of water quantity allocation and water quality protection. As a result, states can play a critical role relating to growth in the West where water is a scarce resource and competing demands vie for rights to its use. In other words, the implications of states' decisions in this arena have direct implications for growth.

It is obvious that changing demographics and values placed on various water uses is transforming the

future of water management. Western states are experiencing large population percentage changes. According to the 2000 Census Bureau statistics, population growth varied significantly by region in the 1990s, with the highest rates in the West (19.7 percent). The West increased by 10.4 million to reach 63.2 million people. Because of differences in growth rates, the regional shares of the total population have shifted considerably in recent decades. Between 1950 and 2000, the percentage of the Nation's population living in the West increased from 13.3 to 22.5 percent. More recently, from 2004 to 2005, five of the six fastest growing states were: Arizona (3.5%); Nevada (3.5%); Idaho (2.4%); Utah (2.0%) and Texas (1.7%). Other western states are not far behind B Colorado (1.4%), Oregon (1.4%), New Mexico (1.3%) and Washington (1.3%). Notably, many of these states are also the driest states in the Nation!

Water continues to move from farms to cities, with expected and sometimes unexpected results. The social, economic and environmental results are important and sometimes are not well understood. Third party and other direct impacts of water transfers, water conservation, declining rural economies based on irrigation, dwindling surface and ground water supplies and other water use related changes, as well as growing instream water demands for environmental and recreational uses, are all redefining our quality of life in the West. Further, as municipal and industrial water use increase relative to older agricultural uses, the demand becomes more inelastic. A farmer can forgo a crop year when water supplies are tight; a municipal water

“In the future, we may not be able to sustain unlimited growth and still maintain our current quality of life. Difficult political choices will be necessary regarding future economic and environmental uses of water and the best way to encourage the orderly transition to a new equilibrium.”

system cannot cut back or shut down without serious consequences to the community served.

Growth is also occurring in agricultural areas where key water resources are often fragile and scarce. Natural amenities of the West are being subdivided and displaced. Ironically, these natural elements are key factors attracting the very population movement which is destroying them. All this is raising concerns related to sustainability.

Decisions about where and how to grow are rarely influenced by the water policy or the availability of water. Nevertheless, where a state undertakes to develop and implement a comprehensive growth-management strategy, water resources policy should be a component of that strategy. Indeed, many believe the future of growth-management efforts will revolve around natural resource constraints. State efforts should not attempt to preempt local prerogatives, but rather endeavor to inform, guide, and assist local efforts. In this context, the follow steps should be taken.

Recommendations:

1.A. To foster sustainable growth policies, states should identify water requirements needed for future growth, and develop integrated growth and water supply impact scenarios that can be presented to local decision makers.

The relationship between population growth and water resources is often significant, but too often not



well understood. To encourage sustainable growth policies and plans, states should identify the water demands and impacts associated with future growth. Additionally, states should develop integrated growth and water resource scenarios so that the consequences of various growth scenarios can be evaluated for both the near and long term. Further, guidance as to appropriate methods to manage growth through access to water supplies should be provided. Such guidance should be sufficiently flexible, within the framework of relevant constitutional restraints, to give appropriate discretion to locally elected officials.

1.B. States should facilitate collaborative watershed-focused planning that balances desirable growth and protection of the natural environment that depends on surface and ground water quantity and quality.

There is a growing consensus that, as watersheds have emerged as the unit for management and action, they have become a rational framework for undertaking integrated resource management.² Seen in this context, addressing growth management concerns should be within the range of issues that local stakeholders involved in watershed planning may wish to

² It is recognized that other sub-state planning units such as “regions” are being used in some states.

“State efforts should not attempt to preempt local prerogatives, but rather endeavor to inform, guide, and assist local efforts.”

pursue. Thus, state growth management strategies should recognize and take full advantage of the potential of watershed efforts to deal effectively with issues associated with growth.

1.C. In reviewing applications for new water uses, transfers and changes in use, including in-stream flows, states should consider local, tribal and watershed plans and decisions regarding growth management.

Since the state's role is to encourage and assist local communities regarding growth management, then decisions reached by local, tribal, and watershed communities should be given considerable weight in determining whether new applications to appropriate water, or to transfer existing rights, including for instream flow purposes, are in the public interest. Providing explicit authority to water officials to do so, when considering public interest needs and within the frame-

work of a comprehensive growth management strategy, would be an appropriate step in this direction.

1.D. States and local governments should consider the impacts of continued growth that relies on transfers from agriculture and rural areas, and identify feasible alternatives to those transfers.

There is understandable support for the notion of allowing markets to operate to facilitate transfers from agricultural to municipal and urban use as a means to accommodate the needs of a growing population. While such transfers have much to commend them, third party impacts should be taken into account, including adverse effects on rural communities and environmental values. Alternatives that could reasonably avoid such adverse impacts should be identified.



2. State Needs and Strategies to Meet Future Demands

Analysis

The availability of water of suitable quality clearly affects sustained growth and prosperity in western states. Virtually every western state has some type of state water plan that projects population growth and anticipated increases in water use for various purposes. Most include information on existing uses and gaps in projected supply and demand over different periods of time. Similarly, various state, federal and local agencies have developed extensive recommendations for meeting future water needs. Together, these studies provide a snapshot of current conditions and possible strategies to help meet the future water needs of the West.

In establishing and implementing water planning, a new paradigm has emerged which moves away from a top down approach to identifying problems, projecting needs and suggesting projects and programs towards a bottom up approach that relies on local stakeholders, often on a watershed level, coming together to define and bring to state and federal governments their perceived needs and most likely solutions to their water supply problems. These can then be compiled and reconciled with adjacent communities' needs in the form of a general state water plan. Federal agencies' water supply policies, programs and projects need to take into account these planning efforts and ensure their mission related activities are as consistent as possible.

The need for additional supplies to meet growing and changing water supply demands for both off-stream and instream demands has been identified by

virtually every western state as a priority. After several years of consecutive drought, it should not be surprising that in the arid West water supply continues to be of vital concern. Fresh water supplies are limited and many if not most surface water and ground water sources are fully appropriated or otherwise reserved for myriad uses. Environmental and recreational uses are growing and need to be accommodated by water managers. Energy demands and related water resource needs are significant concerns. As the United States expands its domestic energy production, the interaction between energy development and water use in the western states cannot be overlooked. The issues range from how to deal with water produced from extraction processes to meeting the cooling water demands of coal and natural gas fired power plants. Agriculture accounts for most of the diversions from rivers and streams in the West. Hydropower is also very important in water resources development and financing. Water is a unique public and private resource or commodity that can be bought and sold, used and reused. However, there are limits, and conflicts among these competing uses and users are increasing.

While states underscore the need generally for additional supplies, many states emphasize in particular the need to provide adequate supplies to rural communities. In some areas of the West, rural residents must still haul their own drinking water, or the water quality is poor. Drinking water systems are expensive and the costs often exceed rural water users' ability to pay.

Western states recognize the difficulty of constructing new large water projects. Instead, projects

**“Federal agencies’ water supply policies, programs
and projects need to take into account these
[watershed] planning efforts and ensure their mission
related activities are as consistent as possible.”**

for the future are more likely to be more innovative, environmentally sensitive, and smaller in scale. Further, before new water supply projects are built, opportunities to conserve water in ways that will stretch existing supplies will be fully examined, and to the extent practical, implemented.

Water conservation measures and water markets can be valuable tools in achieving a new equilibrium between supply and demand. Win-win scenarios are definitely possible, but they may be difficult to achieve when third-party impacts are considered. Thus, water transfers and water conservation measures must be evaluated on a case-by-case basis.

Such measures should accompany efforts to augment existing water supplies in the West. To enhance opportunities to meet future water challenges in a sustainable way, existing and new technologies to increase supplies should be further evaluated.

There is a need for more and better water information, specifically data on water use, efficiencies and water availability, to facilitate decision making. While there exists a substantial amount of data on streamflows, much of which is now available on a real-time basis, there is less data and less reliable information related to water quality and ground water and rural water supplies. Further, some of the vital water information management systems that are now available are threatened by reductions in federal funding and lack of necessary maintenance.



Specifically, western states and water managers depend on:

- USDA's Snow Survey and Water Supply Forecasting Program under the Natural Resources Conservation Service (NRCS), National Water and Climate Center, which operates Snow Telemetry (SNOTEL) sites and the Soil and Climate Analysis Network (SCAN) directly monitoring soil moisture;
- The U.S. Geological Survey's Cooperative Water Program (CWP), National Streamflow Information Program (NSIP), National Water Information System (NWIS), National Water Quality Assessment Program (NAWQA); and USGS ground water data base;
- Remote sensing capabilities of the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA), especially the USGS and NASA's Landsat thermal sensing and other imaging capabilities;

**“Before new water supply projects are built,
opportunities to conserve water in ways that will
stretch existing supplies will be fully examined, and
to the extent practical, implemented.”**

- The National Weather Service's National Environmental Real-Time Observation Network (NERON) and cooperative weather observer network;
- The U.S. Forest Service's Remote Automated Weather Stations (RAWS) network; and other sources of data.

Additionally, there needs to be better integration of the data that is being collected. The National Integrated Drought Information System (NIDIS) is a good model for such integration.

Recommendations:

2.A. Federal and state agencies should increase support and funding for state and federal basic water data gathering activities that can serve as the basis for sound decision making. Gaps in data should be identified. Remote sensing capabilities, including Landsat thermal data, and developing technologies, such as the use of Doppler radar to measure streamflows, are important tools that need to be retained and fostered. Further, state and federal agencies must find ways to reduce costs related to gathering and disseminating real-time water data/information, including the acceptance of more in-kind contributions from cooperators. Moreover, new and stable sources of funding are needed. User-pay opportunities or voluntary non-governmental organization contributions should be explored, while recognizing the general bene-

fits provided by basic data gathering efforts, which make it an appropriate governmental activity.

With respect to USGS streamgaging activities, the Cooperative Water Program continually faces unfunded federal salary cost increases, which have consistently led to the loss of important streamgages and related water resources data. Arguably, this can be linked to a loss or an increased risk to life and property related to extreme events such as flooding and drought. Non-USGS cooperators pay some two-thirds of the cost of the Coop program. The USGS National Streamflow Information Program and NRCS snow survey and water supply forecasting capabilities are a very critical component of water management that face similar funding problems. Moreover, the potential future loss of current Landsat thermal band capabilities is a concern, as more and more states rely on this data to determine evapotranspiration, as well as measure and monitor agricultural water use and evaluate "what if" scenarios resulting from climate change. Ground water monitoring is of growing importance, as is data on water quality. Both lag far behind surface water availability data. Rural areas also lack adequate water information for decision making.

2.B. Use the research programs at western state universities to focus research on practical applications of promising new technologies, and identify areas where the increased use of technology (e.g. remote sensing, Supervisory Control and Data Acquisition, new water and wastewater treatment technologies, energy



and water efficiency) should be promoted to enable more efficient and cost effective operations.

Funding the research, development and application of new water resources-related technologies and fostering technology transfer opportunities are important to more efficient and effective water resources management. Existing federal and state research dollars should be carefully and collaboratively allocated to focus limited resources on priority needs.

2.C. The WGA and WSWC strongly support enactment of the National Integrated Drought Information System Act of 2006 (H.R. 5136 and S. 2751) to make permanent a National Integrated Drought Information System (NIDIS), as well as broader national drought preparedness legislation. State and federal agencies should consider steps to pursue creation of a broader integrated water resources information system, which would serve as a basis for water-related planning, preparedness and response activities.

Western states have suffered and continue to struggle with the impacts of a multiyear drought. Much of the potential for drought mitigation requires extensive planning and preparation long before impacts are realized. There is no national drought policy, nor a one-stop shop for information to aid decisionmakers. Moreover, drought is but one hydrologic extreme, with flood prediction, mitigation monitoring and control equally important.

2.D. The WSWC should encourage states to develop and implement strong state water plans and compile a state-by-state and West-wide summary of existing water uses, water plans and planning efforts, current ground and surface water supplies, and anticipated future demands, then identify and evaluate trends and common themes. The summaries should address both consumptive and non-consumptive uses and demands. This summary should include both existing water supply and demand-management policies and programs, as well as planned or potential activities. The focus should be on a grassroots, watershed approach to identifying water problems and potential solutions from the ground up, integrating these efforts into individual state plans. Similarly, regional or multi-state and multiple river basin strategic plans should be comprised of these building blocks.

Virtually every western state has past and present water plans and many employ ongoing water planning efforts. These vary widely in detail, style and size, but should form the basis for any future efforts to fashion a western or national water policy or plan, as some have suggested. An evaluation of common components may lead to the broader application of successful practices. State water plans may include management responses which: (1) improve demand management and conservation strategies; (2) utilize integrated water resource management as an effective method for as-

“An evaluation of common components [of state water plans] may lead to the broader application of successful practices.”

sessing adaptation options and their implications in the context of an evolving regulatory environment with its competing demands; (3) develop new surface or groundwater storage capacity, including new reservoirs and expansion of existing reservoirs;³ (4) enhance ways to manage all available water supplies, including groundwater, surface water, and effluent, in a sustainable manner; (5) increase ability to shift water within and between sectors (including agriculture to urban), while mitigating any associated impacts in the basin of origin;⁴ (6) reuse municipal wastewater, improve management of urban storm water runoff, and promote collection of rainwater for local use to enhance urban water supplies to the extent allowed by state water laws; (7) increase efforts to restore and maintain watersheds to improve water cycle functioning (which would include invasive vegetation removal, forest management, etc.) as an integrated strategy for managing water quality and quantity; (8) consider the energy-water nexus as a way for both increasing water use efficiency and minimizing emissions of greenhouse gases (from related energy use); and (9) develop innovative water augmentation technologies such as weather modification, desalination, and chloride control.

2.E. The WSWC should explore the relative merits and obstacles related to various programs and technologies and legal and institutional means to augment existing water supplies,

including water conservation and water use efficiency, demand management (including pricing structures), water and water rights transfers, water banking, water reuse, revolving fallowing of agricultural lands, watershed protection and management, surface and ground water storage alternatives, desalination, and weather modification. Based on the findings, the WSWC should initiate discussions on an interstate level to optimize appropriate opportunities to ensure that adequate supplies of suitable quality are available to sustain the growth and prosperity of western states.

The above is the charge given to the WSWC by western governors in 1965, when water problems that are now growing acute were first addressed. The Council was created as a forum to consider future water problems, and continues to serve in an advisory capacity. Many western water challenges have already reached or are reaching critical levels that require a greater degree of regional collaboration in addressing westwide issues related to growth and water supply.

2.F. The WSWC should hold a workshop in collaboration with relevant federal agencies and other stakeholders to evaluate federal and state watershed programs and strategies, and examine in particular the commitment of

³ Availability of acceptable sites for new dams, as well as the economic, environmental, and social costs associated with reservoir construction can be limiting factors. Further, reservoirs may be vulnerable to increased evaporation as climate warms. Aquifer storage is another storage option, however, is very energy intensive when treatment or injection wells are required; in areas where expansion of supply infrastructure is infeasible, demand management is a particularly sensible strategy to meet future water needs.

⁴ Water transfer mechanisms include permanent transfers, dry-year contracts, spot markets, and water banking.



resources to the watershed approach and the level of coordination among federal agencies and between federal and state agencies, Tribes, conservation districts, municipalities, NGOs, etc.

Forestry, range, agricultural and other public/private land management practices have significant impacts on water supply and water quality. Further, many if not most water resources management problems are best addressed first at the local watershed level.

Many effective watershed based planning groups are in place across the West. These groups should be nurtured and encouraged to, where applicable, integrate all components of land and water management planning. Watershed protection and management practices are therefore a marriage of water and land management. Farm Bill 2007 and funding for USDA's Conservation Reserve Program, Conservation Reserve Enhancement Program, Environmental Quality Incentives Program, and Surface and Ground Water Conservation Program are very important in furthering western state water supply and water quality objectives.



“Much of our infrastructure is inadequate due to population growth, water quality requirements and safety threats not anticipated at the time of its design and construction.”

3. Water Infrastructure Needs and Promising Strategies for Meeting Them

Analysis

The future growth and prosperity of the West depends on our aging water-related infrastructure: dams and reservoirs; levees; pipelines; pumping plants; hydroelectric power plants; aqueducts, canals, laterals, and drains; water and wastewater treatment plants; stormwater management works and other facilities to control and manage the water that supports our present way of life. Much of this infrastructure is being used beyond its engineered design life, and some parts suffer from the impacts of deferred maintenance. Much of the infrastructure was put into place prior to enactment of modern safety, security and environmental requirements, and upgrades to these facilities or changes in their operation may be needed to conform to appropriate natural resources stewardship principles and meet new demands related to population growth, rural development, environmental restoration, changing societal values and national security threats.

Much of our infrastructure is inadequate due to population growth, water quality requirements and safety threats not anticipated at the time of its design and construction. Redesigning, rebuilding and re-operating public infrastructure will be costly and challenging, particularly given the fact that most of it was built by many different agencies at all levels of government with various charges. It is essential that agencies work cooperatively and “smarter” to maintain that infrastructure and to expand it to meet present and future needs. The consequences of failing to maintain our present investment in infrastructure and address our future water needs are unacceptable. Public health

and safety, as well as jobs, economies and natural resources would be put at risk. Without the resiliency provided by our present infrastructure, we would be at the mercy of natural disasters.

Furthermore, as a society, we have also defined basic human rights to include access to clean and safe drinking water, wastewater treatment, flood and drought protection, and other water-related public goods and services. Providing these in an efficient and affordable manner can be challenging, especially in rural and economically disadvantaged areas, but the failure to do so can lead to greater public health risks, economic stagnation, environmental degradation, etc. Also, individuals left to meet their own needs through piecemeal private development, such as domestic water wells, septic systems, private dams and levees and other works, have no incentive to consider third-party impacts.

Underfunding needed capital improvements is a chronic problem that States and local governments will have to creatively address, finding ways to finance their water-related infrastructure needs, with or without federal assistance. Meeting our current and future infrastructure needs will require a long-term public and private financial commitment at all levels, and public education regarding the value of water as both a public and private good, the value of water-related services, appropriate water pricing, and the need for capital budgeting. In some cases, consolidation of present services may allow communities to share capital resources and reduce operation and maintenance costs associated with water related infrastructure. Further,

“Underfunding needed capital improvements is a chronic problem that States and local governments will have to creatively address, finding ways to finance their water-related infrastructure needs, with or without federal assistance.”

changes may need to be made in the ways we design, bid, build and finance projects at all levels of government.

At the federal level, the operation and maintenance budgets of the two largest federal water supply agencies, the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation, now exceed their construction budgets. Their operation and maintenance backlog, as well as their rehabilitation and replacement wish list, continues to grow. The Environmental Protection Agency's (EPA) funding for the Clean Water Act and Safe Drinking Water Act State Revolving Loan Funds (SRFs) is drastically declining while needs continue to grow. Various agencies and organizations have published reports rating the condition of our infrastructure, identifying future needs and highlighting looming gaps in current federal funding. Increasing public support and a change in national priorities will be needed to secure sufficient federal money to address pressing public health and safety needs and meet associated federal requirements and obligations.

Further, meeting future water-related public health and safety needs in concert with various federal, state, tribal and local interests will require expanding current partnerships and building new partnerships. Increased focus must be placed on inter-regional and interstate planning and cooperation to maximize the beneficial use of our limited water and financial resources. This

may eventually require reauthorization of some federal projects to include new project purposes, while protecting traditional uses. Likewise, we must fully explore opportunities to apply different management strategies and new and innovative uses of technology to solve existing infrastructure problems and improve future facility operations.

While funding and financing future infrastructure needs will be challenging under our current budget constraints at all levels of government, there remains a significant federal role in providing assistance when needs exceed state and local resources; where Tribal, environmental, or federal public health and safety requirements are involved; or where national security is threatened. At the same time, States and local agencies must plan how they will meet their own respective obligations for providing the necessary infrastructure for a sustainable future.

Recommendations:

3.A. The WGA should support continuing stable federal State Revolving Fund appropriations at a level of \$1.35 billion for the Clean Water SRF and \$850 million for the Drinking Water SRF, increased annually by a construction inflation index. Further, states need flexibility and fewer restrictions in addressing their priorities.

Past and present federal budget requests that propose significant reductions in SRF funding are inconsistent with the need to close the gap between projected future national clean water infrastructure needs



and current levels of spending. Further, to the extent federal law has defined a human right to a certain level of treatment for drinking water and wastewater nationwide, the federal government has an obligation to help meet those needs.

3.B. The WGA should urge Congress to increase appropriations from annual receipts (now over \$1 billion) accruing to the Reclamation Fund, for authorized Bureau of Reclamation projects and purposes, to help meet western water supply needs, especially for rural communities, to maintain and replace past projects, and to build new capacity necessary to meet demands related to growth and environmental protection.

The Reclamation Act of 1902 provided for water development in the seventeen western states and created the Reclamation Fund as a source of money to pay for related costs. Receipts accrue from project water and power sales, federal mineral leasing revenues, miscellaneous land sales, and other sources. For decades, revenues were insufficient to pay for construction and program costs, but more recently receipts have exceeded expenditures, (which must be appropriated by the Congress). The estimated unobligated balance in the Reclamation Fund for FY2006 is just under \$6 billion, and by the end of FY2007 it is projected to be over \$7.2 billion. These revenues from western resources are authorized for Reclamation purposes, and should be so spent. However, discretionary budget spending limits on appropriations in effect

allow the federal government to use these revenues for other purposes.

3.C. The WGA should ask Congress to enact S. 895 (“The Rural Water Supply Act of 2005”) to assess rural water supply needs and authorize federal loan guarantees under Title II to better enable non-federal project sponsors to obtain private financing for reimbursable extraordinary operation and maintenance, rehabilitation and replacement costs.

According to EPA’s 1999 Needs Assessment, approximately 45,000 of the Nation’s 55,000 community water systems serve fewer than 3,300 people. Regardless of their size and configuration, small water systems face many unique challenges in providing safe drinking water to consumers. The substantial capital investments required to rehabilitate, upgrade, or install infrastructure represent one such challenge.

Federal loan guarantee authority should be provided to allow the Bureau of Reclamation to guarantee the repayment of state and local bonds for the rehabilitation, betterment, and construction of projects. At present, given federal ownership, non-federal project sponsors – many with project operation and maintenance responsibilities – lack the collateral to secure private financing to meet their repayment obligations for needed rehabilitation and betterment work or extraordinary maintenance. Title II’s federal loan guarantees would help remedy this problem.

“To the extent federal law has defined a human right to a certain level of treatment for drinking water and wastewater nationwide, the federal government has an obligation to help meet those needs.”

3.D. Congress needs to enact new authority for the U.S. Army Corps of Engineers, the Water Resources Development Act (WRDA), which includes many projects important to the West, and carefully consider planning and prioritization changes to encourage achievement of the maximum regional and national benefits.

This legislation authorizes hundreds of navigation improvement, flood protection and environmental restoration projects, project modifications and investigations by the U.S. Army Corps of Engineers. It has been five years since the last omnibus Corps authorization bill was passed.

3.E. The WGA should encourage all levels of government to maximize opportunities for a coordinated regional and/or watershed approach under state and federal water pollution control laws to source water protection, stormwater management and non-point source pollution.

A holistic watershed or problemsheds approach to water problems is practiced with increasing success at different levels of government. It is gaining growing acceptance as an effective means to find solutions and reduce costs. Federal EPA and USDA spending on related programs is important to meet both water supply and water pollution control goals.

3.F. The WSWC should identify the beneficiaries of our existing water infrastructure and op-

portunities to expand the range of interests to build a coalition to support necessary funding, as well as evaluate any opportunities to consolidate delivery of water-related services.

The rehabilitation, replacement and reconstruction of much of our current water-related infrastructure, including watershed and dam rehabilitation that will take place over the next few decades present a continuing opportunity to both reevaluate and expand the range of beneficiaries and project purposes to be served in the future. Win-win scenarios may emerge as conservation, legal and financing mechanisms allow water to move between users to more uses in return for cost sharing assistance in maintaining existing infrastructure (and the associated benefits) while accommodating new uses and their beneficiaries.

3.G. The WSWC should identify successful water resources-related infrastructure and natural resources management partnerships and evaluate organizational opportunities for public/private, federal/state/local, agency/agency, agricultural/urban and other effective partnerships.

Past partnerships should be evaluated to identify transferable programs, policies and operating agreements that will allow more interests to participate effectively in identifying and meeting our future water needs. Innovative organizational opportunities and collaborative mechanisms may need to be created.





3.H. The states should develop coordinated public education and other outreach programs to help survey and communicate the need for adequate public infrastructure investments at all levels of government, highlight the consequences of a failure to address our present problems, and stress the need to price water-related goods and services so as to allow for necessary capital budgeting for project rehabilitation and replacement.

A consistent, long-term public education and outreach program is needed to help people understand future challenges, our choices, and the consequences. For many reasons water often is undervalued and markets and other price-setting mechanisms are sometimes skewed in such a manner that appropriate future investments in water are discouraged.

3.I. The WSWC should organize a series of ongoing biennial symposia designed to: (a) bring stakeholders together to try and find ways to meet our growing western water, wastewater, watershed protection and restoration, and public safety-related infrastructure funding needs; (b) find ways to quantify, evaluate and prioritize funding those needs; and (c) highlight the benefits of integrated watershed, riverbasin, regional and interstate planning and management.

The Council's successful biennial symposia on Indian Water Rights Negotiations, with WGA's support, is a model for bringing together various interests on a continuing basis to help develop partnerships, while searching for ways to design and prioritize solutions to our future water and related infrastructure challenges.

“A consistent, long-term public education and outreach program is needed to help people understand future challenges, our choices, and the consequences.”

4. Resolution of Indian Water Rights

Analysis

For the past two decades, the Western Governors have strongly and consistently supported the negotiated settlement of Indian land and water disputes. Their most recent policy statement reads: “The Western Governors continue to support negotiated rather than litigated settlements of Indian water rights disputes. The federal government has major responsibility for ensuring successful conclusion of the process, including providing information and technical assistance to the tribes, providing federal negotiating teams to represent one federal voice and further the process, seeking approval of agreements, fully funding the federal share and insuring that the settlements are implemented.”

The Western States’ sovereign counterparts, the Indian nations claiming water rights, have also supported negotiated settlement of these difficult legal issues. The National Congress of American Indians (NCAI) “believes that the settlement of tribal water and land claims is one of the most important aspects of the United States’ first obligations to Indians and is of vital importance to the country as a whole.”

It is critical that Western States and tribes take stock of the settlement process, what remains to be accomplished and whether the current federal policy – and more importantly, practice – is effective in moving the remaining settlements forward.

Over the past 25 years, more than 21 settlements of Indian land and water rights have been reached in the western states and approved by Congress. The

settlements have provided practical solutions, infrastructure and funding, while saving millions of dollars of private and public monies through avoidance of prolonged and costly litigation, and have fostered conservation and sound water management practices and established the basis for cooperative partnerships between Indian and non-Indian communities.

This successful process is currently threatened by federal fiscal and legal policies. While the Department of Interior continues to espouse settlement, it is taking an increasingly narrow view of its trust responsibilities to tribes and its willingness to fund settlements that benefit non-Indians as well. In coordination with the Office of Management and Budget (OMB) and the Department of Justice (DOJ), it has been asserting that its contribution to settlements should be no more than its calculable legal exposure and that even this can be narrowly drawn so that often its financial obligation is little or none.

It has long been the accepted premise that meeting the cost of Indian water and infrastructure in Indian water rights settlements is the trust responsibility of the federal government. At the same time, it must be acknowledged that an appropriate share of these costs of settlement, which correspond to non-Indian water and infrastructure benefits, increasingly a component of Indian water rights settlements, should be borne by the states. The states and the federal government must work together to jointly design and fund settlement projects that provide the greatest benefit for Indian and non-Indian water users alike in those situa-



Artist's rendition of completion of Ridges Basin Dam, being built pursuant to implementation of the Colorado Ute Settlement Act of 2000.

tions where the interests are inextricably combined by practical reality.

Funding for tribes' attorneys and technical experts has been so severely reduced over the past few years that it is making it difficult for tribes to meaningfully participate in the process. The Bureau of Indian Affairs (BIA) has also recently announced further cuts to these vital services to pay for \$7 million in attorneys' fees for the Cobell litigation. To deny the tribes the funds necessary to ensure competent legal and hydrologic expertise is tantamount to denying them the right to defend a basic component of their physical and cultural survival.

The Western States and Tribes have continued to work hard to conclude water settlements but can no longer continue to do so in a virtual vacuum of meaningful federal participation and financial commitment. Settlements in Montana and New Mexico languish because the Interior Department has pulled back on its funding commitments. The impending crisis may not be as dramatic as a hurricane, but the long-term impacts are no less real. Failure to conclude meaningful water right settlements will undermine the Western States' planning for sustainable growth and disrupt their ability to meet long-term water demands. Litigation could result in substantial disruption of non-Indian uses. Further, if tribes are forced to litigate to protect their water rights, their eventual quantification may be meaningless without federal dollars to develop their water supplies for their homelands.

It must also be observed that unlike responding to random natural catastrophes, the national obligation of

Indian water rights settlements is a finite list of pending problems, one that grows shorter with each settlement. It is a national obligation that can be met in full, once and for all, by concluding settlements with those tribes and pueblos whose rights have not yet been adjudicated. But, while the number of pending settlements is set, the cost of implementing them will continue to rise - meaning that postponing this duty only increases its cost to the nation, as it perpetuates the hardship to Indian people unable to enjoy the full use of their water rights and the inability of non-Indian governments to plan for water use in the absence of firm data on respective use entitlements.

Recommendations:

4.A. Reaffirm the resolution of the Western Governors' Association on settlement of Indian water right claims.

The Western States and Tribes must renew their commitment to this most important process.

4.B. Building on the successes of the past two decades, the WGA should engage Congress in an important discussion of what federal policy should be and how these settlements can be funded.

Whether through oversight hearings or high-level policy meetings, the message should be clear: there is an impending crisis in western water if this vital settlement process is allowed to languish. The costs of failure for the states and tribes will be too high and op-

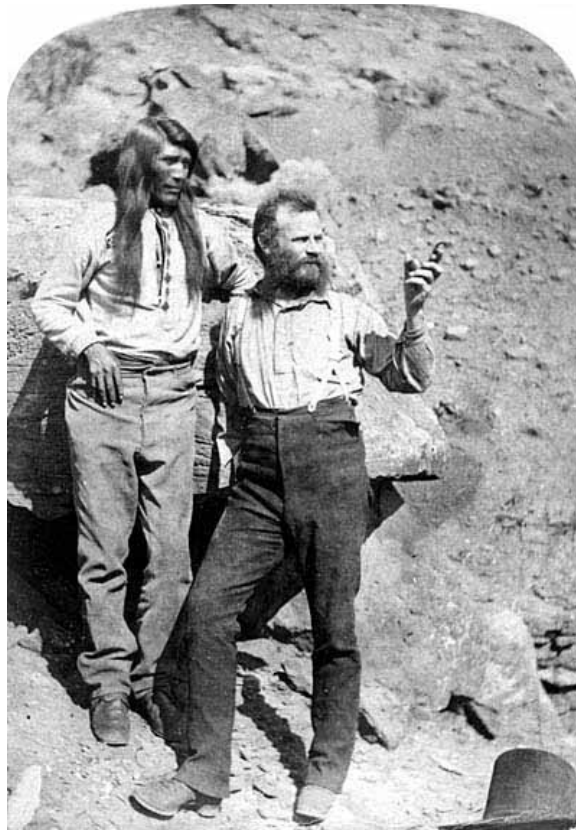
“Failure to conclude meaningful water right settlements will undermine the Western States' planning for sustainable growth and disrupt their ability to meet long-term water demands. Further, if tribes are forced to litigate to protect their water rights, their eventual quantification may be meaningless without federal dollars to develop their water supplies for their homelands.”

portunities lost will be gone forever if we do not act cooperatively now.

4.C. The WGA should appeal directly to the new Secretary of Interior to begin a meaningful dialog on the Departments' trust and pro-

grammatic responsibilities related to Indian water right settlements.

Discussions with the new Secretary should also include a review of the benefits of settlements to non-Indian communities throughout the West.



Tau-gu, Chief of the Paiutes, overlooking the Virgin River with John Wesley Powell, Circa 1873, (Photo from the Grand Canyon National Park Museum Collection , courtesy of the National Park Service.)

5. Preparations for Climate Change Impacts

Analysis

During the past century, global surface temperatures have reportedly increased at a rate near 1.1°F. The rate of temperature increase has been three times larger since 1976, with some of the largest temperature increases occurring in the high latitudes. Average temperatures in the West have reportedly risen 2-5°F during the 20th century—greater than in other regions of the contiguous United States. As the West has warmed, snowfall and snowpack have diminished in major portions of the West, and an increasing fraction of winter precipitation is falling as rain, rather than snow. Additionally, Western snowpacks are melting earlier with peak runoff coming 10 to 30 days earlier in many cases. The region has generally had increases in precipitation, with significant increases in some areas. However, other areas have become drier and experienced more droughts. Wildfire in the West has increased, particularly in the last two decades. Of the major mountain ranges in the West—the Cascades, the Sierra Nevada, and the Rockies—trends are more pronounced in the Cascades and the Sierra Nevada and less so in the Central and Northern Rockies, due in large part to the temperatures at the affected snowline altitudes in the Sierra Nevada and Cascades being closer to 32°F to begin with.

Although the research on projections for climate change in the future does not have nearly the same degree of certainty as the observed climate change to date, it does suggest that rising global surface temperatures and associated climate changes may continue over the next several decades and beyond. According to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), global surface temperatures are projected to rise by 3-10°F by

the end of the 21st Century. Precipitation predictions show a greater range of possibilities, thus they are considered more uncertain. The American West could heat up more than the worldwide average, with regional climate models suggesting temperature increases in the West could be 4-13°F. Projected impacts that could accompany this warming in the West include the following:

- **Smaller snowpacks**—winter precipitation could fall as rain instead of snow; periods of snowpack accumulation could be shorter; and snowpacks could be smaller, which has serious implications for reservoir storage.
- **Earlier snowmelt**—warming earlier in the year could melt snowpacks sooner further increasing the length of time between peak water flows and the summertime peak water needs of cities, farmers, utilities, etc. requiring more reservoir storage to capture the earlier runoff.
- **Flood-control releases**—water managers may be forced to make changes in reservoir operations and rule curves.
- **More extreme flood events**—extreme events could be more common causing more frequent and larger floods. In some cases, existing flood control ‘rule curves’ should be reformulated.
- **Receding glaciers**—some have suggested Glacier National Park could be void of glaciers by 2030 as a result of warming.
- **More evaporation and dryness**—higher temperatures could increase evaporation from streams and reservoirs, soil dryness, and the needs of crops and other plants for supplemental water.
- **Less groundwater**—less availability of surface water supplies may lead to increased pumping from groundwater aquifers further stressing groundwater supplies and hydraulically-connected surface water supplies.

“The American West could heat up more than the worldwide average, with regional climate models suggesting temperature increases in the West could be 4-13°F.”

- **More droughts**—more intense, frequent, and longer-lasting droughts could result.

- **More wildfires**—there could be an increase in number and severity of wildfires and an extended wild-fire season.

- **Water quality challenges**—diminished stream-flows during drought could result in less dilution of discharges; sediment loading from storm events that follow wildfires, saltwater intrusion along the coast resulting from rising sea levels, and warmer lake temperatures leading to algae blooms could follow.

- **Hydroelectric generation**—climate changes that alter overall water availability and timing could reduce the productivity of hydropower facilities; changes in the timing of hydroelectric generation can affect the value of the energy produced.

- **Water-borne shipping**—decreases in river flows could reduce the periods when navigation is possible; increase transportation costs; and increase conflicts over water allocated for other purposes.

- **Ecosystems**—natural ecosystems have limited ability to adapt or cope with climate changes that occur over a relatively short time frame, which could lead to irreversible impacts, such as additional species extinctions.

- **Recreation impacts**—due to lower lake and stream flow levels, recreation opportunities and economies could be significantly reduced.

Notwithstanding the seriousness of these potential impacts, it is nevertheless not currently possible to predict if and how they will affect a particular area within the region at any particular time, given the existence of a number of variables. According to the National Assessment Synthesis Team, which is a part of the US Global Change Research Program, climate is not static. Assumptions about the probability, frequency, and magnitude of extreme events should be considered accordingly.

Nonetheless, it must be recognized that there is already substantial stress on the water sector today even in the absence of climate change. There are many watersheds that are already over-appropriated, and new stresses are coming from population growth, land use changes, and water needs for instream uses, including those necessary to meet federal laws like the Endangered Species Act and the Clean Water Act. In some areas, the new demands may cause major shifts in water supply and water rights. Climate change may pose additional stresses and could result in thresholds being reached earlier than currently anticipated.

Because many of the impacts of climate change are not predictable, more flexible institutional arrangements are needed in order to adapt to changing conditions including not only climate change, but other existing stresses as well. Supply-side options are more familiar to most water managers, but demand-side options are becoming increasingly prevalent.

Recommendations:

While recognizing the uncertainties inherent in climate prediction, efforts should be made to focus on vulnerabilities and building increased resiliency to climatic extremes.

5.A. Data Collection

The federal agencies must continue and expand funding for data collection networks and activities necessary for monitoring, assessing, and predicting future water supplies as addressed earlier herein by the Water Needs and Strategies group recommendation (2A).

5.B. Improved Prediction, Modeling, and Impact Assessment



Climate change could result in an extended fire season.

The Western Governors should urge Congress and the Administration through the Climate Change Science Program (CCSP) to fund research for improving the predictive capabilities for climate change, and assessment and mitigation of its impacts. Additionally, given the complex climatology in the West, it is important that climate change modeling be conducted at a much finer resolution, e.g. watersheds and subwatersheds. It is also important that the federal government implement research funding recommendations associated with Goals 4 and 5 of the 2003 CCSP Strategic Plan, including the area of increased partnerships with existing user support institutions, such as state climatologists, regional climate centers, agricultural extension services, resource management agencies, and state and local governments.

5.C. State Planning

1) The Governor of each state should direct their state climatologist, relevant water and environmental agencies, and universities to assess historical, current, and projected climate trends for their particular state and relate these to potential changes in water supply and water quality, in order to prepare for and mitigate the impacts from climate change and climate variability. Such assessments should include an inventory of data sources available for each state, with analysis appropriate to watershed-level management. The Governors should seek necessary funding to support these activities.

2) States should maintain various water-related plans, including state water plans, watershed plans, state drought plans, reservoir management plans, flood plans, etc. These plans should be expanded or enhanced accordingly to include cli-

mate change scenarios. Particular emphasis should be placed on climate change within the context of watershed planning. States, similarly, should expand or enhance other state plans that include water-related concerns—such as forest management, energy, and economic development plans—to include the impact of climate-change scenarios.

3) States should coordinate with and include local governments in their climate change planning efforts. Local governments are an ever-increasing player in water issues, for example, through land use policies, as the developer of new water supplies, water transfers, and in implementing water restrictions and water use efficiency programs.

4) States should evaluate and revise as necessary the legal framework for water management to the extent allowable to ensure sufficient flexibility exists to anticipate and respond to climate change.

5.D. Ongoing Coordination & Information Sharing Between Scientists, Policy-Makers, and Water Users

The Governors should convene ongoing, broad stakeholder meetings between state water managers, local water supply managers, scientists, federal agencies, universities, and others to make sure water managers understand what the science is saying about climate change and what new tools exist, and, conversely so that scientists understand the data and research needs of water managers and users.

“States should evaluate and revise as necessary the legal framework for water management to the extent allowable to ensure sufficient flexibility exists to anticipate and respond to change.”

6. Coordination and Cooperation in Protecting Aquatic Species under the Endangered Species Act

Analysis

Conflicts have arisen since the enactment of the Endangered Species Act (Act) in 1973 between development and management of state water systems for traditional purposes and protection of endangered aquatic species that are dependent on rivers, streams and wetlands. From the Tellico Dam snail darter to the Rio Grande silvery minnow, balancing water-related economic and environmental needs has been challenging. In 1982, recognizing the need for greater coordination, the Congress incorporated a policy statement in the Act directing federal agencies to “cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species.” (ESA Section 2(c)(2)). Further, ESA section 6(a) requires that “. . . the Secretary shall cooperate to the maximum extent practicable with the States . . . [and consult] with the States concerned before acquiring any land or water, or interest therein”

Despite these Congressional pronouncements, conflicts have continued to occur between management and use of water and the needs of endangered and threatened species in the West. Greater cooperation and coordination between federal and state water and fish and wildlife agencies is necessary to improve the prospects for aquatic species conservation and recovery and to assure the continued economic vitality of the West. Congress did not address this reality in its last significant amendments to the Endangered Species Act (1988).

As stated in a 1997 Senate report accompanying proposed legislation (S. 1180); “the respective relationship of the States and the Federal Government over the use or allocation of water has never been precisely fixed. Consequently, the boundaries between State and Federal responsibility have been the subject of much discussion and debate for many decades in a variety of contexts It was ultimately determined that a delineation of the boundaries between the States and the Federal Government over the use or allocation of water was not possible in . . . the [context of] reauthorization of the Act. A position of neutrality on this issue is reflected in this bill.” S. 1180 did not pass. None of the bills pending before the current Congress move away from this position of neutrality in that they do not deal with the above-described boundaries between states and the federal government over water allocation and use.

Administrative steps have been taken in the past to accommodate some landowner and state resource agency concerns. More needs to be done at both the federal and state level to expand the use of administrative and management mechanisms. Policy directives are needed to implement the Congressional pronouncement of ESA Section 2(c)(2) that Federal agencies “cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species.” Further, given their primary role in water allocation and protection, states should enhance their ability to avoid conflicts under state water law.

“Greater cooperation and coordination between federal and state water and fish and wildlife agencies is necessary to improve the prospects for aquatic species conservation and recovery and to assure the continued economic vitality of the West.”

Recommendations:

6.A. Working with representatives of the federal implementing agencies, and soliciting input from other federal agencies and stakeholders, western state representatives under the auspices of the WSWC should establish a protocol outlining objectives and principles for implementing ESA Section 2(c)(2). Its objective should be to minimize conflicts arising between the use of water for the needs of listed species and other water uses and to foster cooperation and consultation between Federal and State governmental entities to enhance species protection and recovery, while protecting rights to water use.

The protocol should be proactive not only in terms of addressing issues in advance of potential crises, but in avoiding subsequent actions under the ESA such as future listings. The protocol should provide a road map and pathway for the State water development and management agencies and the signatory federal agencies to enter into appropriate agreements that are mutually beneficial.

The protocol should allow for the uniqueness of each local situation and each unique natural resource that may be at risk thereby allowing agencies to tailor agreements appropriately. It is important to note that the protocol should not grant any new authority, nor should it prohibit the exercise of existing authority. The protocol should recognize that there are certain

limitations that agencies have, but encourage those agencies, wherever and whenever possible, to advance the expressed objectives and principles.

The development and implementation of the protocol would represent a further important step in the states' proactive efforts in the development of collaborative solutions to the water challenges posed by the ESA. The states have been supportive of the successes that have been garnered by basin-wide species recovery efforts such as that in the Upper Colorado River. States support the expansion of this approach to other basins, such as those being formulated in the Platte and Missouri River basins. The basic tenets that form the foundation of the protocol are critical to effective, efficient application of the ESA. Implementation of the provisions of the protocol through partnership efforts between the federal implementing agencies and the states would move us toward uniform application across the regions, support further basin-wide recovery efforts and assure that state primacy over water allocation decisions remains intact.

6.B. Identify tools under western state water law that can be used to provide water for threatened and endangered species protection.

Actions at state and local levels are often the most successful in dealing with water issues involving threatened and endangered species. In their primary role in managing water resources, it is therefore important for western states to consider various approaches for obtaining water necessary for threatened and endangered species. It is likewise important for the federal government, particularly the U.S. Fish and Wildlife Service

“The development and implementation of the protocol would represent a further important step in the states’ proactive efforts in the development of collaborative solutions to the water challenges posed by the ESA.”

(FWS), NOAA Fisheries, and federal action agencies, to recognize the availability of state tools to acquire water for species protection. Indeed, the federal government should avail itself of these tools in order to provide greater protection for species where required, while acting pro-actively to avoid the conflicts which have too often characterized the implementation of this Act.

A report on this subject should include an analysis of: (1) the use of public interest standards/criteria as a means to protect water for species; (2) state ap-

proaches to using instream flow laws as a tool to provide water for aquatic species; (3) other instream protection strategies, such as flow release conditions, or the creation of state wild and scenic rivers; (4) water “banking” and market approaches; (5) an analysis of cooperative state and federal efforts in river and reservoir operations to provide water for species; and (6) the merits of federal action to help expedite state general stream adjudications as a means to enhance the protection of species.





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Module I: Initial State – Basins, Boundaries, Laws, Allocations & Jurisdictions

Module I Overview

Type of Process/ Negotiation Stage	Focus of Process	Collaborative and Transformational Skills	Context, Geographic Scope or Framing for Decisionmaking
Adversarial	Rights; legal authority	Trust-building; deepening understanding of self in conflict	State, federal, tribal land and water laws; Priority, jurisdiction & supremacy/sovereignty of rights

Stage 1 of Water Conflict Transformation

Section A. General Setting: The Adversarial Stage of Negotiation

In this *adversarial* stage, participants are competitive and focused on their *rights and legal authority*. They may also focus on their issues and positions. Their thinking is framed in “us vs. them”; black and white.

The vast majority of Stage 1 conflict resolution is done within the framework of our laws and institutions. Their methods of solving conflicts include litigation, arbitration, quasi-judicial decisions, and administrative decisions. These traditional approaches for resolving conflict are more about making decisions than helping parties resolve their differences. More than not they settle disputed issues but don’t resolve the underlying conflicts. Input from multiple parties traditionally is heard through public hearings rather than engaging the disputing parties in face-to-face conversations and discussions. Because decision-makers rarely share their decision-making authority, solutions from these processes may leave disgruntled, unhappy parties who turn their attention to delay tactics, protests, court action, or other activities aimed at undermining the implementation of the law or policy that shaped the decision that they lost.²⁶

²⁶ Madigan, Denise and Gerard McMahon and Lawrence Susskind and Stephanie Rolley. *New Approaches to Resolving Local Public Disputes* (Washington, DC: National Institute for Dispute Resolution. 1990) and Oregon Department of Land Conservation and

That said, face-to-face adversarial negotiations do occur in western water management. For example, this type of western water conflict often arises over uncertainties created by an array of state and federal laws and institutions affecting water's use and nonuse. At this level, conflict arises between and among stakeholders over how water will be used, protected, and managed. Conflicts at this level can be inter-personal/organizational, inter-agency, inter-jurisdictional, and/or inter-governmental. Focus and analysis is on stakeholders, positions, and issues. Often the negotiation is focused on water allocations (see Utton Center, Part 1-Module1 in Section E).

When parties stay in their positions and view the process as competitive, progress is likely to be slow at best. Complex multiparty, adversarial negotiations can take years if not decades. Nevertheless, as participants are able to hear more of the dimensions that are part of the conflict, creative thinking and human ingenuity enter the negotiations. The possibility of solutions emerge which draw on this more intricate understanding of both water and the conflict.

There are skills that can be developed at this level that can lead to greater understanding and more satisfactory outcomes. To begin with, when working at this level, there is often a period of expressing pent-up grievances. There may be important information hidden in this venting worth paying attention to or following up on. Given these initial tensions and the competitive framing of the relationships, the collaborative learning emphasis is on self-awareness of how we communicate and perceive situations, and *trust-building*. These can open us up to the possibility that there is more to a situation than we originally thought, and help us be willing to listen to other perspectives without believing that we need to change them.

Section B. Introducing Water Disputes in the Western United States

The West's water system has historically been a source of pride and tremendous benefits to the West. Over the years, needs that must be met and interest that must be served have changed, and the system has adapted to try to keep up the changes. However, the West recognizes that the near gridlock, resulting from changing demands for water resources in a period of rapid urban growth, recognition of Indian water rights, need for protection of endangered species, requirements for improved water quality to meet the Clean Water Act, concern for instream and other environmental values, scarce public funds, conflicting and overlapping laws and programs, and polarized positions among competing parties, continues.²⁷

As was said above, at this *adversarial* stage, many western water disputes arise over uncertainties created by an array of state and federal laws, institutions, policies, funding, and processes affecting water's use and nonuse, and/or funding to implement them. At this level, conflict arises between and among stakeholders over how water will be used, protected, and/or managed.

The Laws as a Source of Conflict

Several of the laws affecting western water management were written at different times in history, infused with the goals and objectives of the day. As Charles Wilkinson says:

...[L]aw is organic;...it grows out of a society. To learn about law, learn about the society and its distinctive qualities, its history, peoples, lands and waters, its possibilities and limitation....Law, in other words, has a habitat. And in time as society – law's habitat – changes, so does the law, responding to evolving priorities, new stress points, and higher dreams.²⁸

Beginning in the mid-1800s, laws that would be the foundation for current western water law were being shaped by miners and other national policies that encouraged settlement of an arid region. A system of rights and seniority was created. The main tenets of the prior appropriation doctrine became:

- “First in time, first in right.”

²⁷ Western Governors' Association. “Policy Resolution 05-25: Watershed Restoration Through Partnerships,” Denver, CO: Western Governors' Association, 2005.

²⁸ Wilkinson, Charles. “Water in the West.” *Open Spaces: Views from the Northwest* 1, no. 3 (1998): 72-85.

- Senior users get all their water first; junior users receive their full allocation in order of descending seniority.
- “Use it or lose it” – use the full water right, or lose the whole right.
- Put the water to a beneficial use – without waste.
- A right-holder can continue to use their right to the exclusion of others.

In much of the West, a fundamental tenet of prior appropriation law was that land and water estates were separate, and that water could be removed from its natural location and used beneficially elsewhere. This gave greater economic certainty to those willing to invest effort and money, and risk settling in an arid region. Further incentive was provided by the federal government through policies and support to build infrastructure to store, divert, and deliver water to the places of use. Rights could be transferred to other users if it is shown that the ability of others to exercise vested rights is not impaired.²⁹

In times of shortage, junior water uses are curtailed, while senior water right holders can use their full amount. This provided greater certainty, even during drought. Quantities were set and never change. This is unlike riparian water law where, in general, every landowner bordering on a stream has a right to use a reasonable quantity of water. Under riparian law in times of shortage, available supplies are shared by all riparians.³⁰

While the prior appropriation doctrine provided a great deal of certainty through the first century of the West’s settlement, it did not anticipate or acknowledge instream-flow needs, environmental needs, and Native American water rights. This has led to a great deal of conflict as these and other interests and needs have come to the fore as legitimate, and unprotected and/or unquantified water reservations.

Jurisdictional Sovereignty/Supremacy/Prerogative as Source of Conflict

The creation and regulation of water rights are primarily state functions. However, there are several laws and reservations of water created by the federal government that tend to be a nexus for conflict with the states’ system of rights and laws.

The federal government holds water for use on public lands that are reserved for a special purpose like parks, forests, and military bases and for Indian water rights. The priority of these reserved water rights is as of the date the reservation was established, whether or not water has ever been used. Since some of these have never been quantified, and those that have tend to be quite senior rights, they can

²⁹ Getches, David *Water Law in a Nutshell* (St. Paul, MN: West Publishing Company. 1997), 7.

³⁰ Ibid., 317.

cause uncertainty and dislocations among those whose water rights are more junior. Further, Congress may exercise its power—from water projects (flood control, agriculture, power generation, and others) to environmental laws – which may affect state water laws.³¹ These federal reserved rights and authorities can result in tension between the state and federal governments, as well as between those that are most served by their laws and policies.

While there are several laws and policies that can trigger this tension and create uncertainty to water right holders, probably the two most significant other forces in western water conflict are two federal environmental laws passed in the 1970s: The Endangered Species Act (ESA) and The Clean Water Act (CWA). Federal requirements under the CWA and the ESA may affect water use in a variety of ways such as requiring sufficient water to meet water quality standards and flows in order to dilute pollution, reduce instream water temperatures, protect fisheries, or otherwise avoid jeopardizing the existence of an endangered species.

While the specifics of each of these laws presents challenges to synchronize with western water law, the overarching tension that drives much conflict is the question of authority among jurisdictions and who has what authority and sovereignty/supremacy.

A relative newcomer may be local jurisdictions. Decisions affecting growth remain primarily a local prerogative. However, states are increasingly exercising their influence.

States have the primary responsibility for water allocation and management. They have jurisdiction to sanction both new appropriations and transfers of existing uses. They also have the primary responsibility for protecting water quality, and the pivotal role in the integration of water quantity allocation and water quality protection....[T]he implications of states' decisions in this arena have direct implications of growth.³²

This may create friction as difficult political choices are made regarding future economic and environmental uses of water.

Western Institutions, Policies, Funding & Processes as Source of Conflict

There are many examples of underfunded programs, aging and inadequate infrastructure, antiquated public processes, and un-harmonized policies that create frustration and conflict.

³¹ Ibid., 12.

³² Western Governors' Association, "Water Needs and Strategies for a Sustainable Future," 4.

Much of our infrastructure is inadequate due to population growth, water quality requirements and safety threats not anticipated at the time of its design and construction.... The future growth and prosperity of the West depends on our aging water-related infrastructure: dams and reservoirs, levees, pipelines, pumping, aqueducts, canals, laterals, and drains, water and wastewater treatment plants, stormwater management works and other facilities to control and manage the water that supports our present way of life. Much of this infrastructure is being used beyond its engineered design life, and some parts suffer from the impacts of deferred maintenance.³³

Even if budgets become available, decisions about how to meet modern safety, security, and environmental requirements, and upgrades to these facilities or changes in their operation to conform to appropriate natural resources stewardship principles and meet new demands related to population and changing societal values can be sources of conflict.

Budgets are shrinking, however.

...[A]t the federal level, the operation and maintenance budget of the two largest federal water supply agencies, the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation, now exceed their construction budgets. Their operation and maintenance backlog, as well as their rehabilitation and replacement needs, continues to grow. The Environmental Protection Agency's funding for the Clean Water Act and Safe Drinking Water Act State Revolving Loan Fund is declining while needs grow.³⁴

Users/Brethren in Conflict

The tension is not just between users and needs but among them as well. Brethren find themselves in competition. For example, endangered species that need flows may conflict with endangered species that need wetlands and higher lake levels in the same system. Upstream and downstream tribes may compete for federal negotiating attention, congressional funding, and water, land and environmental interests and needs to settle reserved treaty rights. Groundwater withdrawals from urban areas may result in drawing contaminants into other municipal wells.

Summary

While there are many sources of conflict in western water management, these and even more complex variations on these are challenging western institutions' and structures' capacity to respond. Many efforts to respond remain in adversarial processes.

³³ Ibid.

³⁴ Ibid., 3.

Exercise I.1: Introducing Water Disputes

Exercise conducted by instructor/facilitator.

Objectives

Part 1: Water Uses/Interests of the Public in Water – To introduce the multiple and often competing uses of water and the public interest.

Part 2: Spokespeople – To introduce the multiple players that speak on behalf of these uses and the public interest.

Part 3 and 4: Issues in Water Allocation – To introduce the difficulties and opportunities in managing multiple uses in western water.

Key Point of Exercise

Provide a foundation of understanding of the uses and stakeholders in western water management and conflicts.

Instructions/Additional information

There is a distinction between “consumptive” and “non-consumptive” uses of water. Typically consumptive uses of water are considered to be uses like irrigation and drinking water, and “non-consumptive uses” being uses like transportation, flows for fish and wildlife, and aesthetics. In the West, water is typically appropriated for consumptive uses – called “beneficial uses.” All prior appropriation states consider domestic, municipal, agricultural, and industrial uses to be beneficial uses. However, this does not mean that all such uses will be deemed “beneficial” under all circumstances and for all time. “Indeed, yesterday’s beneficial use may be unreasonable or wasteful, and thus impermissible, today.”³⁵ Beneficial use is the basis, and it limits the amount and manner of the appropriator’s right to use water.³⁶

For “non-consumptive” uses – usually instream uses, water in natural watercourses can be removed from availability for appropriation by state action or federal law to preserve it for some future use for instream flows.³⁷ In some parts of the West today, instream requirements for fisheries and/or species’ needs can be significant, particularly if there are cultural, biological, and commercial interests in a fishery (e.g. salmonids in the Pacific Northwest).

Today’s water managers understand how dynamic and complex this all is. Species’ needs can vary tremendously – often based on the historical availability of flows. Flows can be highly modified. Species’ ability to adapt to these changes varies.

³⁵ Getches, 97.

³⁶ Ibid., 97, 118-120.

³⁷ Ibid., 113.

Further, water is “reused” multiple times. For example, some portion of irrigation water spread on fields returns to the nearest stream or river through tail ditches, runoff or seepage. Most municipal water returns to the river as treated (or untreated) sewage and wastewater. These return flow become the supplies and diversions for other water users to appropriate and use. Changes in the quality of water due to use may also need to be considered.

In the end, the amount of water that is actually, quantitatively lost to a river system, and the timing of this loss, is important. The impacts to other users by quality changes to the water are also important considerations in western water management and maintaining the system of water right priorities and beneficial uses of water.

At the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002, the international community called on all countries to “develop integrated water resource management and water efficiency plans by 2005, with support to developing countries.”

The Global Water Partnership’s Integrated Water Resource Management (IWRM) “comb” was developed as a useful framework for visualizing and categorizing the uses to which water is put: Water Supply & Sanitation; Irrigation & Drainage; Energy Resources; Environmental Services; Industry & Navigation. Interestingly all of the categories of use in the “comb” are economic uses (Figure 4). Aesthetics, religious, and indigenous uses are not included.³⁸

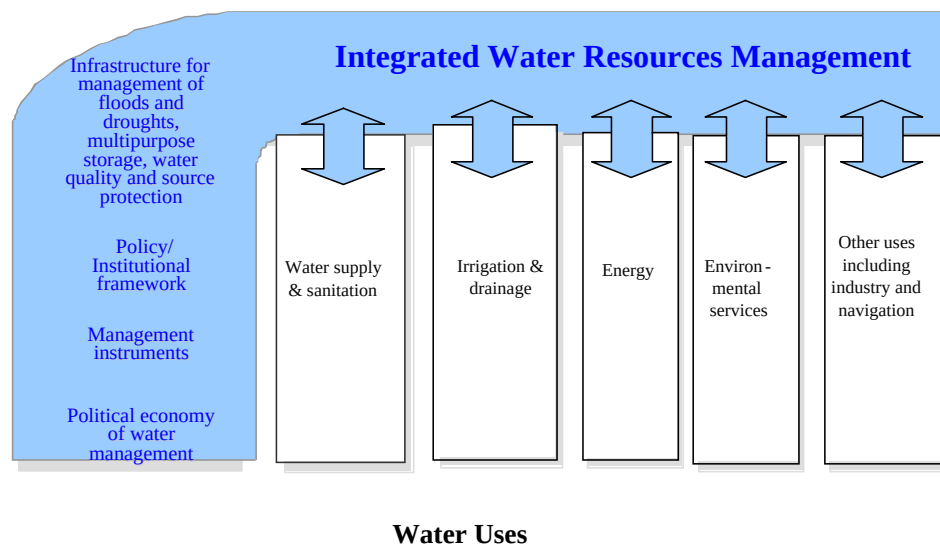


Figure 4: The Integrated Water Resource Management “Comb”³⁹

³⁸ Ibid.

³⁹ Jøneh-Clausen, Torkil, *Integrated Water Resources Management (IWRM) and Water Efficiency Plans by 2005: Why, What and How?* (Stockholm, Sweden: Global Water Partnership. 2004).

Section C. Introducing the Sandus River Basin Simulation

Exercise I.2: Parties, 40 Issues, Positions, and Legal Authority

Exercise is conducted by instructor/facilitator.

Objectives

To introduce how parties, issues, positions, and legal authority influence how broad stakeholder groups and jurisdictions approach water deliberations and negotiations

Part 1: The Perspective of Jurisdictions (e.g. Skyland State, Hamilton State (including Port City), Oceana federal government, the Kalayish Tribe, Sandus Republic) along with the NGO community – To identify parties, issues, positions, and legal authority within jurisdictions/NGO group for a simulated water negotiation.

Part 2: Role Play – Party Representatives – To illustrate that jurisdictions and the NGO community are not monolithic, autonomous entities, but have diversity based on their constituents.

Part 3: Preparation for Stage I – To set the stage to begin the Sandus River Basin negotiations

Key Points of Exercise

A key piece of preparation for any negotiation is to make sure that all parties and perspectives that might have a stake in the negotiation have been considered such that the jurisdiction/NGO group knows enough about their issues, positions, and legal authority.

Some systematic work on the front end identifying parties/stakeholders, positions, issues, and legal authority, and how they may all interact might identify unexpected possibilities that will help create potential for success.

While it is not a necessary outcome, processes that are framed to be *adversarial* – just working from legal authority, issues, and positions – tend not to be very effective in reaching mutually satisfying outcomes.

Instructions/Additional information

To be provided by instructor.

⁴⁰ Parties may be individuals, organizations, or agencies represented by a jurisdiction or a stakeholder group.

Instructions for Small Group Tasks⁴¹

HANDOUT (H-I.2.1)

1. Using the Yellow Post-its, identify parties that may become involved in the discussion-negotiations over Sandus River Basin. These Parties may be individuals, organizations, or agencies in any of the jurisdictions/NGO community within the basin, or from anywhere else.

Post your results at the appropriate places on the walls. You should aim for at least 20 such parties.

2. Using the Blue Post-Its, identify “Issues” that are likely to be raised and/or addressed within and/or among these parties now and in the near future.

Post your results at the appropriate places on the walls. You should aim for at least 10 such issues.

3. Choose at least three key Parties and Issues, and identify at least five key Positions for each Party as it considers those issues.

Write those Positions on the Green Post-Its and post them at the appropriate places on the walls.

4. It may help to fill out the following type of form, expanded out for however many parties are identified.⁴²

⁴¹ This exercise is based on one developed by CMI Washington/Carolina.

⁴² Adapted from Barkai, 704-751.

Negotiation Planning Chart

HANDOUT (H-1.2.2)

Fill in the name of the party and then blocks with information you know. You will need three of these charts (one for each key party, as noted in the instructions).

Party: _____

People	Relationship	Issues	Positions	Interest	Options
Who:	Past:	1.	Estimated initial position:	1.	1.
Negotiation Styles:	Current:	2.	Estimated bottom-line position:	2.	2.
				3.	3.
	Desired:	3.	Estimated BATNA:	4.	4.
				5.	5.
				6.	6.

Chart Definitions and Explanations

HANDOUT (H-I.2.3)

People: What are the past histories and present feelings of the people involved in this negotiation? What are their goals and objectives? Who is more powerful and what is the source of that power? What influences can they bring to bear on this negotiation? What do you know about their negotiating style?

Relationship: Do the negotiators or their constituents have any history together? What was that prior relationship like? How are they getting along now during the negotiation? Do they have a good relationship? Is it strained? Have they just met for the first time? Will the parties have a continuing relationship or will this be a "one-shot" negotiation? Even if the parties are not likely to work together in the future, will reputations be made in this negotiation that will follow the negotiators in the community?

Issues: The issues involved in the negotiation are the topics to be negotiated. They are also the questions and concerns that each party raises during the negotiation. It is usually very helpful to frame the issues as questions to be answered rather than statements that are made.

Positions: The positions in the negotiation are the solutions that each person has in mind. Positions are the "What" that the negotiators want. Many different positions are considered during a negotiation including, the opening position (demand), a fallback position, a bottom line, and a BATNA (Best Alternative to a Negotiated Agreement).

Interests: Interests are the basic needs that negotiators seek to be met in any agreement. If you know the interests, you know "why" the negotiators take the positions they do during the negotiations. Maslow's hierarchy of needs is helpful here.

Options: Options are the full range of possibilities on which the parties might conceivably reach agreement. Options are, or might be, put "on the table." An agreement is better if it is the best of many options, especially if it exploits all potential mutual gain in the situation.

BATNA: Alternatives are the walk-away possibilities that each party has *if an agreement is not reached*. In general, neither party should agree to something that is worse than its "**BATNA**" – its **B**est **A**lternative **t**o a **N**egotiated **A**greement – "away from the table".

Section D. The Sandus River Basin: Negotiating by Jurisdiction

Exercise I.3: Negotiating by Jurisdiction

Exercise conducted by instructor/facilitator.

Objectives

To illustrate the difficulty of negotiating water issues around rights and legal authority, and how jurisdictions represent many of these in negotiations.

Key Point of Exercise

Negotiating by issues and positions is tremendously difficult, and generally opens with parties focusing on their own *rights*, often without attention to the good of the basin.

Instructions/Additional information

To be provided by instructor.

Section E. Supplemental Reading for Module I

The Utton Transboundary Resources Center. "Crossing Cultural Boundaries for Sustainable Solutions." *Lewis and Clark Law Review* (2005). Available at: http://uttoncenter.unm.edu/pdfs/Crossing_Cultural_Boundaries.pdf

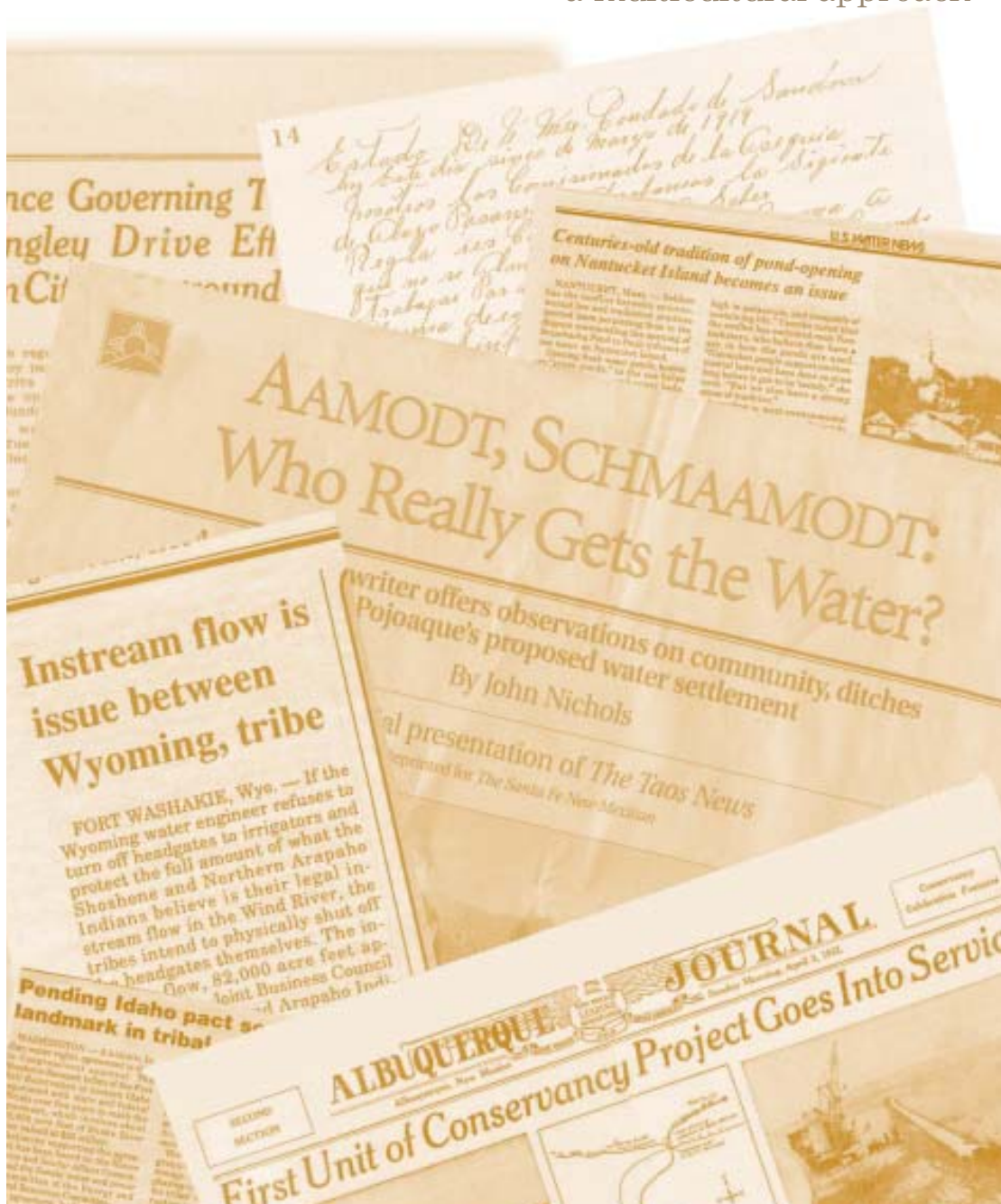
Getches, David *Water Law in a Nutshell*. St. Paul, MN: West Publishing Company. 1997. (Not included in workbook)

Utton Center, "Crossing Cultural Boundaries for Sustainable Solutions"

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The Utton Transboundary Resources Center. "Crossing Cultural Boundaries for Sustainable Solutions." *Lewis and Clark Law Review* (2005). Available at: http://uttoncenter.unm.edu/pdfs/Crossing_Cultural_Boundaries.pdf

Transboundary Waters Crossing Cultural Boundaries for Sustainable Solutions a multicultural approach



Dedication

This synthesis and proceedings is dedicated to the memory of former Zia Pueblo Governor William Toribio, who was appointed by Governor Richardson to serve as the Native American liaison in the Office of the State Engineer. Governor Toribio was very active in the initial planning for this conference. He died on New Year's Day 2004, before the conference was held.

Governor Richardson said, on that occasion: "He was a true leader with a strong commitment to native people. ... William's wisdom and experience, and his soft-spoken style of bringing people together left an indelible mark on New Mexico. He had a gift for patience and understanding when dealing with the tough, complex issues of water in New Mexico. His loss is felt amongst those of us who had the privilege of serving with him this past year."

The Utton Center appreciates having had the privilege of working with this much-missed colleague.

Thanks

Thanks to the Middle Rio Grande Conservancy District for allowing the copying and use of newspaper clippings from its archival collection, and to Professor José Rivera for permission to use the acequia documents, which were taken from his *Acequia Culture: Water Land and Community in the Southwest* (UNM Press, 1998).

Transboundary Waters

Crossing Cultural Boundaries

for Sustainable Solutions

a multicultural approach

CONFERENCE REPORT & SYNTHESIS

Acknowledgements

This report is a synthesis of the presentations and discussions of the Utton Transboundary Resources Center's conference held September 2004 at the Santa Ana Pueblo in New Mexico. Almost 80 water experts from tribes, irrigators, communities, environmental groups and government entities met to talk, listen, gather information, and increase their understanding of one another's approach to water issues. Participating in a candid dialogue across cultures and interests, this diverse group explored how community is built and the role of community in resolving resource conflicts. This report is called a "synthesis" rather than a "proceedings" because it not only summarizes the ideas presented and discussed at the conference, but puts them together in a way that, just as at the conference itself, the result is greater than the sum of its parts. We are grateful to those who worked on the program as well as the participants, presenters, and facilitators for their contributions to the success of this conference.

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and Chris Garcia,
Chris Garcia, Editor



*Preventive diplomacy
for natural resources solutions.*

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To the Larger Community: Next Steps for the Utton Center

Responding to Our Community

How This Conference Came To Be

Marilyn C. O'Leary, Director

UTTON TRANSBOUNDARY RESOURCES CENTER

This conference began with a suggestion from a participant during our previous conference,¹ “Interstate Waters: Crossing Boundaries for Sustainable Solutions,” to hold a similar workshop but with an emphasis on Indian water rights and inviting actual stakeholders to existing disputes to participate. We pursued that idea. As our thinking developed, we broadened the topic to include *acequia* issues, and then finally decided that our focus would be on cross-cultural water rights settlements with an emphasis on Indian water rights.

As our planning evolved we focused on successful water negotiations that included Indian and *acequia* water rights. Governor Peter M. Pino of Zia Pueblo had the idea of producing a video for the conference to show the success of water users on the Rio Jemez in negotiating an agreement regarding water deliveries during drought. The video illustrates the beauty of the Jemez Valley and how agreement was reached to share the waters of the Jemez. It also presents the difficult and wide-reaching issue of how to maintain traditional water uses while accommodating urban growth, and shows different values related to water and approaches to water use within the pueblo communities and the basin as a whole.

We contacted people from around the country who had been involved in other successful negotiations. People from Maine and Washington, from Montana and New Mexico, and from places in between agreed to bring their experiences and expertise to discuss what they believe to be the essential elements of success.

When I began talking with people in the New Mexico water community about this conference, I was directed almost immediately to William Toribio, a former governor of Zia Pueblo who had been appointed by Governor Bill Richardson to be the liaison between Native American pueblos and tribes in New Mexico and the Office of the State Engineer. William was working in the State Engineer's office when we met and was enthusiastic and supportive of this project. He attended several planning meetings and introduced me to the Governor of Santa Ana Pueblo, where the conference was held. I was impressed by William's experience, insight, and good humor, and looked forward to our meetings. Then, on New Year's Eve, 2004, William died suddenly at his home. Our loss was only a shadow of the loss to the greater community in which William worked. We dedicate these proceedings to William's memory.

The staff of the planning phase included myself and Susan Kelly, the Utton Center's Associate Director. Ruth Singer, the Center's Coordinator of Special Events, took on the formidable communications and logistics challenges of inviting, housing and feeding the conferees. Torild Kristiansen began as the Utton Center's Administrative Assistant on the day before the conference itself, and somehow managed to register and direct traffic, troubleshoot and organize, just as if she had been part of the planning team from the beginning.



Marilyn O'Leary is director of the Utton Transboundary Resources Center at the University of New Mexico School of Law, where she teaches International Water Law and lectures on water law (including water markets and water privatization) to professional as well as lay groups. She has researched and written on the creation and implementation of water courts in the U.S. Prior to returning to her law school *alma mater* as director of the Utton Center, O'Leary practiced water and utility law in Albuquerque. She also served five years on the New Mexico Public Service Commission, as assistant counsel, executive director, commissioner and commission chair.

¹ For a copy of the conference proceedings “Interstate Waters: Crossing Boundaries for Sustainable Solutions: A Multidisciplinary Approach,” contact the Utton Center at (505) 277-7809 or at uttoncenter@law.unm.edu.

The planning group included a facilitation team—Roberto Chené and Lucy Moore—that brought extraordinary depth in both cross-cultural training and mediation and facilitation of water issues. Blane Sanchez, New Mexico's first Pueblo Interstate Stream Commissioner, contributed a unique perspective on cross-cultural water issues both as a professional water manager in several roles and as a tribal member of Isleta Pueblo. His family includes members of Acoma Pueblo who invited the conferees to celebrate the Feast of San Estevan at Sky City. Chris Garcia, documentarian of several water processes in New Mexico and co-founder of the New Mexico Water Dialogue, prepared the hypothetical case study and these proceedings.

During several months of regular, lively meetings this group explored a wealth of ideas about culture, community, sustainability, and cross-cultural water issues. We developed the hypothetical case study about Ourplace, a new nation developing a new constitution. We exchanged ideas with the panelists and their moderators. We previewed the Jemez video with many of the “cast” of the documentary.

The conference itself was a sort of celebration of our engagement with culture and with water, an opportunity to broaden the discussion to include the most interesting and exciting practitioners we knew. It exceeded our most optimistic expectations.

I want to thank all of those who helped us with our planning, including Peter M. Pino, Peter Sly, Derek Lente, Dale Pontius, Hilary Tompkins, John Thorson, Steve Farris, John Utton, Sam Deloria, Michael Campana, Jose Rivera, Michele Minnis, Chris Garcia, Scott Hughes, Sterling Grogan, Tom Kinney, John Redlinger, Rhea Graham, Lynn Trujillo, Blane Sanchez, Lucy Moore, and Roberto Chené. My apologies to those important contributors I have neglected to mention. I also want to thank the funders and sponsors of the conference, the U.S. Department of Energy; the Thaw Charitable Trust; McCune Charitable Trust; Highlands University Watershed and Forestry Institute; Sheehan, Sheehan and Stelzner, PA; Natural Resources Section, State Bar of New Mexico; and Public Service Company of New Mexico.



Torild Kristiansen
Administrative Assistant
Utton Center



Ruth Singer
Coordinator of Special Events
Utton Center



Susan Kelly
Associate Director
Utton Center
and John Kelly

Community Building Across Cultural Boundaries

A Conference Overview

Chris Garcia

In conference sessions, several questions came up again and again. The first: *Is there a role for community building in water settlements?*—was a central element in the conference design. The other questions were raised by conferees, and included:

- *How can we maintain the support of our constituency?*
 - *What are our values regarding ownership of water?*
 - *What is the federal role in water settlements?*
- and the ever-popular,
- *What should we do about those darned lawyers?*

Is there a Role for Community Building in Water Settlements?

Conference planners began with a hunch that sustainable water agreements are more likely when the parties to a water conflict can visualize themselves as a community. While communities can and do experience bitter conflicts, their members have something in common; it is this mutual interest that makes a collection of entities a community. This mutuality might, planners felt, help guide a group of adversaries towards terms that answer the basic needs of each party, including the absent parties who are members of future generations.

Water issues are place-based, which supports a natural community among participants. The collection of interests engaged in a water conflict may, however,

have qualities which make community building a challenge. River basin neighbors are often from different cultures with different values, especially those values related to water. While these neighboring cultures are likely to have a long history, they are less likely to have had close communication and an opportunity to learn about one another. And litigation, the classic forum for water conflicts, is not generally seen as a community building environment.

The Utton Center hoped the conference itself could be a cross-cultural community building experience, providing conferees with a shared experience they could use to identify what is needed for community building to take place in the “real world” environments of their daily lives. There was no way, of course, that conference planners could make a community happen at the conference. Those who came together had to do that themselves. But the planners thought they could provide the circumstances in which community building might occur. Planners urged the very busy conferees to be present for the full three days of the conference. They asked New Mexican invitees not to commute to the conference but to stay at Tamaya for the duration. Shared meals and informal conversations were essential to the planners’ vision.

While it is important not to mis-state what took place—this was not a “therapeutic



Planning the Conference:
Stephen Snyder,
Chris Garcia, Sharon
Hausam, Marilyn O’Leary, in
Roberto Chené’s backyard



“Until we’ve talked and interacted as neighbors, we really don’t know each other. We assume things about one another, and those assumptions are often mistaken. The intention of this opening panel is to bring us together the way neighbors are brought together.”

*Blane Sanchez,
New Mexico Interstate Stream Commissioner*

“...in the world we all try to hide the ball. In this group it was clear early on that we were going to open everything up.”

*Jesse Boyd,
commenting on the breakout groups*

“Each of us could talk for an hour about failed promises. It is essential to understand that failed promises don’t get us anywhere. The best [negotiation] artists understand failed promises and can move them into an effective way to secure the lost objective.”

David Guy, Northern California Water Association

experience”—it is also important to acknowledge that *something* did take place. Individuals shared their experiences in a respectful environment and many of the 80 very different people who attended came to know one another as neighbors and colleagues and to feel a sense of themselves as a community.

Neighbors: Again and again conferees returned to the themes of neighbors and community. Blane Sanchez introduced the “Perspectives on Water” panel as being like neighbors getting to know one another. Blane’s vision was realized when panelists shared how their lives related to water at a level that opened windows on their personal values and experience of the world. Conferees continued to build on this knowledge, and on the shared experience of

the conference itself. They talked and argued in the breakout groups which worked out principles and strategies for a hypothetical cross-cultural water allocation situation. They ate meals and walked together.

The group’s sense of itself as a community was strengthened by spending one day with an ancient and intensely traditional community. At Acoma Pueblo’s San Estevan Feast Day, Acoma families opened their homes to conferees, and fed all with grace and abundance. Holding fresh evergreen boughs and wearing traditional dress, hundreds of Acomas from children to the very old danced throughout the long day in honor of the pueblo canes, the pueblo land, and the need for moisture and sustenance. The conferees returned to Tamaya that evening feeling sated and tired and blessed. The next day, as Governor Pino of Zia Pueblo gave the closing, it rained, and the conference thanked the Acoma dancers for this additional blessing.

Pros and Cons of Openness:

Conferees worked in breakout groups on a hypothetical problem involving water sharing among distinct cultural groups. In unfacilitated, intense, contentious and yet friendly discussions they tried to identify the necessary elements of a successful agreement. The talk was open and candid.

Eileen Gauna, professor of law at Southwestern University School of Law and a prominent member of the environmental justice community, observed that “The process of building trust and being candid in negotiations runs up against three important considerations:

- The first is *historical betrayal*. How do you get over how non-dominant groups, when they are in a process with dominant groups, have always been screwed?
- The second is that in litigation and negotiation, the process is always to *hide*, to process internally. How do you get beyond this conventional wisdom to enter negotiation with candor and honesty?
- The third barrier is the *difference in resource capacity*. There is a lack of technical capacity for some groups to participate fully.”

Acknowledging historical betrayal:

In addressing the first of these considerations—historical betrayal—two seemingly opposite observations were made. On the one hand, as a panelist observed, “failed promises don’t get us anywhere.” Others agreed that today’s water agreement can never right past wrongs.

On the other hand, refusing to acknowledge the history of betrayal erodes any basis for trust. Lucy Moore, conference planner and facilitator, shared her feeling that “There almost needs to be a chair at the negotiating table for history and betrayal.” She told of a recent mediation on regulations for Indian schools, where 19 tribal members and a similar number of federal agency staff, many of whom were tribal, tried to reach consensus. While they did reach consensus, the process never felt resolved. “Tribal members spoke again and again of terrible historical traumas in the school system. This really turned off the members of the federal team, who became very uncomfortable. ‘How many times do I have to hear this?’ ‘It wasn’t me! My people came from Ireland in the thirties.’” Moore said “It’s up to those of us who *can* hear these stories to show others that they can be heard, that they *must* be heard before they can be set aside so we can move on.”

Empathy: Most conferees felt that laying the groundwork for empathy is an essential, and difficult, first step in exploring the possibilities for a creative agreement. One conferee urged “If you take time to listen to one another’s stories, one result is empathy. Going too quickly to problem-solving skips that trust-building step.” On the other hand, the topic of historical betrayal often feels like an attack. As a participant observed, values can be used as a sword as well as a shield. Another replied “It’s hard to acknowledge when you’ve wronged someone. If you can cultivate the habit of empathy, you can feel the wrong, and it’s easier to acknowledge the historical burden you carry.” Still another urged, “All people are not empathetic. We can perhaps bring this out, but it’s not there. As individuals we can speak as advocates for empathy.”

Dealing with inequity: The crucial issue here is inequity in power among the

“We’ve been trying to talk about values in a positive context. But values can be used as both a shield and a sword. Here we have tried to use recognition of values to solve problems, but there is a way of beginning with values that is an obstacle to solving problems.”

Maria O’Brien, of Modrall, Sperling, Roehl,
Harris and Sisk, with Stanley Pollack



“As an advocate for acequias, I’ve always felt it’s a mistake to demonize municipalities. But I find it hard to see how a municipal interest is threatened by articulation of traditional values.

Do traditional values threaten privilege? Communities with less power often fare less well in the political process, where value conflicts tend to be resolved. Our mechanisms for conflict resolution don’t level the playing field for weak players.”

Paula Garcia, New Mexico Acequia Association

parties to a potential agreement. To many, this topic feels like a Pandora’s Box. Once we admit that there are grave disparities in power, what will be done about it? One conferee observed “I have been interested in how people respond to the threat inherent in talking about values. ... We might want to be a little introspective when we feel threatened by talking about a value. Are we threatened because the value would unseat our privilege?”

Value of a devil’s advocate: John Redlinger, Special Projects Officer of Reclamation’s regional office, said, “I often play the devil’s advocate in conflict negotiations. In a discussion among parties to a conflict who are all on the same side, advocacy for the other side is not empathy, it’s common sense. Someone needs to say ‘These people (those on the other side) know what they’re doing.

“ If you’re going to make an agreement you have to be stationary, you have to be here when we’re trying to work it out. ... On the rollercoaster ride there’s downs as well as ups.”



Peter Pino, Governor, Pueblo of Zia
with Marilyn O’Leary

“ When the parcientes come to say they are getting the short end, I have to explain. I say ‘Give me your opinion. Give me your solution. Tell me what to do.’ Then I have to listen to them. And tell them the hard truth about why that can’t be done. We are the junior water-users on the river.”



Gilbert Sandoval, Rio Jemez acequias
with Vincent Toya

They’ve got an interest here. You need to understand it.’ There’s a role for a devil’s advocate whenever you’re discussing forces bearing on a negotiation.”

Commitment to the process: A water settlement doesn’t *end* when the papers are signed—that’s when it *begins*. A high turnover in agency staff may be a serious impediment to reaching and implementing sustainable settlements.

One aspect of a land-based community is that people are members of it whether it is convenient or not. This may be a central difficulty in building community among groups that include land-based people and more mobile, transient mainstream-society parties. Governor Pino of Zia Pueblo said “Pueblo people are going to be here. If we mess up our own environment we have no one to blame but ourselves. ... Please stay where you are if you’re going to work on this.”

Jim Davenport, of the Colorado River Commission of Nevada, responded that while *continuity* is a value of land-based cultures, *mobility* is a value in modern urban culture. The principle of respect for cultural values needs to be applied reciprocally. Water settlements will have to find a way to face this important value conflict head on.

How Can We Maintain the Support of Our Constituents?

Many conferees were interested in how negotiators can maintain their constituent support as an agreement is approached. As one conferee put it: “In my experience, at some point the stakeholders say ‘Hey! You’re giving our water away!’ For us, it’s been all over after that.” An attorney

Jim Davenport,
Colorado River
Commission of
Nevada, with N.M.
Senator Carlos
Cisneros



asked “How do you deal with your ‘backside,’ the client-control problems of implementing the agreements?” All the responses involved committing significant resources to communication.

Participants in the Rio Jemez Agreement had a wealth of experience in this arena. They said they had to ask dissatisfied constituents for alternatives and then they had to listen to their complaints. Governor Pino of Zia Pueblo said “We ask our tribal members ‘Do you want to be part of this decision or do you want the decision to be something that happens to you?’ People usually want to be part of the decision.”

Many negotiators saw constituent education as a central role. “Education of the tribal community can’t be emphasized enough,” said Jeanette Wolfley of the Shoshone-Bannock Tribes. “I went out to the district meetings to present the proposed water agreement. I became the educator for the negotiated settlement.”

Even for the Montana Compact Commission, whose negotiations are always with the sovereigns—the State, the U.S., the Tribes—it is essential that each sovereign assume the responsibility to see that their constituents are on board. Susan Cottingham, the Commission Director, said “We were always going to people on the Milk River to ask, ‘Is this going to work for you?’”

Penobscot Partners, a diverse alliance which includes the Penobscot Indian Nation, Atlantic Salmon Federation, American Rivers, the Natural Resources Council of Maine, Maine Audubon, and Trout Unlimited, had a particularly complex relationship with its constituents. There were sovereigns and nonsovereigns in the alliance, as well as among the parties on the other side of the table. The State of Maine had issues with recognition of the sovereign nature of the Penobscot Tribe. The Penobscot Nation retained independence at the table even from their coalition co-members. Laura Rose Day, Director of Penobscot Partners, observed “Part of success in the negotiation is understanding that each of the other players has backside issues of their own.”

“There have been relationship issues, both human and ecological. We’ve gone out of our way to eat together, to get to know one another as human beings, to pick up the phone, to understand where individuals can go out on a limb and where they can’t.”

Laura Rose Day, Director, Penobscot Partners

“Now my children and grandchildren can see that we can work with our neighbors. If we had had to litigate, that’s what they would know—that we have to fight with our neighbors. That’s not what I want my children to learn about their place and their neighbors.”

Juanita Revak,
daughter of Gilbert Sandoval
with her mother, Mrs. Sandoval



Community is the payoff: While maintaining constituent buy-in is costly in time and resources, the payoff is realized in an unexpected benefit—a real basis for community. John Jackson of the Pyramid Lake Paiute Tribe said “The tribe has moved from seeing Truckee irrigators as opponents to seeing them as partners in protecting the Truckee River.” This strong statement was echoed by others. Montana Compact Commission Director Cottingham said: “The negotiation is really a means to an end; the end is better dialogue between the Indian nations and white neighbors, going into a hostile situation and coming out where people are working together. The work of cultural understanding and education is the most demanding and the most rewarding.”

“Water is nobody’s property. You as an individual are used merely as a container. You sing it through your mouth, but it is not yours; you do not own it.”

*Antonio Trujillo, President,
San Jose de la Cienega Acequia*



What About Water Ownership?

Perhaps the central difference between the values of land-based cultures, such as the tribes and the *acequias*, and market-based cultures, like that of the mainstream U.S., is rooted in the question of ownership. Arizona Senator Albert Hale, speaking as a Navajo, said “In [mainstream] society we try to ... take ownership of those things that sustain life. ... The elders are saying that we’re working against the law of nature, the law of life. You can’t own these things.” Paula Garcia, recalling the proposed sale of a water right in an *acequia* community, said “Word spread that someone had sold a water right. People protested, saying ‘that water wasn’t theirs to sell.’” Many of the breakout groups pondered whether the hypothetical’s new cross-cultural nation should institute water “rights” or water “privileges.” Lisa Gover of the National Tribal Environmental Council said in one breakout discussion, “The idea of ownership is a problem for me. You want to *start* there—but I can’t even *get* there.”

Value differences are seen in broad relief on the topic of ownership. Brian Shields, Director of Amigos Bravos, said “I hoped we would look at the concept of governing water as a commons rather than as a

commodity. I was disappointed this was not pursued.” Against the legal backdrop of water ownership concepts, many cross-cultural water settlements include both communities where water uses are internally governed on common property principles of sharing, and neighboring communities in which water is owned individually or corporately and traded as a commodity. These agreements confront the problem of reconciling the different perspectives on ownership among their constituents.

“An important federal role is to recognize the federal trust responsibility to protect the natural resources of the tribe.”

Some agencies don’t even know they have a trust responsibility, so we need to do re-education.”

*John Jackson,
Pyramid Lake Paiute Tribe*

What is the Federal Role?

Many conferees were interested in the role of the federal government in water settlements. National, state, and tribal interests, coupled with the federal trust responsibility with respect to tribal assets, make federal responsibilities exceedingly complex.

Interstate and state-tribal water agreements must be approved by Congress; The Endangered Species and Clean Water Acts create federal regulatory responsibilities that are extremely important in water settlements. The trust responsibility requires federal involvement. And the federal government is often asked to fund key components of agreements. Federal decision-makers cannot delegate decision-making authority to field staff. This problem is further complicated by the political nature of upper-level federal appointments, introducing a new set of decision-makers whenever the administration changes.

Brian Shields,
director of Amigos
Bravos



Federal relationships often make decision-making convoluted. High-level involvement in the negotiations could answer the problem, but little attention is paid to these settlements at the high federal levels. This leaves local interests and lower-echelon federal staff to anticipate what issues will concern federal decision-makers, and to try to work these through in advance. Federal interagency teams may introduce glitches in the dynamic between the agencies as well as that between the team members and upper-level federal decision makers.²

Finally, the federal timeline creates confusion. The federal approval process for a water settlement doesn't begin until the final settlement framework is laid out. By the time the negotiators see the federal response to that final framework, the nonfederals may no longer be willing to reconsider settlement terms. The federal comments are not made in an atmosphere of give and take, as the terms of the negotiation were, and are often made in a context that is foreign to the settlement terms.

Several conferees told about doing an 'end run' around the Department of Interior—taking a settlement proposal straight to Congress. This was not, conferees said, due to any deficiencies in the federal staff. The decisions were so complex—often involving international, interstate and intertribal interests—that they simply couldn't get through the agency review process. Others found that when federal staff buy into the process—understand the importance and the terms of the settlement—they can be valuable allies, going to bat for the settlement within Interior and with Congress. Still others, unable to involve the federal agencies in the negotiations, sought extensive positive press coverage of the settlement and its benefits before federal approval, which “at a minimum put pressure on the federal agencies to resolve any problems they have with the agreement in a productive way.”

How About those !#\$%* Lawyers?

The role of attorneys in water negotiations drew a lot of attention, with the usual quota of attorney abuse. The Rio Jemez panelists were clearly delighted to have crafted their basic agreement on their own, calling on attorneys after the fact for

“You can't leave it up to the attorneys to make the decision.... The attorney may not be around when you get to implementation. Your constituents will want to know 'What does this phrase mean? Why did you negotiate this provision?' Negotiators have to really understand what the agreement means.”



Jeanette Wolfley, Shoshone-Bannock negotiating team
with Lisa Gover

“There were lots of times when we just had to say 'We need to talk. Let's find a way through this.' At these times movement was based on personal relationships. We had complete disagreement on the issues, but we kept the ability to talk.”

Laura Rose Day, Penobscot Partners

validation and technical assurance. Even the attorneys among the conferees could share their obvious satisfaction.

Too often, one conferee said, we think of the attorney as *advocate*, when it is more appropriate to regard the attorney as *counsel*. A counsel goes with the client to meetings, listens to the client and to others, and then reflects back to the client what is going on in the legal environment. Some attorneys, another conferee observed, are problem solvers, while others are litigators. It requires a problem-solving attorney to craft an agreement that will stand the test of time.

Most agreed that one should be wary of an approach based on “Let me talk to you without your attorney.” At the same time, many felt that litigants need to be able to say to their attorney, “Now we have an answer.” Some parties to successful settlements reported that the parties first agreed on the concept for settlement and then went to their attorneys to write up the concept.

² See Barbara Cosens, “Water Dispute Resolution in the West: Process Elements for the Modern Era in Basin-Wide Problem Solving,” *Environmental Law*, Lewis & Clark Law School, Vol. 33, number 4. 2003.

“Four of us are in various stages of 12-step recovery from being lawyers. Being a lawyer creates a disadvantage in the realm of personal relationship.”

Peter Sly, Moderator of “Successes” panel

“It is not disturbance that destroys a watershed. Destruction comes when connections are broken. Every time a connection is broken the river system is weakened a little more and its overall health declines.”

Shirley Solomon, Skagit Watershed Council

Voices were raised in defense of litigation, which can sometimes move an issue quickly and forcefully through an impasse in discussion. But litigation, they said, is not the only answer to such an impasse.

Assembling a strong negotiating team that can be candid with its attorneys is important. The negotiating team’s responsibility is to identify when the attorney is going too far, or not far enough. The attorney’s responsibility is to insure that the client has a valid claim and to explain the boundaries of that claim, so the client’s expectations are in line with the negotiation. The attorney must also listen to the client’s wishes regarding settlement and represent those. And in the end, “These are very complex and dynamic negotiations. Attorneys, technical staff, government folks, community, each have an essential role.”

Summing Up

The conference supported the planners’ hunch that the ability of the parties to a water conflict to see themselves as a community is important to achieving a sustainable settlement. Estevan López of the New Mexico Interstate Stream Commission told us that sustainability requires that we develop trust with one another, and recognize that all our perspectives on water’s value are valid.

All the stories of successful settlements contained some aspect of community building.

- The Rio Jemez agreement was reached among irrigators who were

genuinely of the same community—they had gone to high school together. Their sense of community was temporarily set aside in the alienation of the adjudication lawsuit. When irrigators from the pueblos and the *acequias* looked together at the dry pueblo ditches, their sense of community, and their willingness to come to a workable agreement, was restored.

- In the process of settlement, Pyramid Lake Paiutes came to see their non-Indian neighbors as partners in protecting the Truckee River.
- The formal, court-ordered alternative dispute resolution process in the huge Snake River adjudication relied on the parties coming to know each other, eating together, becoming aware that they are neighbors.
- Laura Rose Day, coming from Maine’s riparian-doctrine water environment, noted “though the eastern and western United States have very different systems, we look at very similar issues; issues which have much more to do with communities and relationships than with water law and statutes.”
- At Fort Hall, Jeanette Wolfley identified the most important part of her role as tribal attorney as educating the tribal community to create support for a successful settlement, and assisting in the implementation of the agreement.

Establishing a healthy, sustainable water settlement may require a healthy watershed community just as establishing a sustainable water supply requires a healthy watershed.

The important lesson of these discussions is that they took place. Conferees did not create a “solution” to the challenge of finding common ground among unequal parties whose history includes distrust and betrayal. They did, however, openly share their concerns, fears, and insights into this type of situation. Perhaps discussions like these need to happen among the parties to water conflicts before addressing the actual issues in the conflict. Certainly many conferees felt they had learned about one another in ways that had not been possible before.

Community Voices

A Panel of Perspectives on Water

Blane Sanchez • Moderator

The water use agreement on the Rio Jemez centered on the sharing of information as neighbors.

Neighbors come to know one another by sitting down, sharing coffee, sharing food, talking. Our children interact, we compare our gardens. We bring knowledge and ideas and positive as well as negative connections as we move into the neighborhood. We know that we will need to resolve whatever conflicts may come up. Because, after all, we're neighbors.

Most of us here don't know one another as individuals, much less as neighbors. Before we've talked and interacted, we really don't know each other—we assume things about one another, often mistaken things. The intention of this opening panel is to bring us together, as neighbors are brought together.



Blane Sanchez is the first pueblo/tribal N.M. Interstate Stream Commissioner. He was appointed by Governor Richardson in 2003. His interest in Indian water resources stems from working for both Sandia and Isleta Pueblo's Water Quality Programs. He has family ties to both Acoma and Isleta Pueblos, and lives on the Isleta Reservation as a tribal member there.

A tribal perspective on water



Albert Hale served the Navajo Nation as President from 1995-1998, and has also served as Assistant Attorney General and as special counsel to the Navajo Nation Council. He is the former chair of the Navajo Nation Water Rights Commission. He was born and raised in Klagetoh, Arizona and has practiced law for 23 years. Hale is an Arizona State Senator.

I was born to the Salt clan, born for Bitter Water. My paternal grandparents were of the Tall House people; my maternal grandparents were of the Walkabout clan. This is how I introduce myself as a Navajo. But I am trained to be a white man. Now you'll find out if I've been trained well.

I'll try to speak to you in this foreign language I've been trained in, from my perspective as a former leader of the Navajo Nation and the chair of the Navajo Water Rights Commission.

When we get into disputes in Navajo country over land, you would hear from elderly folks about the issue of natural resources, about trying to control, divide, and make owners. They would say "Why are you fighting about land? You're only given a few moments to live here. When you die you won't take that land with you. It's staying here."

In Navajo, the teaching is that four elements make up life: water, fire, solid, and air. In this society we try to divide them up, to take ownership of those things that sustain life: "this part is yours, that part is mine." The elders are saying that this is working against the law of nature, the law of life. You can't own these things.

In learning to be a white man that's what I've learned. White people want to divide things, to own things. That's how your life is measured, as I understand it. That's a dilemma—a problem we're faced with that gets into this area of water rights.

The present drought really focuses us on the different perspectives, Indian and non-Indian. This brings to the forefront that water is necessary for life. In Navajo we say "*To' bee iina*" water is life.

We need to work together to arrive at a solution coming from different perspectives.

You cannot take water. You cannot own it. It is common ownership, and common ownership doesn't have a place in Anglo-American jurisprudence, because that system is all about separation.

In the present arena in which we're trying to resolve water rights issues, Native American water rights become a critical part of settlement. From our perspective the history of broken promises is being carried into the water rights arena. Many things result from that. This is a constant fear among Indian nations and Indian leaders. Whatever the settlement looks like, there is little trust that the settlement will be honored.

We have seen that litigation of Indian water rights is not pursued with much vigor. These cases languish for years, for decades, because the federal government fails to provide adequate funding to reach a timely resolution. This might also result from the U.S. government's conflict of interest in resolving these rights. There are many Indian nations, and many of those have unquantified water rights. Indian nations who are neighbors have different interests. When the U.S. steps forward as the trustee for each of the neighboring nations, it steps into a conflict of interest. How can the federal government represent the different interest of its trustees? How can they represent the Navajos *and* the Hopi?

That conflict of interest also carries on to efforts to promote settlement, and implementation is impacted as well. We need money to implement the negotiated terms. We all know money is scarce, especially now when we're at war. A lot of the money that settles Indian water rights

is being taken from the Bureau of Indian Affairs. The feds end up robbing Peter to pay Paul; they take money out of Indian programs to settle Indian water rights. The BIA has its own conflict of interest. When it takes money to settle Indian water rights it has to come out of other programs that are meeting other trust obligations. In my experience, those settlements, once reached, are put on the back burner, forgotten. Every year there's a fight for funding. There's a lot of distrust among the tribes as to whether there will be money to implement settlements.

In the early 1960's an agreement was made and legislation was adopted that resulted in the Navajo Indian Irrigation Project (1962). The San Juan-Chama water diversion was part of this agreement, bringing Colorado River water to New Mexico cities on the Rio Grande. That part was completed in 10 years; the funding was made available. But the Navajo Nation part of the agreement is still not completed. Every year the Navajo Nation goes to Congress to fight for funding, and 42 years later the project is not complete. This leads to distrust from the Indian standpoint.

In this conference we are looking at solutions. Federal attention and sustained effort to settle Indian water rights is needed. High-up administrators need to focus more attention on this issue. Interior's water rights division needs more funding to bring the needed expertise to bear on these problems. Interior has a large staff turnover; the learning curve as

to Indian water rights is long. By the time Interior staff learn enough to be effective, they are gone.

I suggest that a separate fund be created to finance settlements and litigation. That money shouldn't be taken from other trust-responsibility programs. Senator Domenici proposed this solution several years ago, and his proposal needs to be revisited. Implementation needs the same attention, resources, and focus as the settlement itself. Settlements aren't complete when the papers are signed; they're settled when the goods are delivered. This is the time and place to talk about these issues. The key word here is TRUST.

An environmental perspective on water



Shirley Solomon is co-founder of the Skagit Watershed Council, a not-for-profit organization with 41 members ranging from federal agencies to local farming and fishing groups. Its mission is to restore functioning natural ecosystems through voluntary participation.

My responsibilities are not to water per se, but rather to a river and the watershed of that river. I work on the Skagit in northwest Washington, a land of green, of gray skies and seemingly abundant water. I run a seven-year old Watershed Council with a membership of forty organizations ranging from the National Park Service to the Farm Bureau, from four tribes to seven non-governmental organizations. We consider ourselves to be a cross-cultural, multi-disciplinary entity, representing both communities of interest and of place.

The Skagit is the third largest of our west coast rivers. It rises in British Columbia and flows some 160 miles into the marine waters of Puget Sound. Like all the rivers of this country, the Skagit has been harnessed, tamed, and replumbed from top to bottom – and no longer functions naturally. There are five dams on her upper reaches, fitted with hydroelectric power plants; a vast network of dikes, levees and drainage ditches makes possible settled life and the agricultural pursuits for which the Skagit Valley is famous.

Famous, too, are Skagit salmon, both in variety and, until recently, abundance. The watershed is home to all six Pacific salmon species and to core populations of Puget Sound Chinook, listed as threatened under the Endangered Species Act in 1999. Salmon need natural, meandering stream beds with deep pools and eddies; cool, clean water; sediment-free gravel beds and quiet side-channels—all difficult for the river of today to provide because its hydrologic regime has been so thoroughly changed. We are just beginning to understand and quantify the effects of all the changes made to the river in the century and a half of white settlement, and to gauge the magnitude and persistence of these changes.

I am an advocate for restoring river function and for doing what we can to rehabilitate the landscape processes that once operated naturally in the watershed.

A healthy river is connected in a multitude of intricate ways with the surrounding landscape and with the water that moves through that landscape. These waters periodically surge across floodplains, carve new channels, abandon old ones and carry away fallen trees. They tear away terraces and pile up materials to build new ones. Groundwater from the surrounding uplands flows into the river and river water soaks into underground aquifers. All the parts are tightly connected, but nothing remains in a steady state. Disturbance is natural and frequent. It is not disturbance that destroys a watershed. Destruction comes when connections are broken. Every time a connection is broken the river system is weakened a little more and its overall health declines. The larger ecological processes are interrupted or simplified. If enough connections are broken, the river dies. It may still look beautiful but ecologically it functions like a culvert. It is simply a conduit for water passing through.

My personal relationship to water was formed at an early age, on an Indian Ocean beach. I hold intense memories of sand between my toes, the thunder of the surf, the sense of buoyancy as I jumped the waves, the sting of salt in my eyes. I've had more to do with fresh waterbodies since those childhood experiences but those first connections remain the defining ones. I've lived in places where fresh water was scarce and used guardedly. And in my travels I've seen how difficult it is for many to secure what most of us in this country accept as a right: unlimited, potable-quality running water.

My highest hope is that, as a society, we begin to talk about a more equitable balance between the rights of humans and the rights of the rest of the natural world. Human rights are not ultimate. Without environmental rights, human rights cannot exist. Few of us realize that human systems are much more at risk than are natural systems. We rarely consider the human health consequences of our actions. We still have the mindset of limitlessness and abundance and believe, against the evidence, that there is a technological fix for every problem. I would hope that we commit ourselves to our place, our watershed, and act as its defenders. I would like us to seek, not quick fixes, but deeper understanding and new alternatives. I would like to see us better address the underlying spiritual and ethical issues that surround natural resource use, particularly water.

My greatest fear is that we, as a society, will be willing to accept a degraded natural world as the price of what we call progress and as the price of maintaining our lifestyle. All of us who seek to reach agreement on contentious issues know that to reach those agreements we sometimes have to swallow bitter pills. I fear that we will too quickly abandon our highest hopes – or relegate them to the sidelines – and become pragmatic in ways that perpetuate the very world we are trying to change.

Along with everyone else, I see the future bringing escalating competition for water and land, demand far greater than the resources can deliver. And further degradation of already fragile systems.

So what of potential solutions?

I feel that we are at a point where reinvention of our concepts of natural resource management is possible. I have seen success in working locally through a watershed council structure. The following are, in my opinion, the factors that are requisite for success:

- Engaging all the right players.
- The right mix of top down/bottom up.
- Clear focus and an agreed-to strategy of what to do and how to do it.
- Committed participants and leadership capacity.
- Sound structure and process.
- Comprehensive and current information.
- Fully functioning organizational infrastructure, including communication strategy, data management system, monitoring program and reporting methods.
- Knowledgeable and supportive community.

Over the next two days we will have the opportunity to move the discussion, and our thinking, beyond the usual recipe of cooperation and compromise. So often we confine ourselves to dealing with the blacks, the whites and the shades of grey, ignoring the purples and crimsons and all the other glorious colors of the spectrum.

I would offer to all of us who labor on this large and worthy task the words of the great spiritual leader, Rabbi Tarfon: “It is not required that you complete the task, but neither are you free to desist from it.”

A state government perspective on water



Estevan López is a native of Peñasco, N.M. where he serves on four *acequia* committees and is President of the Peñasco Mutual Domestic Water Consumers' Association. Governor Bill Richardson appointed him Director of the Interstate Stream Commission in 2003. He is a registered professional engineer and serves as Deputy State Engineer.

I am not a trained water resource manager. I am a petroleum engineer. I know about exploiting a natural resource and about flows through porous media. I am also a chemist.

The remarkable chemical properties of water—the ultimate solvent—have always impressed me. Today I choose to speak about water from my personal perspective and not necessarily in my role as director of the Interstate Stream Commission.

My life, not my education, trained me in water management. On the Public Utilities Commission I looked at adequacy of public water supply; as county manager of the rural/urban Santa Fe County water was a central issue in my work, as it also was when I served as utility director for Santa Fe County and later as land use manager for the County. Clearly, land use hinges on water and its availability.

I grew up in Peñasco, the center of the universe. I am a *parciante*, an *acequia* irrigator, and I serve on several *acequias*. Every spring the *parciantes* get together and clean the *acequias*. This labor pool is what keeps the *acequias* functional. They've been around for hundreds of years and are a focal point of New Mexico community. I am also the president of the Peñasco Domestic Water Users Association, which is entirely within the external boundaries of Picuris Pueblo, so I deal with transboundary issues on the very local level as well.

With my father I am a small-time rancher. I have been a fisherman and I have pulled a salmon out of the river and eaten it on the bank. I grew up on the Santa Barbara

River, which is not more than 20 feet across, and I spent all summer fishing, swimming, and hiking around the Pecos Wilderness. I floated down a mile-wide river in the Yukon, and lived to tell about it.

Water plays a central liturgical role in my religious tradition, as in all others. In my daily life I drink water; I bathe; I wash my clothes. My relationships with water are not homogenized. The *acequia parciante* may be in conflict with the Santa Fe land and water manager. The professional who is committed to efficient and equitable use of New Mexico's water may be in conflict with the fisherman who hopes to catch a Rio Grande cutthroat trout, soon to be listed as endangered.

Making sure we preserve environmental qualities depends on our developing trust with one another. The only way to do that is to recognize that the various perspectives we bring are valid: Water is life, water is community, water is sacred, water is fun, water is money, water is property. It's incumbent on us to recognize there is no one view about this, and the perspectives others value highly shouldn't be set aside with "My view is the right view." Too often we don't allow ourselves to develop the trust necessary to work on resolution of issues.

That's our challenge, and I hope we're up to it—Though there are conflicts between water values and uses, they're all valued. How can we put them in order, or on the same level, in sharing our water?

An agricultural perspective on water

I grew up in Caspar, Wyoming and I'm here to talk about water from the perspective of agriculture, and from my own perspective, which is necessarily broader. I am executive director of the Northern California Water Association. Northern California is the area of origin for California water supplies, with 2.5 million irrigated acres, six national wildlife areas, cities and universities. Water is life's blood in northern California just like New Mexico.

In the early 1990's California was in drought—it seemed choices would have to be made between farms, refuges, cities, and fish. Agriculture faced the possibility of deep losses. The Glenn-Colusa Irrigation District, the largest irrigation district in northern California, recognized that the old way of doing business in the Sacramento Valley wasn't good enough. They cleaned house, found new directors and a new attitude. It was a major cultural change, a recognition that "mine vs. theirs" was no longer viable.

At this time state and federal agencies claimed that certain Sacramento Valley water rights holders must either stop diverting or release water from storage to help meet water quality standards in the Delta. These senior water rights holders did not believe their uses contributed to the water quality problems. This seemed likely to become the biggest water rights dispute in the country, involving a minimum of ten years of litigation and judicial review.

But the Glenn-Colusa Irrigation District's new leadership initiated meetings between the mutually embittered northern and southern water users to look for a settlement, and together they hammered one out. One hundred entities from northern and southern California went together to the Water Resources Control

Board (WRCB) with the Sacramento Valley Water Management Agreement. No one had dreamed the day would come when northern and southern California would come before the WRCB asking for the same thing! The Agreement manifested a culture of success. No one was thinking failure. No one wants to go back to the same way of doing things.

I offer six themes we might think about during the next days:

Fighting: Litigation can be valuable; looking for alternatives to litigation shouldn't itself be a goal. The objective is to spend less time in court and to go there to achieve a specific outcome, which is developed outside the court and validated by the court.

Values: All values are important and all require respect. When we understand the values of those across the table we can see our way through. We get this understanding sitting in coffee shops, and in meetings like this.

Art: Good water rights settlements are art. I'm a geologist, but I have not found science to be very helpful in these disputes. I admire artists, who know the rules and how to break them and how to work within them.

Failed promises: It is essential to understand that failed promises don't get us anywhere. We need art to find an effective way to secure the lost objective.

Growth: There are 35 million people in California, and 600,000 are added every year. There are "no-growth" perspectives, "pro-growth" perspectives. We need a more honest approach.

Leadership: You're here because you are leaders. The water world is dense with fiefdoms. When we find the leaders in those local fiefdoms it's amazing how effective we can be. I look for those who have the confidence, leadership, and trust of their communities.

Business as usual is out. We have some commonalities, and we need to find them and focus on them.



Since January 1999, David Guy has been executive director of the Northern California Water Association, whose mission is to promote economic, social, and environmental viability of northern California by enhancing and preserving the water rights and supplies of its members. He also serves on the California Bay-Delta Public Advisory Committee.

A business perspective on water



Maria O'Brien is a member of Modrall, Sperling, Roehl, Harris and Sisk's Natural Resource Department. Because of her broad experience with business clients seeking permitting on water projects and secure water rights, she was asked to speak on business' perspectives on water. Prior to joining Modrall, she was law clerk to the Honorable James A. Parker of the U.S. District Court, District of New Mexico.

As a water lawyer I've been fortunate to work with a variety of interests—economic development interests as well as tribal and public sector clients, ranching interests, and businesses. The business community and business interests have an important role in developing water alternatives.

I am an east coast transplant of 16 years, the first in my family to live west of the Mississippi. Coming from some place where there is water in the air gives me an appreciation of aridity. Before studying for the law, I was a botanist. As a botanist I looked at the effect of copper and silver contamination on the sexual reproduction of brown kelp. I became more interested in finding solutions than defining problems.

At its best, a business development project can provide a significant benefit to the community in which it takes place. Reciprocally, a cooperative water settlement, especially of tribal claims, can provide tremendous benefits to business communities.

Litigation rarely provides a foundation for the ongoing cooperative collaborative relationships that are essential to taking a settlement into the future. The sacrifice of traditional interests to the new use of a business development is not a good business foundation. Complex technical and emotional issues underlie any development of a water resource. Who is entitled? Who gets to decide where the water resource gets allocated? But the very first question must be—where is our common ground?

Like tribes, municipalities, or irrigators, a business development needs a reliable, cost-effective, timely source of water. The agricultural and *acequia* communities want a reliable source of water to continue and preserve a valued way of life. Environmental advocates need a reliable source of water to support environmental needs. We need skills in finding the commonalities here, in building the bridges.

The words certainty and flexibility come to mind. How much of the water resource is available? For what period of time? We have large and largely unquantified tribal claims, which are unavailable and vulnerable. The partnerships which must form to enable business development will only happen if we can clarify who has the authority to decide. The *modus operandi* here has been competition for water, hoarding of rights by various interests. But competition often runs smack up against these interests. Voluntary agreements have been successful. The shortage-sharing agreement in the San Juan basin involves irrigators, the Navajo Nation, the Jicarilla Nation, municipalities, industry and commercial water users.

There is much to do to improve certainty and flexibility to allow mutually beneficial opportunities, to seek ways to enable economic and business development to proceed without permanently sacrificing traditional uses. Litigation and legislation both have roles here, but the necessary balance will be found in exploring the commonalities of interest.

A municipal perspective on water

When Mark Twain said, referring to the placer mining claims, *"Whiskey is for drinkin' and water is for fightin'."* he was about 50 miles north of Modesto, California.

I was asked to talk about municipal water and the values associated with it. Municipal water values are a mirror image of what you've heard from others about the need for reliability and long-term sustainability. We look for a market basket of water resources—we need to develop a balanced water budget, a mix of many sources, so as not to be vulnerable to failure in any one area. We need quantity, quality, reliability, sustainability and political viability. The "small p" political element is essential to any water settlement. Courts can give us a decision, but they can't give us political viability. Nor can they give us affordability.

When I worked for Phoenix, I participated in seven settlements in central Arizona. What do cities worry about? What do they look at? You can't forget the economic context. You have to worry about third-party impacts. The time-frame of impacts is crucial—we are governed by elected representatives who have one or two terms. I agree that litigation has an effective role. There are regional, state and national issues. There are environmental, social and economic impacts.

The municipal water user is a unique creature. We take a lot of water, but only about 1% of that water needs to be of drinking water quality. Another 10% has

quality requirements for industry. More than 80% of municipal water doesn't have to meet high quality standards. This feature of municipal demand will become increasingly important in the future.

In the end, I hope we can share our values. In that process I hope to see a change in some of the meanings of the words we use. Most of us were reared where the key words are 'prior appropriations', 'beneficial use', and 'ownership'. Successful settlements will change these meanings: ownership may become stewardship; exploiters may become conservators; adversaries may become partners; conflicts may become collaborations. These key phrases recognize the core political nature of the disputes.

Our success won't lie in settlement of disputes, but in implementation of those settlements. I hope that we will grow in understanding of the political climate in which decisions are made, and shift our balance toward the future—discover approaches that take care of our current problems while weighing them against the impacts on the future.



George Britton is presently deputy city manager of Modesto, California, and formerly served as deputy city manager of Phoenix, Arizona. He heads Modesto's Economic Development Team.

An acequia perspective on water



Paula Garcia is from Mora County and with her family operates a small-scale ranching and forestry business there. She is executive director of the New Mexico Acequia Association, a state-wide organization of *acequias* that promotes socially-just community development by protecting historical water rights of *acequias* and by strengthening local sovereignty and self determination. She is a member of the N.M. Water Trust Board and the N.M. State Land Trust Advisory Board.

“*Buenos días le de Dios.*” In my community, when someone is asked to speak, they say “*Te dan la palabra,*” “They give you the word.” Thank you for giving me the word today.

I’m from Peñasco Blanco, Vallecitos de Mora. I am director of the young New Mexico Acequia Association, which works for the survival of *acequias*. To understand why *acequias* are in a position where they have to defend their water rights, be aware that there are tens of thousands of *parciantes*, irrigators who have a share in a traditional ditch, a share which entitles them to water and requires them to labor to maintain the ditch. These *parciantes* are concentrated where rates of poverty are the highest, in the areas of highest Hispanic concentration.

The *acequia* carries water. It is beautiful. *Acequia* has both a physical and a political meaning. It’s the physical ditch and it’s the community that depends on the ditch. If you divert from the *acequia* you are in the *acequia* community, you belong to an *acequia*, you have a responsibility to participate, to clean the ditch. As when *acequias* were established years ago, the *mayordomo*, or steward, is still charged with getting scarce water to irrigators, depending on what’s available. There are elaborate customs to distribute water within *acequias* and between *acequias*. This distribution is called *repartimiento*, and it is a living and growing organism, as *acequias* are living and also ancient institutions with African origins. Here in

New Mexico the *acequia* is intertwined with interactions with Pueblo neighbors over hundreds of years.

On the *suerte*—the piece of land that you were allocated when the land grants were settled—each irrigator got a use right, which was considered a community resource. There were rules about that right, rooted in a legal tradition that predates the United States:

- Water is to be shared when scarce.
- Water is tied to the land.
- The right to use water is tied to responsibilities.

The first territorial law codified many *acequia* practices, including *mayordomos* and the *repartimiento*. Unfortunately, many of the communal lands did not fare well at this time, and went into federal or private ownership.

The 1907 water code was a mixed blessing for *acequias*; it gave *acequias* very senior and protected rights while setting the stage for transferability of those rights. It was not until the 1960’s when adjudications came that the problem of individualization became apparent. From the *acequia* perspective, adjudication is lose/lose. You can either adjudicate or lose your rights. It’s very expensive to stay in the adjudication.

People began to realize that there was a private ownership element of water rights. In the 1980’s water transfers made clear the threat identified in the adjudications. There was, for example, a transfer proposed in Mora. Word spread that someone had sold a water right. People protested saying “that water wasn’t theirs to sell.” This protest is unresolved in the courts.

Because of this issue, the New Mexico Acequia Association was organized to find ways to protect *acequias* from the force of the market. For *acequias*, water means self-determination. If we can retain ownership of water, we can play a vital role in the growth and independence of our communities.

The threat to *acequia* survival is two-pronged—the need to defend adjudications and the vulnerability to market forces. One response to these threats is *area of origin protections*. The ability to plan for our water future is vital to the survival of community. All communities need to plan for a water future. We shouldn't assume that growth of one community will come at the expense of another.

Another response is to provide a framework for local decision-making and conflict-resolution. A statute enacted in 2003, sponsored by New Mexico State Senator Carlos Cisneros, recognizes the authority of *acequias* to approve or deny a transfer of water out of the *acequia*.

We have talked about the need to fund implementation of settlements. Settlement *processes* need to be well-funded as well. These settlements should be approached in such a way that all parties can come to the table, especially where there is deep economic inequity.

A federal perspective on water



Dale Pontius is a natural resources attorney, presently with the Department of Interior Solicitor's Office, and formerly assistant solicitor for Land and Water. He served as staff counsel to Congressman Morris K. Udall's Subcommittee on Energy and the Environment and as executive assistant to Governor Bruce Babbitt when the Arizona Ground-water Management Act was adopted. He has also been conservation director of American Rivers and consultant to the Western Water Policy Review Committee.

I am here today speaking from the perspective of a staff attorney for the Department of the Interior in the Santa Fe Field Office of the Office of the Solicitor. However, these are my personal observations and I do not speak on behalf of the Department or any agency I represent.

My legal and policy experience with water issues includes a variety of different policy and legal positions in federal and state agencies and as a congressional staff attorney, working for non-profits, such as the Nature Conservancy and American Rivers, and as an attorney and consultant in private practice. I had some significant bosses and mentors during that time, including Congressman and presidential candidate Morris Udall, and Arizona Attorney General, then Governor and later Secretary of the Interior, Bruce Babbitt.

One of the lessons I learned about western water is that natural systems—our rivers and streams in the west—are almost always last in priority—last in line that is, to retain enough water to support the ecology of these systems. As most of you know, most of the surface flow (and ground water as well in New Mexico, as in some other states) has been appropriated for other uses. So we start from a perspective now of having to be very creative if we are to retain or transfer any water to sustain and perhaps enhance instream flows in these rivers and streams and riparian ecosystems.

I currently represent the Bureau of Land Management and the U.S. Fish and Wildlife Service in water-rights matters in New Mexico and parts of the southwest. This involves acquiring and protecting

water rights for wildlife refuges, like the Bitter Lake NWF near Roswell and the nationally famous Bosque del Apache NWF near Socorro, NM. And water rights for fish hatcheries—many of which now are rearing endangered species—in New Mexico, Oklahoma and Texas. Previously I worked on the famous litigation filed by environmental groups to protect the endangered Rio Grande silvery minnow from extinction. That was quite an education in the art of the possible under the ESA, given the power of cities and agricultural water rights interests. The final chapter of that struggle has not yet been written, but it is a classic case of western water conflicts.

To expand on my own “water perspective,” I would suggest that over time I developed a “conservation ethic” from my personal experiences that included time in the mountains and along streams, hiking and fly fishing. Estevan López mentioned a few minutes ago that to him “water is fun,” an astute comment that I think most of us would agree with. I once made a less-astute comment when I was leaving my job as policy advisor to Governor Babbitt in Arizona. When asked by a reporter what I would do next, I replied that I wanted to do a lot of fly fishing. When queried further about that answer, “What is it about fly fishing?” I replied “Because it is the most fun you can have standing up.” That of course appeared in the article. But being in a beautiful mountain meadow beside a clear stream full of trout does make one appreciate water in new ways.

I am reminded also of the eloquent comments about water by Ted Strong, a

member of the Yakima Nation, and the former director of the Columbia River Inter-Tribal Fish Commission. Ted was also a member of the board of directors of American Rivers when I served as conservation director of that non-profit in Washington DC and as southwest regional director.

I helped organize a conference in Santa Fe on water issues, with a special emphasis on Native American attitudes about protecting the natural systems. Ted was also a member of the President's Commission on Sustainable Development and spoke with great passion and about his experience as a Native American growing up on the Yakima where salmon were such an integral part of their culture. As part of the Commission's work, we traveled to Taos to listen to similar stories from that Pueblo's elders about how they related spiritually to their land and their successful struggle to protect Blue Lake. It was truly an incredible experience to hear these tribal elders speak from the heart about their attachment to the natural world.

I want to add just a few other thoughts in the time I have remaining. One, that we are still living with a mining law that is basically the same as when it was passed in 1864, when Ulysses S. Grant was President. This is by way of saying we have some very old laws and practices for dealing with our precious natural resources. And as we see the need to change these old ways, to reflect changing needs and values, it becomes more and more difficult to do so. In many respects, it

is a race against time that we are losing. It is true, consumptive uses of resources will continue, but there are limits to what should be allowed, and we need a better system of governance where these values can be considered more consciously. If we are going to rely on market systems to protect and restore our water ecosystems, we need to get serious about it and provide the resources and institutional structures to do so.

Another concern now apparent is the effect of long-term drought on systems that are already over-appropriated. Just a few years ago, the Colorado River basin states were still arguing over surplus criteria for that basin. Now they are struggling to patch together shortage rules as the reservoirs have shrunk to less than 50% of their capacity. What chance do our instream flow needs have in such a political and economic crisis?

There are many other water issues I have been involved in and observed during my career, like the lack of interest in conservation and providing financial and legal incentives for reuse of wastewater. For example, not many years ago a massive wastewater treatment plant was built near Tijuana to serve northern Mexico and San Diego. The billions of gallons produced by this resource is going into the ocean. I conclude by saying that for water, as for oil, conservation is really the only new source.

Emergence of LOVE
During the first decades of the 20th century, an intense passion for preservation soon swept up in Dauphin. The conservationist group was initially among the Males. Environmentalist principles such as conservation of all living creatures and organisms, regard of living within the reasonable limits, and opposition to

And of course, LCV supporters are desperate to secure the deteriorating health development, and

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The Conference Community

Membership of the Breakout Groups

A central exercise of the conference was small-group work on a hypothetical cross-cultural water problem. Planners wished to avoid slanting this small-group discussion by building in the cultural bias of our own water law. The hypothetical case was, for this reason, set in an emerging nation, “Ourplace,” which includes four cultural groups as well as a cross-cultural environmental movement.

Because “Ourplace” has not had a national identity, it has no water law, though the four groups have a history of practices and agreements which were partially laid out in the conference materials. The hypothetical tells that a recent referendum of members of all cultural groups and the environmentalists showed overwhelming support for formation of a unified independent government. A ten-year transition period was declared for the formation of the new government, and a Constitutional Convention with representatives from all social sectors will develop the legal and civic principles of the new nation.

On the first day of the conference, each conferee was assigned to a cultural group, and these groups meet in cultural caucuses to develop their group’s position on the rights and management of natural resources, particularly water, in preparation for the Constitutional Convention.

On the second day of the conference there was no small-group meeting, but each conferee was to seek out a member of each of the other cultural groups and find out what concerns were expressed in the other caucuses.

On the final day of the conference, conferees met in newly formed “constitutional convention committees” that included members from *all* of the cultural groups, to hammer out a consensus expression of the principles of entitlements to water and a sketch of the type of institution that might interpret these principles.

Much of the summary and quotes from the Conference Overview (page 3) was drawn from these small groups and their plenary reports. Members of the first-day cultural groups are listed below, with a brief bio.

An Excel file in which notes taken during these breakout groups are captured has formed the basis of much of these proceedings and is available for interested parties, along with electronic copies of the hypothetical, on the Utton Center website at <http://uttoncenter.unm.edu>

Highlanders

The Highlanders are an aboriginal hunting and fishing people of the Blue River highlands of Ourplace. Their ancestral home is the Green Mountains, an area rich in water and mineral resources.

David Benavides directs the Land and Water Rights Project for New Mexico Legal Aid. He represents low-income persons and *acequia* communities in gaining legal recognition for their water rights and their historic water-use customs, and advocates for the rights of *acequias* in various judicial and administrative proceedings. He lives outside of Santa Fe.



David Benavides

George Britton, deputy city manager of Modesto, California, heads up the Economic Development Team which deals with development, redevelopment, economic development, planning, engineering, utilities, infrastructure, and operations and maintenance. He was formerly deputy city manager of Phoenix.

Peter Chestnut represents Pueblo interests in the federal *New Mexico v. Aamodt* adjudication and the Rio San José adjudication in state court. Chestnut served as chairman of the Indian Law Section of the New Mexico Bar. He edited the 1991 and 2001 editions of the *New Mexico Tribal Court Book*.

Vickie Gabin is the special master for the U.S. District Court, DNM, in four northern New Mexico stream systems—Taos, Chama, Santa Cruz/Truchas, and Jemez, and in Western New Mexico for the Zuni River.



Eileen Gauna

Eileen Gauna teaches environmental and property law at Southwestern University School of Law in Los Angeles, and is currently a consultant to the N.M. Environment Department's Initiative on Environmental Justice. She serves on two environmental justice committees for the American Bar Association. Gauna has spoken at workshops, conferences and symposia on environmental law and environmental justice.



Steve Harris

Albert Hale, President of the Navajo Nation from 1995 to 1998, has been assistant Attorney General for the Navajo Nation and special counsel to the Navajo Nation Council. He is the former chair of the Navajo Nation Water Rights Commission. Born and raised in Klagnetoh, Arizona, Hale is now in private practice in St. Michaels, Arizona and serves as an Arizona State Senator.

Steve Harris is the founder/proprietor of Far-Flung Adventures, a river outfitter-guide company, and founder/executive secretary of Rio Grande Restoration, a non-profit streamflow advocacy group. He is active in regional and state water-planning forums and in the Middle Rio Grande ESA Collaborative Program's Water Acquisition and Management subcommittee.

Brian Parry is Native American Affairs program manager for the U.S. Bureau of Reclamation's Upper Colorado Region. Previously, he worked with the Western Area Power Administration of the Department of Energy. Brian has been a tribal council member for the Northwestern Band of Shoshone and a member of the Utah State Board of Education's Indian Education Committee.

Jacob Pecos directs the Pueblo de Cochiti's Natural Resources and Conservation Department, and is technical representative for the Six Pueblos Coalition for Water Rights. He administers capacity-building programs in waste diversion and utilities, and performs ongoing environmental, economic and cultural studies related to Cochiti Reservoir.

Peter Pino currently serves as Governor of the Pueblo of Zia. He is a board member of Education Fund, Inc., a subsidiary of the Council of Energy Resource Tribes, and a board member of Mesa Verde Foundation, as well as a member of the New Mexico Game and Fish Commission. Governor Pino is a graduate of New Mexico Highlands University and received an MBA from the University of New Mexico.

Shirley Solomon is co-founder of the Skagit Watershed Council, a not-for-profit with 41 members ranging from the federal government to local farming and fishing groups, whose mission is to restore functioning natural systems through voluntary participation. Solomon developed the Friendship Circle model to build understanding between Indian and non-Indian neighbors, elected representatives and key policy staff.

Hilary Tompkins was born in Zuni, N.M. and is an enrolled member of the Navajo Nation. Presently deputy legal counsel to Governor Bill Richardson, Tompkins was previously a private sector attorney representing pueblos and tribes on a wide variety of issues including tribal self-governance, water and environmental law, and general civil litigation.

Vincent Toya, tribal administrator for the Pueblo of Jemez, is a former governor and serves as *ex-officio* on most committees and boards on behalf of the Pueblo of Jemez.

John Utton, a partner in the Albuquerque law firm of Sheehan, Sheehan & Stelzner, P.A., focuses his practice on water rights administrative law and water planning; water rights litigation and adjudications; and land use planning and development law. Utton has taught seminars on advanced water law and natural resources writing at UNM's Law School.

Jennifer Wellman, hydrologist and Water Resources Division manager for the Pueblo of Santa Ana, conducts watershed monitoring and water resource planning projects which apply hydrologic principles to technical objectives in the context of a broad understanding of social issues and policy implications.



Vincent Toya



John Utton (and Son)

Valley Folk

The Valley folk are an aboriginal agricultural people of the Blue River lowlands of Ourplace. They live in one town and on 150,000 hectares of agricultural lands and have two diversion dams for irrigation. Located downstream of the other Ourplace communities, they are most likely to be water-short in drought or when upstream demands grow.

Michael Benson works for the Navajo Nation in Water Resources Management. He has been an active liaison between the Nation and New Mexico regional water planning initiatives and serves on the board of the New Mexico Water Dialogue. Previously, Michael worked in the private sector, specializing in public relations, Navajo reservation business consulting, and publishing.



Michael Benson

Michael Campana directs UNM's Water Resources Program. He does water resources research on developing countries, transboundary issues, and climate change. He works internationally in Honduras, Panama, and the south Caucasus, where he directs a six-country NATO-funded project. He is the president/treasurer of the Ann Campana Judge Foundation, a non-profit working in water, health, and sanitation in developing countries.



Michael Campana

Paula Garcia directs the New Mexico Acequia Association, a statewide organization of *acequias* that promotes socially-just community development by protecting *acequias'* historic water rights and by strengthening local self-determination. She is a member of the N.M. Water Trust Board and the N.M. State Land Trust Advisory Board. Garcia was raised in northern New Mexico where she and her family have a working ranch.

Ray Gilmore chairs the Navajo Nation Water Rights Commission. Ray has been branch chief of the Navajo Nation Business Preference Program, a member of the Navajo Nation Council, chair of the Navajo Agricultural Products Industry, the Navajo Film and Media Commission and the Navajo Tribal Utility Authority Management Board, and a member of the Navajo/Hopi negotiating team.



Callie Gibson

Callie Gibson, formerly Callie Gnatowski, is the field representative for Senator Pete Domenici on land and water issues, and serves as the Senator's liaison with major local initiatives such as the Middle Rio Grande ESA Collaborative Program.

David Guy has been executive director of the Northern California Water Association since January 1999. He works closely with the U.S. Congress, the state legislature and state and federal agencies. In 2001, David was appointed to serve on the California Bay-Delta Public Advisory Committee.

Estevan López was appointed to direct the N.M. Interstate Stream Commission by Governor Bill Richardson in January 2003; he also serves as the deputy State Engineer. He has been both county manager and utility director for Santa Fe County. A native of Peñasco, López serves on four New Mexico *acequia* committees and is president of the Peñasco Mutual Domestic Water Consumers Association.

Roger Madalena is a member of the House of Representatives for District 65 in the New Mexico State Legislature. In addition, he serves as the executive director for Five Sandoval Indian Pueblos Inc. and currently chairs the Tribal Water Negotiation Team.

Francis McGovern was among the first in the nation to write about and to use alternative dispute resolution (ADR) techniques to avoid or to improve the litigation process. Acting either as a court-appointed special master or as a neutral expert, he has developed solutions in most of the significant mass claim litigation in the U.S. McGovern is a member of the Duke University School of Law faculty.

Jerry Muys, the president of Muys & Associates, P.C. in Washington, D.C., practices public land, water resource, and environmental law, fields in which he has lectured and written extensively. Jerry has taught federal land and natural resources law at the University of Virginia Law School and water law at George Washington University Law School.

Cathy Newby is the Native American administrator for PNM's Government Affairs Department. She is charged with developing relationships with tribal leaders and expanding PNM's community outreach to New Mexico's 22 tribes who are valued PNM customers. A Navajo from Tohatchi, New Mexico, Cathy has 15 years of utility/tribal government-related experience

Alex Puglisi is the environment director for the Pueblo of Sandia, managing programs concerned with water resources, water quality, solid waste, bosque restoration, endangered species, and GIS. He has extensive experience with federal, municipal, tribal and state natural resources agencies as well as Los Alamos National Laboratories.

John Redlinger is presently special projects officer for the Bureau of Reclamation's Regional Office. He has worked for Reclamation on Colorado River Basin projects and issues for 28 years. His primary background is as a project/study team leader in water operations and planning projects.

Michael Schoessler has worked for the Department of Interior Solicitor's Office in Washington, D.C., Minneapolis, and Albuquerque, focusing on issues involving Indian water rights and ESA issues. He chairs Interior's Federal Negotiation Team on the San Juan River Basin, has worked on the *Aamodt* litigation and settlement efforts, and on ESA issues in New Mexico as well as Arizona.

Brian Shields was a founding board member of Amigos Bravos, for which he has served as both president and vice president and, presently, as executive director. He was born and raised in Barcelona, Spain and is fluent in Spanish, English, and French. Brian's multicultural perspective supports and informs his authentic cultural and geographical knowledge of New Mexico's rivers.



Jerry Muys



Alex Puglisi



John Redlinger



Michael Schoessler

Gallegos

The Gallegos, an agricultural/mercantile people originating in a region north of Ourplace, colonized the Blue River valley in the 15th century, building irrigation systems, villages, and churches. This community seeks water storage on the Blue River's upstream tributaries.



Conci Bokum

Conci Bokum directs 1000 Friends of New Mexico's Water Project. She is author or coauthor of several basic New Mexico water policy documents and served on the committee that developed New Mexico's *Regional Water Planning Handbook*. Conci is board president of the New Mexico Water Dialogue, a member of the *Jemez y Sangre* Regional Water Planning Council and of the Governor's Blue Ribbon Water Task Force.



Kyle Harwood

Jesse Boyd practices law in Santa Fe, New Mexico. Jesse received a certificate in Natural Resources Law along with his J.D. from the University of New Mexico School of Law in May 2003. In the years before law school, Jesse owned a successful environmental consulting business in Los Angeles.



James Hena

Susan Cottingham has directed the staff of Montana's Reserved Water Rights Compact Commission since 1991, directing the negotiation of five Indian water rights settlements as well as three other major compacts for federal reserved water rights. She has advised the States of Alaska and Washington on tribal relations and water adjudication, and speaks at conferences/symposia around the West.



John Jackson

Dede Feldman is a former environmental reporter and teacher who was elected to the New Mexico State Senate in 1996. She has been a member of the Interim Water and Natural Resources Committee for seven years, and is the sponsor of the Aquifer Storage and Recovery Act (1999) and the New Mexico State Water Plan (2003).

Kyle Harwood is an assistant Santa Fe City attorney with primary responsibility in land and water issues. He has a law degree and a Water Resources Masters degree from UNM. Kyle has been an environmental health scientist for Bernalillo County and a law clerk in the *Aamodt* litigation. He has consulted on Tasmanian water policy and represented municipalities, schools and individuals in private practice.

Elaine Hebard returned to school after practicing law for ten years and traveling for three, to focus on regional natural resource planning. She has worked on binational watershed management between New Mexico and Chihuahua, particularly in fostering a groundwater dialogue between Columbus, New Mexico and Palomas, Chihuahua and has been active in regional water planning in the Middle Rio Grande.

James Hena, former governor of the Pueblo of Tesuque and former chairman of the All Indian Pueblo Council, has been involved in tribal government since 1957 and has been active in the *Aamodt* litigation since it was filed over 35 years ago.

John Jackson is a member, tribal councilman, and current vice chairman of the Pyramid Lake Paiute Tribe. He has directed the Los Angeles Indian Center, managed a tribal enterprise, and served as tribal planner, and is presently the director of water resources for the Pyramid Lake Paiutes, working with the tribe's water issues and serving as liaison with federal agencies, the State, and private water interests.

Leonard Loretto is currently employed as the director of Public Works for the Pueblo of Jemez. He is a former Governor and serves as a Jemez Tribal Council member.

Marcia Macomber directs program development and coordinates research and education programs for the Universities Partnership for Transboundary Waters—an international consortium of universities. She has worked with the University of Michigan's Population, Environmental Change, and Security (PECS) Initiative, with the Oregon commercial ground-fish fishery, and with subsistence farmers in West Africa.

Stanley Pollack represents the Navajo Nation on all water rights matters including five general stream adjudications in Arizona and New Mexico. He is pursuing litigation and/or negotiated water rights for the Navajo Nation in Arizona, New Mexico, and Utah in both the Upper and Lower Colorado River basins.

José Rivera is a professor at UNM where he teaches graduate courses in public administration, community and regional planning, and water resources. He focuses on common property resources, traditional irrigation organizations, and mutual assistance societies, and is the author of *Acequia Culture: Water Land and Community in the Southwest* (UNM Press, 1998).

DL Sanders is chief counsel to the New Mexico State Engineer and director of the Litigation and Adjudication Program, in which he has worked for 14 years. He has responsibility for the prosecution of all New Mexico water rights adjudications and provides legal counsel to the State Engineer on all matters related to the supervision of water-rights administration in New Mexico.

Jerry Sherk has served as a trial attorney with the Environmental and Natural Resources Division of the U.S. Department of Justice, been a visiting scholar at the University of Wyoming College of Law, and a visiting professor at Georgia State University. Now in private practice, he is an adjunct professor at the University of Denver College of Law.

Jerald Valentine is currently a New Mexico State Court District Judge, presiding over the Lower Rio Grande Basin Adjudication. In addition to trial work, Judge Valentine is active in developing ways to streamline the court system and improve its efficiency. He is presently developing education materials for New Mexico's new water law judges.



Marcia Macomber



José Rivera



Stanley Pollack



Mr & Mrs DL Sanders

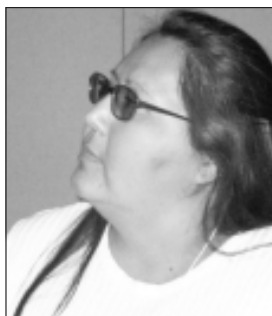
Marks

Originally occupying a military outpost during the 19th century, the Marks developed coal mining operations in the Highlands before the turn of the century, and established an urban center between the agricultural communities of the Gallegos and the Valley Folk.



Laura Rose Day

Jim Davenport, chief of Nevada's Colorado River Commission Water Division, has served as assistant Attorney General for Washington State, associate counsel for the Environment and Public Works Committee of the U.S. Senate, and Nevada special deputy Attorney General for siting of high-level nuclear waste repositories. His public and private law practice includes many areas of natural resources and regulatory law.



Johanna Emm

Laura Rose Day directs the Penobscot Partners coalition. With wide experience on federal and non-profit environmental coalitions, Day focuses her training in wildlife ecology and environmental and energy law on protecting the public interest in waterways. She and her family live in Hallowell, Maine near the Kennebec River.



Matthew Gachupin

Johanna Emm, water quality coordinator for the Yerington Paiute Tribe in Yerington, Nevada, is responsible for sampling/monitoring the Tribe's ground and surface waters for impacts associated with a nearby abandoned open-pit copper mine.



Sterling Grogan

Mary Helen Follingstad manages New Mexico's regional water planning program for the Interstate Stream Commission. Previously community planner for Santa Fe County, Mary Helen has served on the Santa Fe Historic Design Review Board, the Santa Fe Urban Policy Board and the board of directors for the Old Santa Fe Association. She was recently appointed to the Santa Fe Extraterritorial Zoning Commission.

Matthew Gachupin is presently 1st Lt. Governor for the Pueblo of Jemez. He is a Forest Service employee and assists with the natural resources programs. In 2005 he will return to the Jemez District Resources Program as a technician.

Sterling Grogan is the biologist and planner for the Middle Rio Grande Conservancy District. Specializing in the rehabilitation of disturbed ecosystems in the U.S. as well as Chile, Costa Rica, Mexico and Venezuela, Grogan is currently a member of the New Mexico Chihuahua Border Commission and the boards of the Quivara Coalition and the Rio Grande Nature Center State Park.

Dan Hurlbutt was designated presiding judge in the Order to determine venue of petition for general adjudication of water rights in the Snake River Basin in June 1987. In November 1987 Judge Hurlbutt lodged a Commencement Order establishing the beginning of what is now known as the Snake River Basin Adjudication. Judge Hurlbutt is retired but continues to fill in on the bench as a senior judge.

Fidel Lorenzo is director/liaison of the Haaku Water Office, which serves as the lead entity for the Pueblo of Acoma in all water matters including litigation. He has a very successful track record in setting things in motion with EPA and other organizations on water matters.

Robert Mooney is the chair of the water committee of the Pueblo of Laguna.

Dale Pontius is an attorney with the Department of Interior Solicitor's Office, and was formerly assistant solicitor for Land and Water. He has served as a congressional advisor and as executive assistant to Governor Bruce Babbitt during the adoption of the Arizona Groundwater Management Code. Pontius has also been conservation director of American Rivers and consultant to the Western Water Policy Review Committee

Hilario Rubio directed planning and zoning for San Miguel County for over ten years, and oversaw the first Mora/San Miguel Water Plan. Presently he is the State Engineer's *acequia* liaison officer, assisting participants with the adjudication of water rights in Northern New Mexico and helping *acequia* associations with governance, distribution and other issues. He is also president of the Las Vegas Land Grant Board of Trustees.

Gil Sandoval is a lifelong resident of Jemez Springs, New Mexico, a fifth generation descendent of Spanish settlers. He attended Colorado A&M in Fort Collins and has worked in a professional capacity for the Santa Fe National Forest for 35 years. He has been involved in the Jemez Basin adjudication of water rights since 1983 as chairman of the Jemez River Basin Water Users' Coalition.

Jeanette Wolfley's law practice focuses on Indian law, natural resources protection and environmental regulation. A Shoshone-Bannock tribal member, she has worked with the Native American Rights Fund, and served as general counsel for the Shoshone-Bannock Tribes, whom she continues to represent as special counsel on water rights. She is an adjunct associate professor at Idaho State University in the Indian Studies Program.

David Yepa is an enrolled member of the Pueblo of Jemez. He has practiced Indian law since 1987 in matters concerning water law, environmental issues, child abuse cases, taxation, land issues, housing, jurisdiction, protection of cultural resources and religious sites, and drafting ordinances and tribal codes for various tribal clients.



Mary Helen Follingstad



Fidel Lorenzo



Hilario Rubio



Jeanette Wolfley

Love

LOVE, Leave Ourplace's Virgin Ecosystems, is an environmental-preservation movement that emerged among the Mark communities during the 20th century, which attracted wide support from the aboriginal and Gallegos communities. Due to deep cultural differences, this multicultural preservationist alliance is loosely organized.



Sen. Carlos Cisneros



John Echohawk



Kara Gillon



Rhea Graham

Laurence Brown, a member of the Navajo Nation, manages tribal/government relations at Sandia National Laboratories. Brown's current responsibilities include state and tribal government interactions in various research and development programs that include water. He has a technical background with degrees in chemical and materials engineering.

Paul Chinana, currently Governor of the Pueblo of Jemez, also served as Governor in 1983 and 1995. He served as 2nd Lt. Governor in 1977 and has been a tribal councilman since 1983. He retired after 28 years from Los Alamos National Laboratories, where he worked with contractors for technical support. He is a member of the Jemez Tribal Water Negotiation Team.

Carlos Cisneros has served District 6, in Northern New Mexico, as State Senator since 1985. He is chairman of the Conservation Committee and vice chair of the Water and Natural Resources Committee (interim). In January 2005 he received the New Mexico Earth Science Achievement Award for his outstanding contributions advancing the role of earth science in areas of public service and public policy in New Mexico.

John D'Antonio was appointed New Mexico State Engineer by Governor Bill Richardson in January 2003. He also serves as secretary of the Interstate Stream Commission, chairman of the New Mexico Water Trust Board, and New Mexico Commissioner to the Rio Grande and Costilla River Compacts. John is a registered professional engineer.

John Echohawk directs the Native American Rights Fund (NARF), founded in 1970. NARF currently represents the Nez Perce tribe of Idaho, the Klamath Tribes of Oregon and the Tule River Tribe of California on water rights issues, and works with federal, state, tribal, and nongovernmental agencies and organizations to promote favorable Indian water-rights settlement policies.

Kara Gillon is water counsel with Defenders of Wildlife in Albuquerque working on water, endangered species, public lands in the Sonora Desert and U.S.-Mexico borderlands. She is a key member of their Lower Colorado River Basin Ecosystem Campaign, and represents the Alliance for the Rio Grande Heritage on the Middle Rio Grande ESA Collaborative Program's Steering Committee.

Lisa Gover directs the National Tribal Environmental Council's Superfund Research Program, which includes research on contaminated sites and federal facilities' impacts on tribal government resources. She has worked with tribal, federal, state, local and international agencies concerning tribal government issues related to environmental justice and other concerns.

Rhea Graham is water resources manager for the Pueblo of Sandia. She was previously the N.M. Interstate Stream Commission's first director of planning. During the Clinton administration, Graham served as director of the U.S. Bureau of Mines. She is a member of the National Research Council's board on Earth Sciences and Resources, and is a registered geologist and engineering geologist in Oregon.

Tom Kinney's Colorado and New Mexico legal practice focuses on water-rights adjudications and water-quality regulations. Before practicing law, Kinney worked as a hydrologist for the Wyoming State Engineer, a GIS specialist with the City of Albuquerque, and a geologist for the Army Corps of Engineers on a large power and flood control reservoir.

Michael Nelson is the settlement judge/mediator in New Mexico's *Aamodt* adjudication in Federal District Court. Before retiring, Judge Nelson was settlement judge in Arizona's Little Colorado and Gila River adjudications. Widely published in the area of Indian water rights, tribal law and tribal-state relations, Nelson has been active in education and training of state, tribal and federal judges.

Maria O'Brien practices natural resources law at Modrall Sperling, Roehl, Harris, & Sisk, P.A. She represents clients primarily in the water resource arena before the N.M. State Engineer, the N.M. Public Regulation Commission, and in state and federal court. Prior to joining Modrall Sperling, she served as law clerk to the Honorable James A. Parker, U.S. District Court, District of New Mexico.

Darrell Riekenberg is district counsel for the Army Corps of Engineers' Albuquerque District, where he is responsible for issues related to civil work, interagency, and military construction projects, operation of Corps reservoirs, and other federal activities in the District. His duties include interagency work on environmental and water resource issues including reservoir operations and compliance with interstate water compacts.

Peter Sly is author of the *Reserved Water Rights Settlement Manual*, which he wrote as director of the Conference of Western Attorneys General. He has spoken widely on legal ethics, water rights, Indian law, and is an active participant in the ABA Water Law Section. Sly recently moved his practice from California to Maine where he teaches Indian and natural resources law at Colby and College of the Atlantic.

Glenn Tenorio is a tribal member from the Pueblo of Santa Ana. He served as Lieutenant Governor during the Pueblo's 2003 Administration. Glenn is currently working for the Department of Natural Resources as the Water Resources Technician and enjoys the combination of fieldwork and water resource planning in his job.

Antonio Trujillo owns and manages a farm and vineyard in the village of San Fidel, N.M. President of the San José de La Cienega Acequia Water Association and vice-chair of the Association of Community Ditches of the Rio San José in Cibola County, Trujillo is also a board member of the Acoma Boys and Girls Club. Antonio was a Franciscan priest for ten years, serving as pastor for both Acoma and Laguna Pueblos.

Anne Watkins was appointed special assistant to the N.M. State Engineer by Governor Richardson in 2003. She directs the N.M. Drought Task Force, serves as legislative liaison, and coordinates water project funding and water-development planning as well as interagency collaboration on drinking water, water quality, and watershed issues for the State Engineer. She was previously Albuquerque's transit director.



Tom Kinney



Michael Nelson



Glenn Tenorio



Anne Watkins



Roberto Chené



Lucy Moore



Chris & Albert Garcia



Sharon Hausam

Conference Staff and Volunteers

Conference planners felt that the breakout groups' decision of how to run themselves would in itself be a community building experience, so the breakout groups were not facilitated. However, each group was assigned a "coach," a professional with experience in cross-cultural group work who was available to reflect back to the group on their process and to help with the interpretation of the hypothetical. All coaches were trained by the facilitation team, Roberto Chené and Lucy Moore. Each group was also assigned a recorder. Most recorders were law students; Michele Minnis, the assistant director of UNM's Water Resources Program, also took a role of recorder. The efforts of these volunteers are much appreciated.

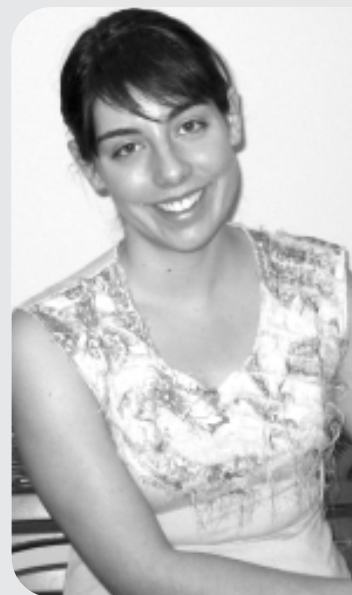
Facilitation Team and Coaches

Roberto Chené has deep roots and extensive experience in social justice work within the Chicano-Latino community. Roberto has himself organized and been part of various multicultural coalitions. He is currently consulting and training with several organizations committed to become more culturally competent and inclusive. He is a former co-chair of the National Conference on Peacemaking and Conflict Resolution.

Lucy Moore is a mediator, facilitator and trainer specializing in natural resource issues, who has worked with federal, state, local and tribal governments as well as public and private interests on endangered species, hazardous waste, water rights, air and water quality, forest planning, and school policies and regulations. Lucy is the author of *Into the Canyon: Seven Years in Chinle, Arizona*, a memoir of her time in Navajo country from 1968-1975.

Chris Garcia was co-founder with Lucy Moore of the New Mexico Water Dialogue. She has edited its newsletter, *Dialogue* as well as the State Engineer's *WaterLine* and is presently editor of the *Conservation Current*. She was a member of the planning team for the Utton Center's first Interstate Waters conference, and co-edited the proceedings for that conference with Michele Minnis. She is also editor for these proceedings.

Sharon Hausam is the economic development planner for Sandia Pueblo. She was the first executive director of the New Mexico Water Dialogue and has worked on the water plans for Northwest New Mexico and the City of Grants. Her dissertation topic in the University of Wisconsin Urban and Regional Planning doctoral program is "Native American and non-Native Interactions in Planning Processes."



Nicasio Romero is the current mayordomo of the El Ancón Acequia Association, and a past president of the New Mexico Acequia Association and the Health Centers of Northern New Mexico. He is a past board member of the New Mexico Water Dialogue, the New Mexico Acequia Commission, the Governor's Water Task Force and the New Mexico Community Foundation.

Blane Sanchez is the first pueblo/tribal member of the New Mexico Interstate Stream Commission. He has coordinated the Southern Pueblos Council Water Resources Technical Advisory Group and served as water quality officer for Sandia Pueblo and as director of the All Indian Pueblo Council Office of Environmental Protection. He lives on the Isleta reservation as a tribal member and has family connections with Acoma Pueblo as well.

Stephen Snyder is an attorney, mediator and policy-development consultant specializing in complex natural resources litigation. He is the special master for the Pecos and Lower Rio Grande Water Rights Adjudications. He has done training of judges, special masters, and stakeholders on mediation and complex case management throughout the western United States.



Nicasio Romero



Stephen Snyder



Recorders:

Kathryn Benz,
UNM School of Law
(photo middle left)

Paul Bossert,
UNM School of Law
(pictured standing above)

Darcie Johnson,
UNM School of Law

Geoff Klise,
UNM Water Resources Program

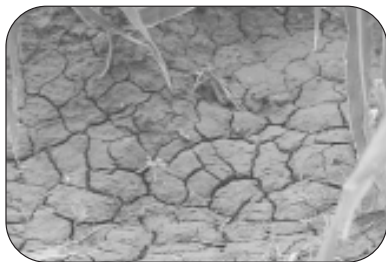
Marcos Martinez,
UNM School of Law

Michele Minnis, Assistant
Director, UNM Water
Resources Program
(pictured far left)

Jeanine McGann,
UNM Water Resources Program

Tom Ringham,
UNM School of Law

Rachel Winston,
UNM School of Law
(pictured above at computer)



Stills from the video, *Voices of the Jemez River*, produced for the conference by Mary Lance (New Deal Films, Inc.), executive producer and cameraman Tom Zannes, and Dale Kruzic, editor. They retain the copyright to the film and may develop it into a full-length documentary suitable for television. VHS or DVD copies are available for \$30 by contacting Dale Kruzic at dale@thunderprod.com or Tom Zannes at tzannes@efcrew.com.



A Community Agreement

Voices of the Jemez River

Hilary Tompkins, moderator

The opening panel of the conference brings together four of the major players in the Stipulation Agreement reached in 1996 as part of the ongoing federal adjudication of the waters of the Rio Jemez. These players include: John D'Antonio, the present State Engineer, who was the Albuquerque District Engineer at the time of the agreement; Peter Pino, Governor of the Pueblo of Zia; Paul Chinana, Governor of the Pueblo of Jemez; and Gilbert Sandoval, who represented the "Jemez River Water Users," a coalition of *acequia* irrigators which includes: Jemez Springs Ditch Association; Nacimiento Ditch Association; San Ysidro Community Ditch Association; Canon Ditch Association; and the Ponderosa Ditch Association.

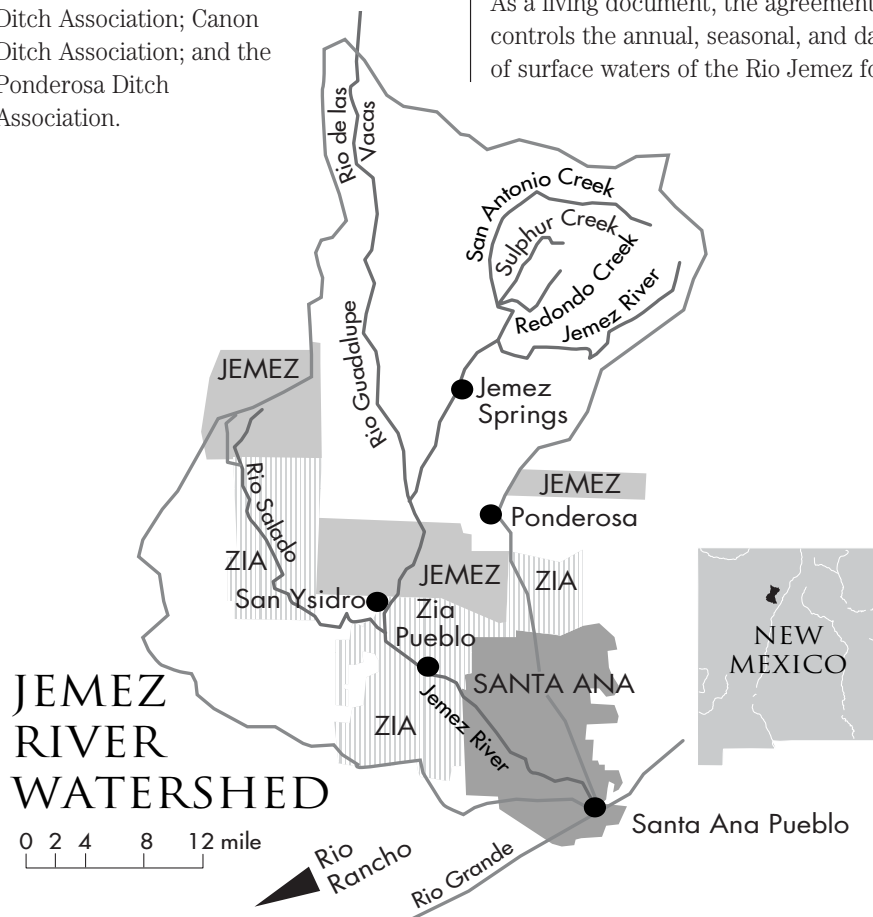
The Jemez River Adjudication is presently taking place in federal court under the title *United States v. Abouselman* (No. 83cv01041-JEC). For the history of the adjudication, the Stipulation Agreement, and details on the hydrology of the region, see *The Rio Jemez Background Papers on the Adjudication and Water Rights Issues* at http://uttoncenter.unm.edu/pdfs/Rio_Jemez_Background_Papers.pdf

The Stipulation Agreement

As a living document, the agreement controls the annual, seasonal, and daily use of surface waters of the Rio Jemez for



Hilary Tompkins is Governor Bill Richardson's deputy legal counsel. Tompkins began her law career as an honor program trial attorney for the U.S. Department of Justice in environmental enforcement, and later served as a special assistant U.S. Attorney for the Eastern District of New York, where she was lead counsel for a number of civil lawsuits in federal courts. Her private practice focused on representing pueblos and tribes as a general counsel.



irrigation purposes. It is a temporary settlement, pending a final decision in *Abouselman*, but it contains the expressed intention that it “may become part of a larger settlement of all issues.” A negotiating body of the parties is presently working towards this end.

What the Agreement Provides

The agreement asks for a neutral water master to see that its terms are complied with and the Office of the State Engineer has assigned a staff person to this job. It provides that all parties will agree to a “starting rotation schedule,” based on water-supply projections drawn from snow-pack and other observations, at a meeting in the early spring. Under the agreement, either Jemez or Zia Pueblos, who have the senior rights among the parties to the agreement, can ask that this rotation be modified at any time, in response to a water shortage. Any increase in irrigation days for non-pueblo water users requires approval of both pueblos. The ditch associations and their members agree not to withdraw any ground water for irrigation except in accordance with the agreement’s rotation schedule. Domestic (household) uses are not limited under the agreement. Adherence to the agreement is a duty of honor, though there are legal remedies to failure to comply. In fact, compliance is maintained by social pressure and periodic watermaster inspections.

Voices of the Jemez River

The Utton Center worked with filmmakers to create a video for the conference about the 1996 agreement and about the drought situation in the Jemez watershed that led up to it. The video beautifully tells the story of how the Pueblos and the non-Indian irrigators were able to reach an agreement to share river waters in times of drought. It also addresses the potential impacts of urban growth on the Jemez Valley. The video was shown at the conference immediately preceding the Jemez Panel.

The Utton Center would like to acknowledge the contribution of those who were featured in the video and who helped in the background, especially: State Engineer, John D'Antonio; Michael Garcia of the San Ysidro Community Ditch Association; Gilbert Sandoval, *acequia* mayordomo at Jemez Springs; Governor Peter Pino, Zia Pueblo; Governor Paul Chinana, Jemez Pueblo; Jim Owen, Mayor of Rio Rancho; Spenser Shaw, Office of the State Engineer; Governor Leonard Armijo, Santa Ana Pueblo; Bill deBuys of the Valles Caldera; Emmett Cart of Jemez Springs; and Pete Balleau, hydrogeologist.

The New Deal Films team and a fan: Mary Lance, Tom Zannes, N.M. Senator Dede Feldman, and Dale Kruzic



John D'Antonio, N.M. State Engineer

My involvement in this agreement came when I was approached by the participants collectively about the State providing a water master. The parties voluntarily accepted a water master, even without a specific court order, which is an unusual outcome. These neighbors worked together and understood how to share the water in times of shortage. They put together several options on a rotation schedule.

All the pueblo governors went to Washington to visit New Mexico's congressional delegations, seeking additional funding to do additional hydrologic work and develop information—groundwater studies, surface-water studies. They were all on the same page, going to congressional offices looking for support and the necessary resources. Because there was agreement about what was needed, it was easy to get approval.

William Toribio, the former governor of Zia, was with this group. He passed away last December. It was wonderful to work with Governor Toribio. The group had a very positive experience.

We could have a multi-year drought before us. We're going to have to manage our river systems. When an agreement is possible instead of the State going in and administering priorities, the agreement outcome has got to be preferable. We've done it on the San Juan, we go back every year, and it's worked well. At the same time, not all parties are prepared to share in this manner. *Acequias* and tribes are typically the senior water users on the system, and when there is the basis for working together to put some practical solutions in place, it makes my job a lot easier. Thanks!



John D'Antonio was appointed State Engineer by New Mexico Governor Bill Richardson in January 2003. John was the district engineer of the Albuquerque District during the time the Rio Jemez Agreement was negotiated, after which he served as chief of the Water Rights Division of the Office of the State Engineer. Before his appointment as State Engineer, John was Cabinet Secretary of the New Mexico Environment Department.

Governor Peter Pino of Zia Pueblo



Peter Pino served as Governor of the Pueblo of Zia at the time of this conference. He is a board member of Education Fund, Inc., a subsidiary of the Council of Energy Resource Tribes, and a board member of Mesa Verde Foundation, as well as a member of the New Mexico Game and Fish Commission. Governor Pino is a graduate of New Mexico Highlands University and received an MBA from the University of New Mexico in 1975.

It feels good to see a concept come to reality. This video has been in the making for a long time, and I've looked forward to seeing the final product. The video didn't show that sometimes it was the attorneys who were the obstacle to our reaching agreement. We had to throw out some of those attorneys to have meaningful dialogue. My message to the many attorneys here is "You have to listen to your clients sometimes." We don't have a crystal ball, we're not all-knowing, but we have lived with the situation.

Based on the agreement, we have been able to call on the water from the Jemez River. The sharing we're doing on the Jemez gives six days to the Indians and one day for the non-Indians. I wouldn't have thought that was possible. But we appreciate that. We're able to put harvested food on our tables for our families.

Our forefathers taught us not to depend on the grocery store's delivery truck. "Provide for your families," they said. How many of you can provide for your families if the grocery truck doesn't come? How many of you can catch small game and big game and put them on the table for your families, so that you can survive? Our forefathers taught us "Stay who you are. Don't become acculturated until you're like the mainstream."

The day we reached the agreement, we were before Judge Vickie Gabin and we asked one attorney after another to request a recess, and they wouldn't. But Gilbert Sandoval and I are country boys and we didn't know what was right or wrong as far as court procedures were concerned. Gilbert went up to his attorney

while he was addressing the judge so that he could ask for a five-minute recess. The judge gave us fifteen minutes, and we took thirty. We sent runners to bring back the mayordomos who were already leaving the parking lot. At the end of the recess we had an agreement and the judge smiled and thanked us for resolving the issue among ourselves.

When I went to college I was a shy reservation Indian. I felt at a disadvantage. Today I feel the others are at a disadvantage because they never got to grow up in their homeland and be taught by their elders what is important in life. Our elders told us "You will learn because you will have teachers." We are fortunate that the teachers were there. I want to tell the lawyers that you need to listen to your clients. Sometimes they will be your teachers.

For many years New Mexico used poison in the stream system to kill off the fish. If the kill wasn't 100% they went back and did it a second or a third time. Who gave us the right as human beings to make this decision on who lives and who dies? I told the Game and Fish officers "I like what you're doing here—you're eliminating all the foreign fish in the stream system, and putting back the natives. Maybe we should do that in America—eliminate all the foreign people here, and put back the natives?" He didn't think that was such a good idea. If it won't work with people, it probably won't work with fish.

We have the opportunity to learn different ways to get out of our ruts. It's going to take more than one of us to figure out the solutions. Law is but one tool. There are other tools: relationships, community, and communication.

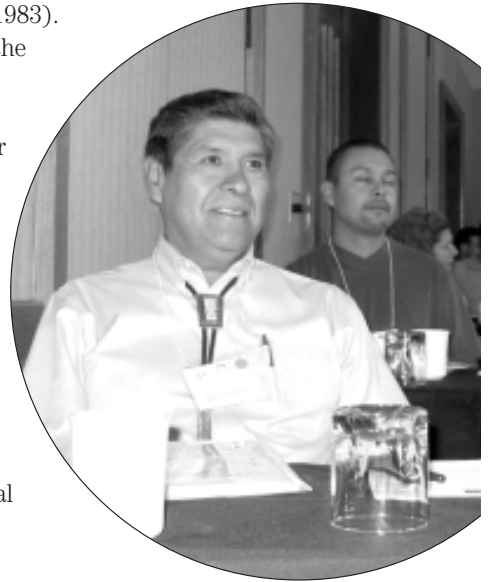
Governor Chinana of Jemez Pueblo

Good afternoon. We are talking about something everyone has a basic need for—water. That's why we're all here now and will be here for the next two days. I want to talk about the Pueblo of Jemez and the Rio Jemez, which starts at the Valle Caldera, and flows through Jemez Springs, San Isidro, Zia and Santa Ana. If there's any left, the water will flow into the Rio Grande.

The drought years have gotten us to a place where we need to work together, to share the water. As far as Jemez, Zia and Santa Ana are concerned, we have been communicating with each other and with Gilbert Sandoval who represents the communities of Jemez Springs and San Isidro. Communication is the key. We have started rotation systems, and as Governor Pino mentioned, non-Indians only have one day to use the water. We still have little problems. Jemez gets to use the water six days of the week. We've talked about how to keep everyone happy, and we've talked with the non-Indian water users and they've picked out the day when they can use the water. The issues that come up about sharing the water, resolving the disagreements we have, can be worked out by communication. We need to learn how to communicate.

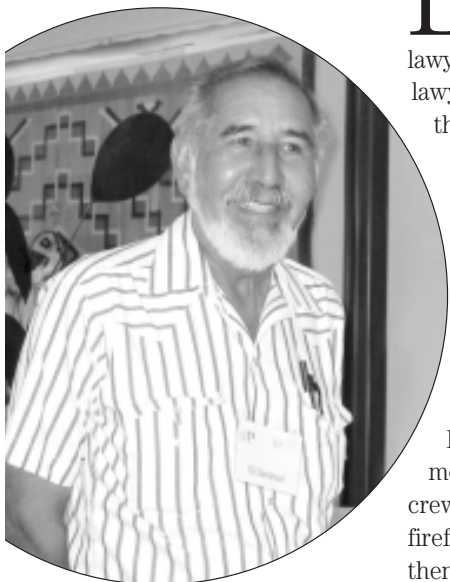
We have a good model with the Rio Jemez in *United States v. Abouseiman* (1983). We've been working together over the years. Back in 1992 all the parties made a trip to Washington to meet with the congressional delegates for federal funding. We were blessed with success. They gave us some funding to do technical studies for each community that is represented on this panel this afternoon, and since then we've been doing the technical studies.

Communication is the key. We've worked together; we've been successful in talking with the federal judges in Santa Fe to negotiate our settlement, and we are still communicating. The pueblos' representatives have all agreed we should go for the negotiated settlement instead of having a ruling by the judge. I am proud to say I have been working with the non-Indian communities and with the Pueblo of Zia and Pueblo of Santa Ana. Thank you for the opportunity to speak to you all.



Paul Chinana, Governor of Jemez Pueblo, also served as Governor of Jemez during 1983 and 1995 and as 2nd Lieutenant Governor in 1977. He worked at Los Alamos National Laboratories for 28 years, and is now retired. Governor Chinana is a member of the Jemez Tribal Water Negotiating team.

Gilbert Sandoval of Jemez Springs acequias



Gilbert Sandoval was born and raised in Jemez Springs. A fifth generation New Mexican, he lives today in the same homestead granted to his grandmother and her family by Spain. Mr. Sandoval has been chairman of the Jemez River Basin Water Users Coalition since 1983. Professionally, he has worked with the Santa Fe National Forest for 35 years. As a volunteer, he has served the Jemez Springs Fire Department for 25 years, been emergency medical coordinator for 15 years, and coordinated the search and rescue team for 10 years.

By now you are pretty familiar with why this agreement came about, how it was hammered out with lawyers. We live in the Jemez Valley; our lawyers don't. I had a lawyer joke, but there are so many of you here that I am afraid for my life.

I am more relaxed since we reached this agreement. I can relate to my neighbors without reservation. When the adjudication came about we saw the lawsuit as an action against us and that created an animosity with our neighbors. James Pino, Peter's father, used to be a Zia member of our joint fire suppression crew. My responsibility was to look out for firefighters' welfare, to get them fed, keep them safe. They were my neighbors, my people. I lived with them, I understood their culture, I understood their needs. When this issue came up that caused the division in our amity, it was hard to take.

The *acequia* parties decided to form a coalition to raise money, and the money to pay our lawyers came directly out of our pockets. Because of the misery of the drought in '96, we were ordered to close our ditch to serve the senior water rights of our tribal neighbors. We were lost. Not just Jemez Springs, but all the *acequias* on the Rio Jemez. Rather than turning to our attorneys to fight the temporary restraining order that bound us, we took the opportunity to talk with our neighbors. At the end of the day, we went to see the delivery systems on the reservations.

What happened there is one of the pillars of the four cornerstones on which I base my service to my people—understanding. I had never dreamed that the Jemez River would be dry. It was dry from the community of Cañon, south. We went to Jemez Pueblo, and there was no water there. The river was dry. At the Pecos Ditch diversion there was no water to divert. Dry. San Isidro—dry, no water. At Zia there was a trickle of water running down. I realized we no longer could divert water without realizing that people downstream had no water.

Then we hammered out the agreement and it was accepted by the judge. If we have near-average snowfall, we don't have to implement the rotation, we all have water. Water is so precious; people are willing to fight for it. They hold me accountable for my decisions. So when I explain the situation to my people, I tell them about the four cornerstones of my foundation for making the best decisions for the people I represent while maintaining amity, neighbor-to-neighbor.

The first is that we must go into the negotiation with *sincerity*. We have to have *understanding*, be intimately involved with the problems of others, and appreciate the bitter pill they have had to swallow. Then we need *determination*; we have to be determined to follow this through. Finally we have to have *commitment*.

John D'Antonio didn't tell you all that was involved in our trip to Washington. It was a fruitful trip, mainly because we showed

unity. We of the *acequias* didn't take our lawyers; the Pueblos did take their lawyers. When we got to Senator Domenici's office, I was one Mexican, with a bunch of Indians and some gringo lawyers. The Senator said "Didn't you bring your counsel?" I answered "No, I left my wife at home." He said, "I mean your attorney." "No," I said, "I couldn't afford to." And I decided if there was trouble I couldn't deal with, my attorney couldn't either.

Soon I'm growing old. I'll have to go home and do the honeydew jobs. When we hand it over and let the lawyers and judges do their bit, I hope they recognize that together

we have the courage and integrity to manage our resource, that we can share it, that we can defend it against urbanization and non-management. If we let those things go to waste, we will see the disastrous fires take over and destroy our resource, destroy our watershed's capability of producing our greatest resource—our water. The second thing we'll lose is the companionship of people, their confidence and dependence.

Thank you.

Discussion

Leadership and communication

John D'Antonio: What makes this work better in Jemez than it might work in other places is that Gilbert Sandoval has influence and respect in the sixteen *acequias* that are involved on the non-Indian side. It's very unusual for one person to influence that many water users. In the Navajo Nation settlement, with a great variety of water users on either side, reaching agreement is very challenging.

Governor Chinana: We look at how our grandfathers worked it out in the same place on the same system. Sometimes the *acequias* call my office and ask me "It's an off-day for the non-Indians, but we need some water. Can we have some water?" If we don't need the water that day, we'll look the other way. Then they cross over our boundaries, they open the gates and they take the water. If we don't need it, then

they use it. It's a gentleman's agreement. We don't outright talk about it, but we turn the other way when the neighbors need water. So long as they let us know, it's something that we can do.

Effect of introducing urban demand

I was interested in the statements on the video by the mayor of Rio Rancho. How will that shortage-sharing agreement hold up under pressure to send water to Rio Rancho?

There is such a proposal—to fallow 120 acres in San Ysidro to offset Rio Rancho's pumping. Letting 120 acres lay fallow makes a difference in a number of ways. That owner will not be contributing to the work of irrigation, and it decreases recharge

as well. The biggest future factor is that parties may give water away—well, they won't give anything away, it's a million-dollar deal—but they may reallocate the water from those 120 acres, which will be subdivided for domestic use.

How would the actual transfer affect the shortage sharing agreement?

John D'Antonio: It's not clear, but the State Engineer will look at impairment. All that could be transferred off the land would be consumptive use of water. If the transfer is appropriately limited to consumptive use, there would be no impact on the shortage-sharing agreement.

Instream water rights

New Mexico does not have instream water rights. Are there actions in process to bring about instream water rights?

John D'Antonio: Though we don't have instream water rights, there is an Attorney General Opinion that instream rights are consistent with our system. We have been able to require federal agencies to lease or purchase water for a given year to offset the impact of federally-imposed minimum instream flows on the system, particularly the impacts on our compact deliveries. Essentially, we have established an instream-flow use by allowing the government entity to lease water to provide minimum flows.

It is the position of New Mexico that when there is a direct clash between endangered species requirements and the Rio Grande or Pecos River Compact obligations, the endangered species has to share in the shortage also. The Biological Opinion on Rio Grande water operations has allowed

some drying in recognition of that principle that shortage must be shared. Over 8,000 minnows have been salvaged from those dried areas and propagated in captivity.

Spiritual dimensions of water

Governor Pino: We can't make rain.

Powers beyond us do that. We believe that if you pray for water and pray for rain, it will come. The communities in the Rio Jemez and Rio Puerco drainages pulled out of the Middle Rio Grande regional water plan so that we could do our own planning. We especially wanted to say that we give water spiritual and cultural importance. Every time we go out on field visits to talk about water, it rains on us. This makes us feel we're doing the right thing and we're rewarded by the spirit world. Prayers are important – it seems the more education and money we get the less religious we become.

As Zias, we believe that power is in prayers. When you go to Acoma all those dancers are dancing for rain—the hope is that dance will be rewarded by rain. You, too, need to do this in your own ways, however you feel that's appropriate. We all need the blessing of one another's prayers—it doesn't take money, it's free—we can all do it. Water does not belong to anybody. Land does not belong to anybody. I am hoping you can share your prayers with the spirit world so we all can share the blessings.

Examples of Successful Water Allocation Collaborations

Peter Sly, moderator

In several conference calls and e-mail exchanges prior to the conference members of the panel decided to lead off by describing their work, their personal histories, and the ways in which their current efforts have yielded success, and to go on to discuss how we measure success, what issues can be successfully addressed, and how to sustain the settlement in implementation.

Sly introduced himself by saying that he has represented states, the Conference of Western Attorneys General, cities, ranchers and environmental groups; he has never represented a tribe, though not by choice. Identifying one type of “success,” Peter described the “7/10 process” on the Colorado River Basin, which brought a partnership of ten major tribes into negotiation with the seven states in the basin. “Success” in this case was to establish the negotiation process. Sly represented Nevada cities with an urgent growing need for an assured municipal water supply. Nevada successfully began discussion of potential off-reservation water leases with the tribal partnership. While this process has yet to lead to water transfers, the “success” of this effort was

to create a new process for substantive discussions between Colorado Basin tribes and states.

Peter also described a process that was not successful. He represented non-Indian ranchers in an effort to negotiate a settlement for water use and the administration of rights among the Indian and non-Indian irrigators on the Flathead Reservation of the Confederated Salish and Kootenai Tribes in Montana. A series of lawsuits had created an interest in reaching a negotiated settlement, but the negotiation could not get beyond the fights over tribal jurisdiction and control over non-member water use. It became a battle over turf and control, and was derailed.

Peter concluded “I have thought a good deal about how we measure success. Perhaps I would look at whether the grandchildren of all the people involved (not just those I identify with) will think we’ve done a good thing. When I hear success stories they often aren’t about money or even water. They’re about people.”



Peter Sly was an important contributor to the planning of this conference in addition to moderating this panel of participants in successful negotiations. As director of the Conference of Western Attorneys General, he wrote the *Reserved Water Rights Settlement Manual*. Sly recently moved his practice from California to Maine and is also teaching college courses on Indian and natural resources law at Colby and College of the Atlantic.

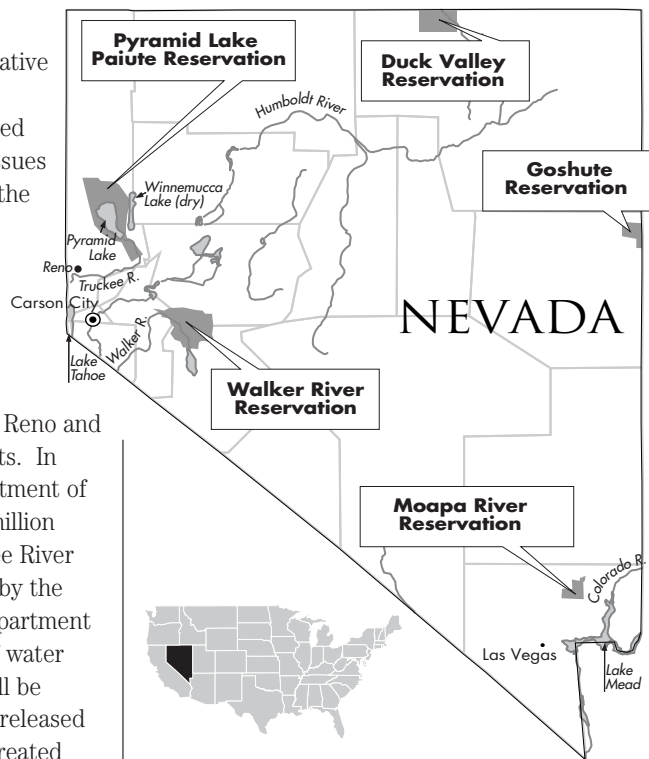
John Jackson, Vice Chairman Pyramid Lake Paiute Tribe

Truckee River Water Quality Agreement

John Jackson works with the water issues of the Pyramid Lake Paiute Tribe and serves as liaison with federal agencies, the state, and private water interests. He graduated from the University of Nevada at Reno. For five years John directed the Los Angeles Indian Center. He then managed a tribal enterprise for five years and served for five years as tribal planner. He has presently served eight years as the director of water resources for the Pyramid Lake Paiutes. He is also a tribal councilman.

After decades of lawsuits, negotiations, and administrative actions, the Truckee River Water Quality Agreement was signed in 1996, settling some important issues related to quantity and quality on the Truckee River and Pyramid Lake which are home to the endangered cui-ui and the threatened Lahontan cutthroat trout. Under the agreement the Pyramid Lake Paiute Indian Tribe dropped its lawsuits regarding the Reno and Sparks wastewater treatment plants. In turn, the cities and the U.S. Department of the Interior agreed to spend \$24 million over five years to purchase Truckee River water rights, with the cost shared by the cities, Washoe County, and the Department of Interior. The 24,000 acre feet of water expected from these purchases will be stored in upstream reservoirs and released during low-flow periods to dilute treated effluent discharges from the treatment plant and to provide more water for Pyramid Lake, a closed system into which the Truckee River flows. The Pyramid Lake Paiute Tribe manages the lake and 25 miles of the Truckee River.

Through this agreement, Jackson said, the tribe has moved from seeing Truckee irrigators and the other upstream water users, including municipalities, as *opponents* to seeing them as *partners* in protecting the Truckee River. Litigation to improve water quality for the Lahontan cutthroat trout has been pending since 1984. It's expensive to litigate, and outcomes are uncertain. The Department of Interior and the cities each put up \$12 million to buy water from the Newlands Project which supplies Churchill County irrigators. They determine irrigation needs



for the year, and the Bureau determines how much water will be taken from the Carson River for that demand. Water rights from the Truckee are purchased during the summer months when needed. The 4,500 acre-feet of water was bought from willing sellers in Newlands and dedicated to the Lower Truckee River through the Nevada State Engineer office.

For John, success is measured in the attitude of tribal membership. There is flow in the Truckee River right through the Pyramid Lake reservation. People who live along the Truckee River see it every day. If the river has good quantity and quality, if there's a good canopy, they see that and they think the tribe has been successful, and so does John.

Montana Reserved Water Rights Compact Commission

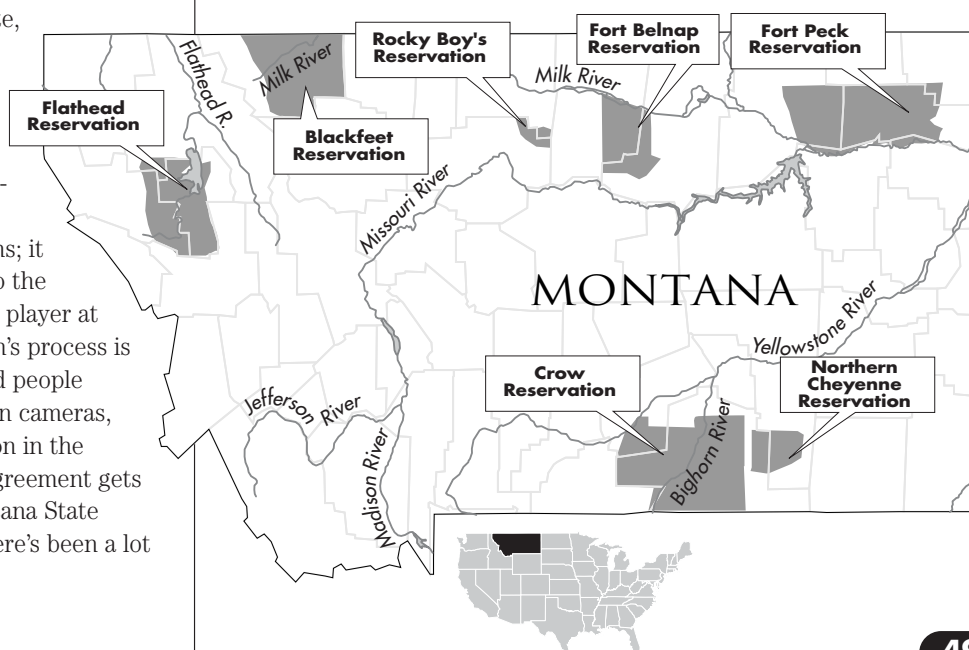
Susan Cottingham opened with a brief history of Montana's Compact Commission. The nine-member Commission was created 25 years ago by the legislature, when it was very uncertain whether reserved water rights would be litigated in state or federal courts. Montana hoped to negotiate rather than litigate. The process began naïvely. The Commission was originally created for three years and told to "Go forth and settle." But settlement was much more complex than that. The availability of good technical support from legal and political experts, hydrologists, and agricultural scientists who understand the information needed for tribal allocations has helped a good deal. The most important part of the negotiations is practical: How will we live in the same watershed? Do we need to develop new supplies?

Montana is somewhat unique because negotiations have been sovereign-to-sovereign between the state, the United States, and the tribes; other settlements often have multiple parties at the table. The tribes find the government-to-government structure important in the discussions; it elevates the negotiation, so the Tribes are not just another player at the table. The Commission's process is open, with several hundred people present as well as television cameras, involving the public early on in the process. By the time an agreement gets to the first step—the Montana State Legislature's approval—there's been a lot

of interaction. There is demand for the inclusion of other stakeholders. Non-Indian irrigators at Flathead, for instance, have gone to the legislature twice to get a seat at the table; but the legislature hasn't opened the process to non-sovereigns.

Susan noted that while there are some concrete measures of success in negotiation—"We got 'this' through the legislature; we avoided litigation; we got 'that' much money"—the negotiation is really a means to an end. The end is better dialogue between the Indian nations and their white neighbors; to come out of a hostile situation with people who are working together. The work of cultural understanding and education, she said, is the most demanding as well as the most rewarding.

Susan Cottingham has been staff director of the Commission since 1991. The Commission's nine-member staff develops legal and technical background for the complex Indian water rights settlements and compacts for federal reserved water rights held by the National Park Service, Bureau of Land Management and the U.S. Fish and Wildlife Service. She is a member of the Ad Hoc Group on Indian Water Settlements, a national coalition.



Jeanette Wolfley, Shoshone-Bannock tribal member and legal counsel

Fort Hall Water Rights Agreement

Jeanette Wolfley was an attorney with the Native American Rights Fund when she was asked to return home and help finalize the 1990 water agreement between Idaho and the U.S. in the Snake River Adjudication. She has served as general counsel for the Shoshone-Bannock Tribes and continues to represent them as special counsel on water rights and other natural resource matters. She is an adjunct associate professor at Idaho State University in the Indian Studies Program.

Jeanette came into the 1990 Fort Hall Water Rights Agreement when it was still in negotiation, near finalization. The tribal governing body was concerned that the tribal membership did not understand and would not approve the agreement. Her task was to help finalize the agreement by educating the community about the importance of the water agreement so that it would be approved. The agreement was approved by the tribes and enacted by Congress on July 18, 1990.

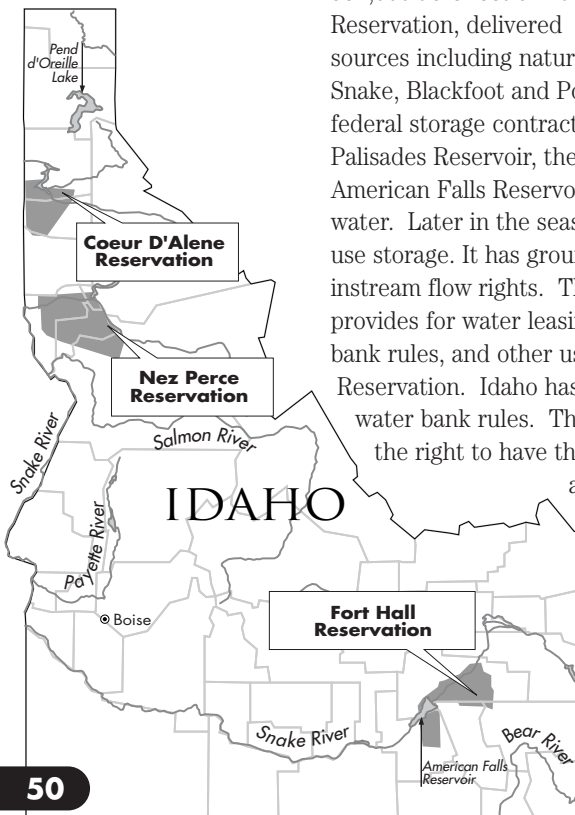
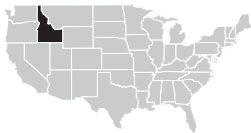
Fort Hall was originally 1,800,000 acres, a much larger reservation. Land was ceded over time, bringing the reservation to its present 544,000 acres, 96% of which is trust land. The agreement provides for 581,000 acre feet of water for the Fort Hall Reservation, delivered from various sources including natural flows from the Snake, Blackfoot and Portneuf Rivers, federal storage contract water such as Palisades Reservoir, the Blackfoot and American Falls Reservoirs, and ground water. Later in the season, the tribe may use storage. It has ground water and instream flow rights. The agreement provides for water leasing, sets out water bank rules, and other uses for water on the Reservation. Idaho has a water bank and water bank rules. The tribes negotiated the right to have their own water bank and rules to allocate surplus water for leasing purposes. The tribes were approached by many off-reservation entities, particularly federal entities. Reclamation

leases 3,000 acre feet a year, particularly when they need to augment flows for species of fish listed under the ESA. The tribes have also had leases for irrigation.

In the Idaho negotiations it was important to be very open and candid in discussions and negotiations. Once you reach a level of comfort where you can be candid, you can move forward. The tribe saw the negotiations as informal as well as formal—formal with the lights and cameras, informal in a restaurant over food. Partnership building was important.

Some of the provisions of the agreement were very creative. Since that time other agreements have gone forward with similar provisions. The Fort Peck and Shoshone-Bannock agreements were made, and then there was a long time when no agreements were negotiated. Currently, there are some new agreements before Congress. The Fort Hall Agreement specifically included funding for implementation. This was correctly considered an essential element for success.

Jeanette would measure success, she said, in a way very similar to John Jackson's. The Shoshone-Bannock Tribes chose Fort Hall because of its water. They had for thousands of years camped in this area in the summer and fall, and were very aware of water there. Success for this agreement is community acceptance, which requires that community members feel satisfied that what was negotiated in the Fort Bridger Treaty of 1868 reserving the homeland is still being met today and that there is a guaranteed plentiful supply of water for present and future community needs, from spiritual needs to irrigation for the tribal membership.



Laura Rose Day, Director of the Penobscot Partners

Penobscot Partners

Penobscot Partners includes the Penobscot Indian Nation, Atlantic Salmon Federation, American Rivers, the Natural Resources Council of Maine, Maine Audubon, and Trout Unlimited. Its objective is to restore a free-flowing character to the lower Penobscot River by removing two dams and decommissioning another.

While the project is legal in nature, Laura observes that most issues concern relationships rather than law. Early in her career she became interested in finding ways to integrate laws which apply to particular environmental resources—land, water, air—to get amelioration. She uses a “multimedia approach,” looking at all statutes that apply to a compliance issue.

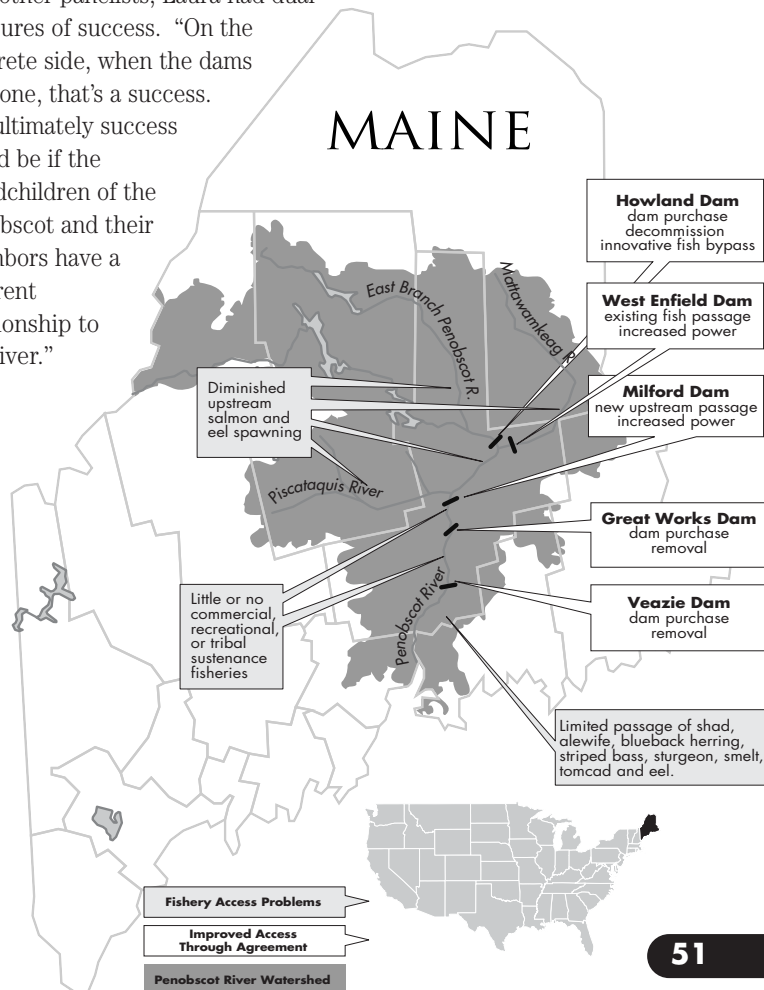
This conference has reinforced her previous feelings that though the eastern and western states have very different systems, we look at very similar issues; issues which have much more to do with communities and relationships than with water law and statutes.

The flow of the Penobscot River is about 13 million af/year. (To appreciate the scale, recall that the flow of the Colorado is about 15 million af/year.) It drains 8,750 square miles, or 1/3 of Maine. It is also the spawning ground for the Atlantic salmon, and habitat for shad, alewife, blueback herring, American eel, short-nosed sturgeon, rainbow smelt, striped bass and tomcod. But access to the spawning grounds and habitat for these sea-run fish has been progressively restricted by hydropower dams, with corresponding declines in fish populations as well as frequent contamination incidents. The Penobscot Indian Nation has been unable to exercise its treaty rights to fish for the past 100 years. The fish in the impoundments behind the dams are contaminated, and in any case, can't reach the reservation.

A large-scale multiparty agreement was reached in October 2003 and filed in the summer of 2004, providing for the purchase of the three dams from PPL Corporation, which will also have the right to increase its energy output at other hydroelectric projects in Maine. It will significantly improve access to over 500 miles of river habitat, allowing for recovery of native varieties of sea-run fish. It will also strengthen the river's ecological connection with the ocean, helping feed fisheries and wildlife in the river and the Gulf of Maine.

Like other panelists, Laura had dual measures of success. “On the concrete side, when the dams are gone, that's a success. But ultimately success would be if the grandchildren of the Penobscot and their neighbors have a different relationship to the river.”

Laura Rose Day is trained in wildlife ecology and environmental and energy law. She began her career with EPA in Chicago, working with industrial communities on environmental equity issues involving steel mills and paint factories. Laura has also served as manager of the National Wildlife Federation's Lake Superior and Biodiversity Project, and as water-shed project director for the Natural Resources Council of Maine.



Silvery Minnow Wins Ri

from PAGE A1

and taking it," Herkenhoff said. "I spent 50 years of my life building what's down here."

The conservancy district does not believe the Bureau of Reclamation

SILVERY MINNOW'S DWINDLING RANGE



THE CURRENT RANGE: The Rio Grande from its Elephant Butte Dam to its mouth.



THE SANTA FE NEW MEXICAN

Friday, April 9, 2004

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Managing Editor

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State Supreme Court confronts water scarcity

To New Mexico towns and cities indulging in expansionist building benders, our state Supreme Court has just issued some sobering news:

There's no out takes to supply new growth. The court has been re "pueblo rights" doctrine aren't the state's 19 districts rather, the term is the Spanish and Mexican land the water they needed. Under the Treaty of Guadalupe Hidalgo, which the United States Mexico, people's speed But, as Justice Patricia decision, towns' right indefinite future wet come in for absolute

Nonetheless, the rights doctrine part. Over the years it quia rights claimed — notably in the River and other str Our ditches are cropping up in Las tion members. To response; we're al small we once we The high court week's decision, rights doctrine, ally expanding n think it gave the There's too m beneficial and e servation — to ment.

Department attorney w

The Supreme Court sent the issue back to district court, where — with luck — the city, the acequias and the State Engineer's office can find a way to fairly share what water comes down off the Sangre de Cristo.

The decision might not be on "all fours" with other water-claims conflicts — for example, Greater Albuquerque vs. Santa Fe, for that matter, versus the

Deal disperses Colorado

The Associated Press

BOULDER CITY, Nev. — U.S. Interior Secretary Gale Norton on Thursday will have the following effects:

■ Have California adopt specific, incremental steps to gradually reduce its use of Colorado River water over the next 14 years to its basic annual allotment of 4.4 million acre-feet.

■ Provide Mexico, Colorado, Nevada, New Mexico, Utah and Wyoming with certainty on use of the river, allowing them to take their full allotments to meet future water needs.

■ Restore California's and Nevada's privileges to draw extra water from the Colorado River

to meet the needs of urban Los Angeles and Las Vegas, Nev. ■ Transfer as much as 30 million acre-feet of water from farms to cities in Southern California over the deal's 75-year term.

Colorado River water agreement

■ Settle a lawsuit between the Imperial Irrigation District and the Interior Department, which had accused the farm region of wasting water. ■ Launch an ambitious plan to reduce rising salinity in the Salton Sea, a man-made agricultural sump standing Riverside and Imperial counties that is an important stopping point for migratory birds.

■ Provide for 5 offset the erosion of the water body Imperial Valley at cost of restoring. ■ Fund a \$20 to live with one Multicultural Co-ery Colorado R Imperial Valley by building new San Diego. ■ Quantify the total Colorado River water California.

of the Los Angeles-based Metropolitan Water District. His agency, he said, would His agency, he said, would His agency, he said, would

Approval of the long-awaited deal restores California's privileges to draw additional Colorado water for 15 years. The Interior Department revoked those privileges when California missed a Dec. 31 deadline to reach a deal. Nevada, which was linked to the California deal, also lost 10 percent of its supply. With the new accord approved, Nevada will be allowed to draw water for fast-growing Las Vegas.

signature was the final authorization needed to implement the agreement.

Top officials from the four agencies attended the signing ceremony, along with

needs of the river, though going to be a lot more water on the table," said John Hov conservation director for est Guardians, one of plaintiffs in the case.

The Legal Community

Why Judges Decide the Way They Do

Judge Jerald Valentine, moderator

Judge Valentine prefaced the Judges' panel with a round of disclaimers, noting that every state has a code of judicial conduct. New Mexico's code, for example, states:

"A judge shall not, while a proceeding is pending or impending in any court, make any public comment that might reasonably be expected to affect its outcome or impair its fairness or make any nonpublic comment that might substantially interfere with a fair trial or hearing. ... This ... does not prohibit judges from making public statements in the course of their official duties or from explaining for public information the procedures of the court."

N.M. Code of Judicial Conduct,
21-001-B-10.

In keeping with that code, he urged that we be aware that nothing said here speaks to what any judge might decide in a case presently before him.

He opened the panel with a trio of quotes which spanned a significant slice of judicial history. The first was from the *Eumenides* written by Aeschylus in 458 AD. Athena pacifies the vengeful Furies who seek revenge outside of justice for the violation of law, urging them to accept "Fair trial, fair judgement," and to "Calm this black and swelling wrath."

The second was from an article found that morning, in the September 1st *USA Today* regarding the Kobe Bryant case. The editorial writer urged that the "judge should have compelled the victim to testify," and that "victims have the responsibility to testify."

Judge Valentine calls on Athena's position in the *Eumenides* as representing the courts as a forum for resolving conflicts without vengeance and without violence. The court cannot serve as prosecutor, as the enraged writer on the Kobe Bryant case would wish it to be. The court's role is to provide access to justice, as set out in his third quote from the 3rd Judicial District's 2004 strategic plan, which opens with the mission statement:

"The mission of the New Mexico Judiciary is to provide access to justice; resolve disputes justly and timely; and maintain accurate records of legal proceedings that affect rights and legal status in order to independently protect the rights and liberties guaranteed by the constitution of New Mexico and the United States."



Judge Jerald Valentine moderated the conference's final panel, which brought judges and other officers of the court together to look at how water cases are decided. Born and raised in Clovis, Judge Valentine received a B.S. in Mechanical Engineering from NMSU and a J.D. degree from the University of Texas. After over twenty years in private practice, Judge Valentine was appointed, and later elected, district judge for the Third Judicial District of the State of New Mexico. In addition to trial work, he focuses on developing ways to streamline the court system and improve its efficiency; he is presently developing education materials for New Mexico's new water law judges. Judge Valentine presides over the ongoing Lower Rio Grande Basin adjudication.

Strategic mediation in large lawsuits



Presently a professor at the Duke University School of Law, Francis McGovern has served on the faculty of many American law schools. He was at the forefront of the development of “alternative dispute resolution” or ADR techniques to avoid or improve litigation, and has served as special master or neutral mediator in many mass claim lawsuits. He says he is moved in his work by his concern about the public’s decreased faith in traditional government dispute resolution systems, and seeks avenues to make those systems work better in the sense of being more efficient and leaving the parties satisfied with the process and results.

Professor McGovern drew on the Snake River Adjudication, as well as several other large lawsuits he has worked with, to provide conferees with a conceptual structure for what judges and mediators do. Alternative processes can be employed for resolution of a dispute. The process that’s “right” is the one that yields truth at the end of the day. Strategic mediation, which Professor McGovern describes, is one process used by many judges and mediators. It begins with defining the parties and the issues to the mediation, which are related, but not necessarily identical, to the parties and the issues in the lawsuit.

Parties

In a lawsuit, the parties are defined by the judge and the rules of procedure; mediators have more flexibility. There may be parties with no standing in the lawsuit that the mediator wants to have at the table; conversely there may be parties to the lawsuit that you would rather not have at the table. In the Snake River adjudication, the parties met in both formal and informal forums, in a ratio of perhaps 25/75 formal/informal. One reason for that ratio was that there was a party that didn’t want a settlement. It’s important for those who want to settle to be able to talk without the nay-sayers at the table. But this option is tricky, for the settlement will have to deal with those nay-sayers. Any alternative the mediator chooses—whether it is accepting the parties as given by the lawsuit or expanding or contracting that group—is a decision, one to be made with the end of a successful resolution in mind.

Issues

Judge Hurlbutt’s decision on the Snake River concerned reserved water rights, but there were Endangered Species and Clean Water Act issues on the basin as well. The judge must address solely the legal issue before the court; a mediator, however, can bring in related issues if it appears they will help the parties to reach a settlement or that their omission will make a settlement, once reached, impossible to implement.

Procedures

There are standard models for how you proceed with a lawsuit, and mediation has standard models as well. To begin, you take the list of parties and issues; you meet with the parties jointly, and both make presentations. Then you separate them out and do some shuttle diplomacy, and proceed from there.

There are strategic decisions made about procedure as well. McGovern mediated *United States v. Michigan* 30 years ago, which was a case about who owns the Great Lakes. He recalled that a related litigation had taken place in Washington State recently. He invited the Washington litigants to Michigan to tell the parties about how difficult it was.

Discovery

There are strategic techniques for discovery as well. A model of fisheries was developed jointly by the parties in *United States v. Michigan*. That’s not in the rules, but the fisheries model was material in reaching a conclusion.

Snake River Adjudication

Parties: Professor McGovern presented a partial list of the parties to the Snake River Adjudication. It included the State of Idaho, the U.S. Department of Justice, the Nez Perce, the Shoshone-Bannock Tribe, 65 cities and municipalities, 22 irrigation districts, 15 water users' associations and/or canal companies, 16 corporations, 16 agricultural firms/ranches, and the Native American Rights Fund. There were individual parties as well.

This list raises a wealth of questions. First, of course, how to organize these parties? Since there were only 8-12 water lawyers in Idaho, one option was to do the negotiation with the lawyers. It was clear that this option involved risk. As Professor McGovern observed, lawyers want to send their kids to school just like everyone else.

Second, what to do about parties in Washington, Oregon, and Montana, and the four dams on the Snake outside of Idaho? Should this litigation be expanded or not? It was decided that this settlement had to be restricted to the State of Idaho. While there should be communication with the other parties, bringing all the parties to the table would be too much.

Issues: In the Snake River adjudication the necessary issue was water rights. But it would do the parties little good to resolve their water rights if they would be abrogated for endangered species. Here the decision was to expand the issues, to include these additional water claimants, the endangered species and water quality. This expansion changes the structure of power, and the mediator has to be careful how power is redistributed. Rule #1 for the mediator is "do no harm." In the end, the settlement addressed water rights,

water quality standards, and a Habitat Conservation Plan. This jointly determined the law and the facts to be addressed.

Facts and Discovery: Decisions can't be made in the absence of a certain confidence level. The Snake River is a salmon river, one that should be preserved in perpetuity. It was essential to get the information needed, and to work with the parties. Unlike normal rules of discovery, the focus here is on where to add information to make people confident that when they *do* stick their necks out, they won't get hurt. Mediation deals with the same variables as do the courts, but the mediator can put them together so as to enhance the possibility of settlement.

Procedure: The art of designing a strategic mediation is in how one proceeds on the issues defined with the parties identified. Should we use the standard model? Hold preliminary discussions, arrange joint session presentations? Are private caucuses needed? How these questions are answered both depends on, and determines, the mediator's techniques or style. The mediator may question, suggest, educate, propose solutions, evaluate claims, identify where the best the parties can do is "agree to disagree," lead "brainstorming" sessions, create "decision trees" to help the parties evaluate possible outcomes. As the possibility for settlement approaches, the mediator may seek to expand the resources available for settlement; depending on the parties' styles, the mediator may choose a concession-hunting or a one-text approach; conditional offers or two-step offers; a mediator-proposed settlement.

How the judge relates to the settlement process



Judge Dan Hurlbutt had a background in large, complex lawsuits in 1987, when he agreed to take on the Snake River Adjudication. After more than a decade at work on the adjudication, he resigned from the bench in 1998. Although retired, he continues to fill in as senior judge.

Judge Hurlbutt addressed the role of the judge and the judge's relation to the settlement process.

What are the limits on judicial authority?

In major stream adjudications the role of the judge is to set up a fair and impartial tribunal with open access to all parties and to create a level playing field. Traditionally, in adjudications the judge has sat as a potted plant to rubber-stamp the administrative agency's decisions.

This traditional role has been largely discarded. Increasingly, judges see their role as to be sensitive to all those speaking and to be very careful in retaining the fact and appearance of impartiality. We must take care not to express sensitivity that appears to be biased.

Conflict is a transcendent quality of the human condition. Conflict is not inherently good or evil—that depends on what we do to resolve it. Courts provide a dispute resolution service. The role of the judge is to shape a process unique to the parties and issues and necessary outcomes in the particular case before him.

A significant externality is that most judges feel a responsibility to the public in general. When an adjudication is filed the considerable resources of the courts are engaged. The judge feels responsible to see that those resources are used wisely, that they are guarded, and that the adjudication moves along sensibly and is not abused.

We judges recognize that we can be sitting ducks. During the Snake River adjudication, in every legislative session, legislative leadership would go to the

Supreme Court to request my removal. The lead judge would refuse to remove me, and then the legislators would draft legislation to diminish my power and authority. The legislation ranged from establishing statewide elections for my seat to replacing me with a three-judge panel.

There are limitations on judges. The judiciary has a role as a coordinate branch of government. We only rule with respect to existing law, constitutional, statutory, treaties, and rules placed on us by the Supreme Court. We only deal with actual cases or controversies. There are many aspects to conflicts that are not justiciable but demand to be addressed by the parties to potential settlements. The judge is required to see that a case is ultimately decided.

Do judges prefer settlements?

Judges are challenged to use and control the litigation process to create a successful resolution of the issues. Settlement is preferred, to the extent that if the parties can find common ground, common resources, mutually acceptable mechanisms, it's better to do so. The judge can only provide legal answers based on the law and the facts, while the parties can modify, combine, and alter their rights by agreement.

While preferring settlement, judges have to be cautious. I like to tailor every case to the issues. Settlement can be used as a sword by some parties. Exercising administrative authorities, the judge or the agency can browbeat people into settlement. The agency proposes the settlement and the judge signs off as a potted plant.

Alternative dispute resolution is one route to settlement; others include mediation, arbitration, etc. The nature of the case, timing, and other factors suggest which manner of settlement is desirable.

When do the parties want to discuss settlements and actually settle?

In the vast majority of cases it is the pendency of litigation that forces settlement. To go forward with a settlement requires:

1. The appropriate parties are at the table;
2. Issues must be defined and redefined;
3. All the pertinent facts are available.

Administrative agencies have controlled these processes in the past because they had the knowledge, and could beat us over the head with it. There are ways to level this playing field. Until that card has been placed face up on the table, fear of the unknown can inhibit settlements.

There are legal issues that must be resolved before settlement can go forward. There were four tribes filing claims on the Snake River Basin. Three objected to the fourth having standing. The judge had to decide "Who is a tribe?"

What can judges sign off on in a settlement?

Terms that are agreed to as a matter of private contract become enforceable when put into a court order, in a way a private contract is not. Courts can provide ongoing jurisdiction to oversee the settlement. Can a judge sign off on a settlement that is counter to prior appropriation? Perhaps. Counter to the constitution? Perhaps not.

Settlement is no panacea. Litigation can be positive if it's tailored to your needs in your case.

Reflections of a Special Master



Vickie Gabin serves as special master for the U.S. District Court in New Mexico in the Zuni River and in four northern New Mexico stream systems: Taos, Chama, Santa Cruz/Truchas, and Jemez. She also has a longstanding involvement as a citizen in New Mexico water management. Typical of these activities is her membership on the citizens' group that drafted the State Engineer's *Regional Water Planning Handbook*; she also co-authored the 1992 study *Living Within Our Means: A Water Management Policy for New Mexico in the 21st Century*.

I am a special master, appointed by federal district court. The State of New Mexico and the United States of America, as co-plaintiffs in these cases, split my fees and those of my staff. The order of reference outlines the authority and issues I can deal with. The federal district judge that presently has my four adjudications is a hands-on judge and has taken over many of the legal issues, leaving me free to work in the field and work with the parties so that I, too, can take a more hands-on approach in the field. This involves letting the parties explain what is going on and going "hmmmm," while the parties come to see what's going on in a more neutral perspective as they explain.

[Gabin was the special master who ruled on the Rio Jemez Agreement.] At the time of the agreement, unadjudicated water rights were considered by many, including some members of the State Engineer Office, to be administratively unenforceable. This was an argument against this process. The State Engineer and I read the law differently, but we agreed that if anything could be done to support the parties, it would be done.

The settlement agreement was sprung on me at the hearing. It gave the court three alternatives with respect to enforcement and agreement, but no agreement as to which to employ. I was to decide. My criterion was which alternative would be self-executing; which would be most likely to keep the parties out of the court. I was aware that these were people without much money, with little access to technical expertise, and that most of the data they would rely on was in the hands of state and federal agencies.

I discussed the three alternatives with the parties, and instructed the lawyers and their clients to go back and think creatively, looking for the most efficient and the least costly option. The State Engineer was overcommitted as he always is. The hearing was held on July 2nd.

When Gilbert Sandoval asked for the recess, and the tribes and the *acequias* came back with an agreement, I simply smiled and blessed it.

On July 18th I wrote to the parties with my thoughts on how to proceed. On July 31st the U.S. asked to be allowed to withdraw the application for a temporary restraining order and that the agreement be adopted. In September, the court adopted the agreement. In October, we held a hearing on enforcement. There was a consent order providing for appointment of a water master by the State Engineer, with the budget to be determined and split between the State Engineer and the Bureau of Indian Affairs. All agreed on enforcement and on the water master. The latest version of the order, dated September 3, 1997, basically continues the consent order until 2005.

The agreement seemed reasonable. Everyone gave; some gave the most. There was a recognition of relative rights and priorities. The previous special master's report on tribal claims had priority dates and amounts of water use. The non-Indians knew those dates weren't going to change.

In these adjudications the law is not clear. Proceedings sometimes meander in novel directions. When the parties engage in negotiation or mediation they give the judge a chance to be fair as a human being. Judges want to be fair. As an attorney with the State Engineer in the mid-eighties I was

involved in litigation in which one party's position basically gave the judge the alternative of all or nothing. Given that choice, the judge decided against the party,

leaving the party nothing, but nevertheless fashioning some relief for the all-or-nothing party.

Discussion

Absent parties

Judge Jerald Valentine: I was struck by the huge list of people who were part of the Snake River adjudication. While that list is long, it is not 250,000 parties long, and there were 250,000 water rights claims affected by the adjudication. Did those parties that were not set out on the list have access to justice? What criteria does a judge use to decide whether or not to place the stamp of approval on a proposed settlement? To the extent that any judge can accept a settlement, the judge must consider the law and the absent parties.

Judge Dan Hurlbutt: There isn't a perfect way to make sure all wishes to change a settlement are expressed, but some ways make it easier. There is a right to be heard according to law.

I invented a mini-court system to handle the Snake River Adjudication. Notice to everyone was a physical impossibility. I segregated disputes into subcases: notice was served on the parties to the subcases; global issues were identified in a global notice. The notices were publicly posted and parties could subscribe to the notices electronically. If a party felt adequately represented by other parties, they could simply track the global notice to keep informed. This strategy attempted to give notice as fairly and completely as possible.

Special Master Vickie Gabin: On the Jemez, I was concerned about whether the *acequia* coalition was able to bind individual *parciantes*. I created the opportunity for individuals to protest.

There are tensions between individual *parciantes* and the *acequias*—this question of the coalition's authority to bind the individual is very much present. It's the elephant in the room. The Rio Jemez agreement was on the edge here. I was assured that the basin water users' association has the authority to bind its members. There were no objections and there still have been no objections. Whether this means there is no inequity to individual members remains an open issue.

Gilbert Sandoval: Given the restraining order and the tribes' senior rights, I had to communicate to *parciantes* that they had no alternative but the agreement. If they had chosen to argue, they would have carried a great burden of litigation, and again would have had to rely on their lawyers for answers. Fighting the restraining order was an expensive option. I felt that the acres determined to have senior rights—1,600 acres or so in Jemez Pueblo and some 400 acres in Zia Pueblo—could be served given the flow on the river, and there could still be water available for *acequias*. My toughest job was to convince the other irrigators that these were the alternatives.

I made a list of *parciantes* who signed the agreement. It would have been harder for Judge Gabin to accept the coalition as speaking for irrigators if I hadn't gotten evidence of this support. I'm grateful to Judge Gabin for understanding the unspoken words in the courtroom on the day she gave the agreement her blessing—that the agreement can create the conditions of a life with more amity in the basin.

Leveling the playing field

How does a judge review a proposed settlement that the parties have agreed to sign, to determine whether the playing field was in fact level, that no party is getting railroaded?

Judge Dan Hurlbutt: First, you don't wait until you've got a settlement agreement to develop an understanding of who the parties are and when it's appropriate for settlement discussions to begin. The judge needs to evaluate the information that is available to all and decide whether more information needs to be developed.

The critical function is at the front end. If all issues are presented fairly and fully and all framework issues are resolved in the settlement discussion, then, if the parties sign on to the agreement, the judge has to presume they did so voluntarily.

Cognitive psychology teaches us that framing and ordering of the issues will affect the outcome. A judge is concerned not to frame the issues in a way that changes the power balance.

Some judges are pragmatists, seeking the greatest good for the greatest number; others want to make sure everyone gets their day in court."

Courts apply the law

Judge Jerald Valentine: In Jemez, if the case had come before a judge for decision, the judge would have had to apply the prior appropriation doctrine. In New Mexico, prior appropriation is not just a statute—it is established by the constitution. The legislature can change a statute, but amending the constitution to change prior appropriation would be the most major change in the law since New Mexico became a state. A judge could not have reached the outcome reached by the Jemez agreement.

A judge's duty is to look at a factual situation and apply the law to it. District judges are the first to rule on the law, then the Court of Appeals, the State Supreme Court, and the U.S. Supreme Court. There are difficult decisions that need to be made by the courts, the legislature, and the executive. If you don't like the prior appropriation doctrine, going to court with your concerns is not the way to resolve that.

Francis McGovern: Unlike judges, mediators and negotiators don't have to sort out conflicting facts or claims. The purpose of a strategic plan for mediation is to provide justice. The Jemez settlement used an equitable basis that would not have been reached by applying the prior appropriation doctrine. Courts are to resolve conflict. If you can resolve the conflict by agreement before you get to court, that can be better for all parties.

Another model is to view the settlement process, not as a problem solving process, but as a process where you take opinion leaders and go out for approval. In this view, settlement is consensus building, bringing everyone to the table to negotiate.

Government-to-government settlements

Blane Sanchez: Perhaps settlement could be approached in a government-to-government context. In the Snake River Adjudication this would leave only the four tribes, the state and the feds. Each sovereign would then deal with the rights of its constituents.

Francis McGovern: There were 2.5 million claimants over the Gulf war; the United Nations dealt with nations, not with individuals. It can be done both ways.

Take baby steps?

Blane Sanchez: Most water rights adjudications are based on a comprehensive settlement which takes years and a lot of funding. An alternative might be to take a step-by-step approach. Decide on one issue and implement it, building trust and giving you a basis to go forward. If it doesn't work, you can step back, fix it, and go forward to the next step. The Jemez agreement between the Indians and non-Indians allowed them to go forward.

Francis McGovern: A "baby step" methodology to sanity has been proposed by psychologists as well. But some problems are polycentric; you can't do one part without knowing how the others will fit together. For these you need the whole ball of wax; but it has to be made manageable. We need to devise procedures to do confidence-building, and to break baby steps out of the polycentric problem.

Communities Create Success

Lessons Learned

Chris Garcia

To find sustainable settlements in transboundary water issues we are challenged to bridge the gap between water law and other issues crucial to sustainability, justice, and community. For example: Water law sets out terms of ownership; communities may see their entitlements to water in much broader ways. Water law, evolved to allocate quantities of water, deals with emerging crises in water quality and ecological relationships through regulation; communities may need a more holistic approach to their complex water resource. Part of the answer to bridging this gap lies in broadening the menu of issues to be dealt with in the agreement beyond those included in the law.

The planning for this conference began with a desire to hear about successes in multicultural water agreements. In reviewing the conference products, we looked for what these successes had in common and how these commonalities might be characterized with a view to using them to help the parties in similar agreements. Several common themes emerged:

Success is about people: Each of the tellers of “success stories” measured their success, not necessarily in terms of how much was won or lost, but in terms of how their constituents feel, now and in the future, about the results. As Peter Sly, who chaired the panel, said: “When I hear success stories, they often aren’t about money or even water. They’re about people.”

- John Jackson of the Pyramid Lake Paiute Tribe measured the success of the Truckee River agreement by how tribal members feel as they see good quality flow in the Truckee River right through the reservation.
- Susan Cottingham of the Montana Compact Commission said that negotiation is really a means to move out of a hostile situation with people who are working together, to achieve better dialogue between the Indian nations and their non-Indian neighbors.
- Jeanette Wolfley measured success by community acceptance, which requires that there be a guaranteed plentiful supply of water for present and future community needs, from spiritual to tribal irrigation.
- Laura Rose Day said “ultimately success would be if the grandchildren of the Penobscot and their neighbors have a different relationship to the river.”

Respect among the parties is essential: This follows from “success is about people.” To reach a settlement that satisfies the basic needs of the parties, the parties must be able to put their needs forward candidly, confident they will be heard with respect. An honest discussion of this kind is the opposite of the strategic positioning often associated with negotiation, which David



Chris (Nunn) Garcia has twice been director of the New Mexico Water Dialogue and editor of its newsletter, *Dialogue*. She has also edited the State Engineer's newsletter, the *WaterLine* (1997–2001), co-authored the *Value of Water* study for the City of Albuquerque (1996), the Middle Rio Grande Conservancy District Water Policies Plan (1993), and a number of academic and research papers on water administration and water transfers. While a faculty member of UNM's Economics Department, she was among the organizing faculty of UNM's Master of Water Resources Program. Garcia's participation in this conference was partially supported by New Mexico Highlands University's emerging Watershed and Forestry Institute.

Guy called the *mine vs. theirs* approach. While there are many benefits of open communication, there are also dangers. A foundation of respect for one another's values and traditions is essential to building the trust on which an open discussion is based.

- Estevan López said: "Preservation of environmental qualities depends on developing trust with one another. The only way to do that is to recognize that the perspectives we bring are valid. ... There is no one view about [water]. The perspectives others value highly shouldn't be set aside with 'My view is the right view.' Too often we don't allow ourselves to develop the trust necessary to work on resolution of issues. That's our challenge, and I hope we're up to it."
- George Britton dared to use the much-maligned word "political, with a small p," for this sort of exchange, reclaiming what was once an honorable term for the negotiation of the social contract. In such a process, he said, "Ownership may become stewardship; exploiters may become conservators; adversaries may become partners; conflicts may become collaborations. These key phrases recognize the core political meaning of the disputes."
- David Guy described the landmark agreement between northern and southern California water interests as "a major cultural change, a recognition that we couldn't pursue *mine vs. theirs*. It manifested a culture of success. No one was thinking failure. No one wants to go back to the same way of doing things."

This point is well-illustrated by the interactions that resulted in the Jemez agreement. These neighbors already knew and respected one another—many had been high school comrades. But in the heat of the adjudication, feeling that their water, the lifeblood of their connection to the land, was threatened, this shared history was temporarily forgotten. Gilbert Sandoval tells movingly about the moment when a negotiating team went out to walk the ditches, when he realized that the pueblo ditches were *dry* and had been bone dry for months. Gilbert knew in his guts what a dry ditch means. As a

neighbor he knew that something had to be done. The pueblo was no longer the adversary in the litigation, but a neighbor in trouble, and discussions began in earnest once the parties' common landscape was revealed.

Several thoughtful commentators have observed that the Rio Jemez agreement was not made among parties who are diverse at their core, but among neighbors who, though based in different cultures, share essential values of connection to the land, the river, and to agricultural life. It remains to be seen whether truly diverse communities can also recognize themselves as neighbors sharing a common dependence on the river, in a way that will make possible really sustainable agreements. This seems a worthwhile question to explore.

We need to hang in there: If success is largely found in healthy ongoing relationships among the basin's communities, the parties must stay around to experience success.

- Gilbert Sandoval, who has 35 years with the U.S. Forest Service, described the agency's career ladder as "promotion and relocation". Career foresters "never saw the result of their efforts, whether they were a failure or a success. My decision was to stay in my area, where I have five generations of roots—so I suffered the agony of failure in my projects where they didn't realize their promise, but I also enjoyed the fruits of successes. I made a lifelong commitment so I can improve my relationships and so my children do not have to do this again. I can't tell you how important it is to be intimately familiar with the problem from the perspective of those with me."
- Peter Pino, a party to the same adjudication, put it more bluntly. "In many of your introductions you said 'in my previous life.' ... That tells me you guys are temporary, mobile. If you're going to make an agreement you have to be here when we're trying to work it out. If you're mobile, I wonder what you're running from. Please stay where you are if you're going to work on this."

We need a common understanding of the facts: It is essential for the parties to develop a common understanding of the law, hydrology, history, ecology, and geology of the transboundary water basin in order to reach an agreement that stands up over time. While no one suggested that research, data, and education would produce a successful agreement, we heard over and over again how essential these are to creating an environment for a successful agreement.

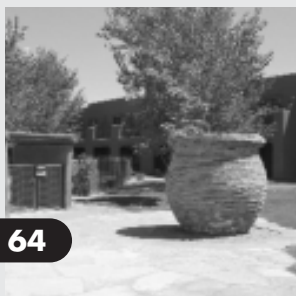
These observations drawn from successful agreements suggest an approach to transboundary water negotiations, especially in multicultural contexts, that the Utton Center proposes to test out on the ground. Consider the four observations above:

- success is about people
- respect is essential
- those who make the agreement should stay around to implement it
- we need a common understanding of the facts

As we reviewed these commonalities, it appeared to us that a stronger foundation for developing a water agreement might be built by bringing the parties together prior to negotiation to learn jointly the important facts about their shared resource and to learn about one another. Since it is the community that will live with the agreement, our thought is that it is community members and their leaders who should come together for this process. Lawyers and advocates may join the community members, but they are not the prime actors in this foundation step. A series of encounters in a mutually-respectful learning and teaching environment, focused, not on hammering out settlement terms, but on creating a common understanding, could reveal a landscape that contains settlement options that adversaries might never uncover.

11 Steps to a Successful Settlement

The following list is drawn from a paper used to support a presentation by Marilyn O'Leary on principles of water rights settlements, based on this three-day conference. The presentation was given at McGeorge Law School's conference, "Transboundary Freshwater Ecosystem Restoration: The Role of Law, Process and Lawyers" February 18-19, 2005.



Recognize that water plays different roles in different communities.
(Estevan López)

Respect and recognize the relative rights and priorities of the parties; attempt to find commonalities between the parties and their overall goals.
(Vickie Gabin)

Decide whether to expand the issues—expansion of the issues “changes the structure of power, and one has to be careful how power is redistributed.”
(Albert Hale)

Decide which parties you will invite to the table. Too many parties could cause the settlement to become inefficient; failing to identify all the interests involved could mean that the settlement will not be sustainable.
(Francis McGovern)

Have committed participants and leadership capacity, as well as sound structure and process.
(Shirley Solomon)

Educate the community about the water agreement's importance. Success is community acceptance.
(Jeanette Wolfley)

Successful negotiation consists not only in reaching a settlement, but in implementation of the settlement.
(George Britton, Albert Hale)

Settlement processes need to be well-funded; otherwise some who need to be at the table may not be able to participate.
(Eileen Gauna, Paula Garcia)

A step-by-step approach may be less time-consuming and resource-intensive than a comprehensive water-rights settlement.
(Blane Sanchez)

Recognize that “litigation can be valuable; looking for alternatives to litigation shouldn't itself be a goal.”
(David Guy, Dan Hurlbutt)

The change must be regional and national as well as local. “We have to talk about developing a better system that can provide for a great variety of uses.”
(Dale Pontius)



To The Larger Community

Next Steps for the Utton Center

Marilyn C. O’Leary, Director, Utton Center

As I went from group to group working on the hypothetical during the conference, I observed two phenomena. First, the nature of the discussion varied greatly with the composition of the group. If the group was comprised mostly of men, or of women, or of traditional water users, or of newer water users, the discussion had a particular emphasis. The corollary was that the more diverse the group, the more people spoke up. In groups with little diversity, the “minority members,” were quiet. It was clear that if full participation by all stakeholders is desired, the group must be balanced. Second, the less political power the group perceived it had, the more creative were its solutions. I believe this fact speaks to the lack of necessity to be creative when one is in a power position. Having seen these effects will allow us to constitute groups in ways to more effectively manage difficulties.

Focusing on successes allowed participants who were involved in seemingly intractable water disputes to consider different ways of approaching issues. Many people told me how refreshing it was to see that these difficult issues could be successfully negotiated. It was also apparent that certain common themes cut across all of the success stories: an understanding and acceptance by all parties of the basic law or facts at issue; the importance of an attitude of respect; building or maintaining relationships during the negotiation process; and keeping the public informed as the negotiations proceeded were only a few of the important messages.

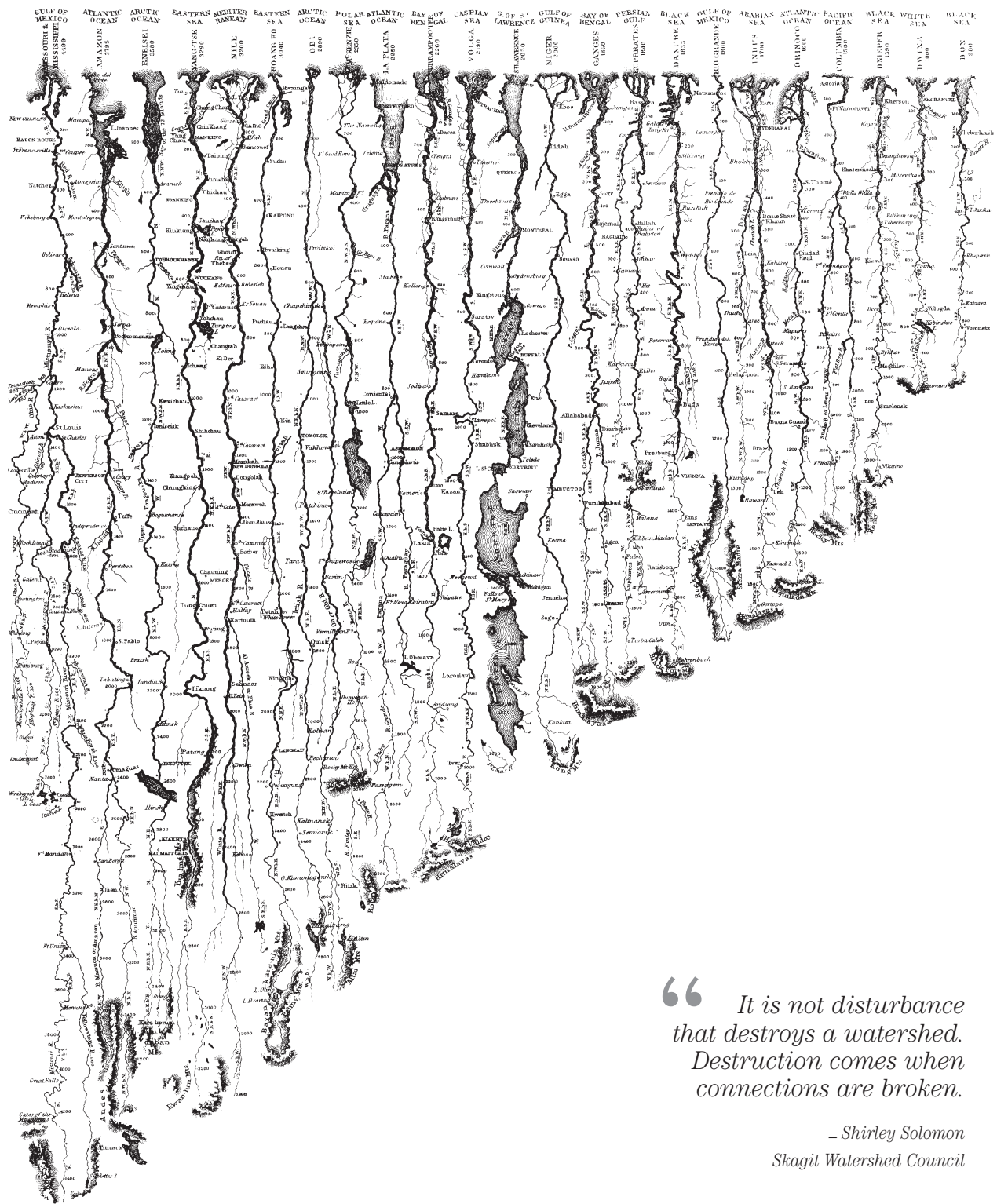
It became clear to me that each stakeholder to a water rights negotiation

brings his or her own culture to the table, whether it is a racial, historic or governmental culture. These differences affect our approaches to water use, our values, and our needs. Acknowledging and understanding our differences allows us to see our similarities more clearly and enhances our ability to work toward a common goal. And so while we presented cultural differences we also were cognizant of the similarities that bring people together over water.

The Utton Center intends to take this kind of workshop into real-life situations, such as adjudications or other water disputes where the parties could benefit from education, training, and examples of success. It is an excellent model for conveying information, educating parties, and building relationships — all of which are necessary for successful resolution of complex disputes. Our goal in continuing with this work is to bring parties together for educational purposes and to provide information and experiences to allow parties to move into the settlement mode if they so desire. This is one way of using Al Utton’s method of preventive diplomacy.

During the last afternoon of the conference, in the midst of a hot, dry, late summer day, we first heard, then looked out the windows of the meeting room to see, a lovely, soft rain, blessing the land, watering fields, and filling the streams. In the beautiful setting at Santa Ana Pueblo, many of us felt fortunate to have had the experience of working together on such complex issues with a vision of success.





Reprinted with permission from Edward R. Tufte, *Envisioning Information*, 1990. Graphics Press, Cheshire Connecticut.

Original printing Joseph Hutchins Colton, *Johnson's New Illustrated Family Atlas with Physical Geography* (New York, 1964), pp.10-11.

Module II: Changing Perceptions – Basins without Boundaries

Module II Overview

Type of Process/Negotiation Stage	Focus of Process	Collaborative and Transformational Skills	Context, Geographic Scope or Framing for Outcomes
Reflexive	Needs and Interests	Skills-building in identifying positions, needs and interests	 Watersheds/Basins

Stage 2 of Water Conflict Transformation

Section A. General Setting: The Reflexive Stage of Negotiation

In *reflexive* processes, the focus shifts from *rights* (what a party feels it legally deserves) and positions (specific proposals disputants put forth that suggest a way the conflict can be resolved), to *needs* (what is actually required to fulfill disputants goals) and *interests* (the expression of needs which drive behavior and provide motivation to seek a solution to a problem). Reflexive negotiations are also called collaborative processes, alternative dispute resolution, and mediation.

These collaborative approaches have several common features:⁴³

- Participation is inclusive and voluntary.
- Participants have ownership of the process.
- People are kept informed.
- A common definition of the problem is used.
- Participants help educate each other.
- Multiple options are developed.
- Multiple related issues can be addressed simultaneously.
- Decisions are usually made by consensus.

⁴³ Oregon Department of Land Conservation and Development. *Collaborative Approaches to Decision Making and Conflict Resolution for Natural Resource and Land Use Issues*, Salem, OR: Oregon Department of Land Conservation and Development, 1996, 33-35.

- There is a relative balance of power (legal, political, personal, and/or financial) among parties and no one party has complete jurisdiction over solutions to the issues.
- Participants have a role in implementation (e.g. direct role, oversight, etc.).
- The process supplements existing legal procedures.

The process involves all parties with a stake in an issue. All major interests who are affected by the outcome and those in a position to help implement or block implementation of an outcome (i.e. stakeholders) are identified and representatives of those interests participate in the process.

Collaborative processes can be more comprehensive in their focus. More than just the legal issues are addressed. Multiple interests of the public in water may be considered (Figure 5: ‘Interests of the Public in Western Water’ on next page).

Further, collaborative processes can have important social and institutional benefits and outcomes:⁴⁴

- Help clarify the problem and the underlying issues and interests.
- Help build respect for and a better understanding of different viewpoints.
- Encourage greater creativity and a broader range of options for mutual exploration.
- Lead to better informed, more creative, balanced and enduring decisions.
- Increase commitment by sharing responsibility for the process and outcomes.
- Improved chances of implementing a permanent solution.
- Improve the working relationship between all parties in the process.

The tone is more open. Listening becomes pivotal to success. The ability to listen to others’ views and values may result from a deepening of self-awareness and understanding of conflict. Parties become able to listen to each other without resistance. Together, they can explore underlying causes, beliefs, and assumptions that have previously limited them from getting at deeper questions that may be necessary to answer in order to reach solutions.

This shift, from speaking to really listening, from rights to needs and interests, is a crucial conceptual shift on the part of the participants, and can be both profoundly difficult to accomplish, and absolutely vital to achieve for any movement towards win-win solutions that are more sustainable for basin management. To help accomplish this shift, the collaborative learning emphasis is on *skills-building* – becoming a better listener, and learning how to elicit and work with the needs and interests of stakeholders. Once participants are able to hear each other better and understand their motivations and needs, the problem-solving capabilities, which are inherent to most groups, can begin to foster creative, cooperative solutions.

⁴⁴ Ibid., 42.

<u>Public Health and Safety</u>	
Public Health	<i>Spokespeople:</i>
Pollution Control	Government: Federal, State,
Fire Protection	Tribal, Local
Drinking Water	Non-governmental organizations-
Flood Control	NGO's
	Professional Associations
<u>Economic</u>	
Industrial	<i>Spokespeople:</i>
Transportation	Individual Industries
Thermal Energy	Governmental Agencies
Navigation	Lobbyists
Agriculture/Timber	Financial Institutions
Mineral Extraction	Communities
Economic Development	
Power Production	
Tourism	
Tax Base	
Commercial and Rec. Fisheries	
<u>Social</u>	
Cultural Values	<i>Spokespeople:</i>
Hope for the Future	Tribes
Community Values	Communities/leaders
Historical Values	Churches
Aesthetics	Social Scientists
Recreation	Artists, Writers
	Historians
<u>Ecological</u>	
Endangered Species Protection	<i>Spokespeople:</i>
Fisheries	Government: Federal, State, Local,
Water Quality	Tribal
Flushing Sediment	NGO's
Channel Maintenance	Professional Associations
Soil Stabilization	
Instream Flow	
Wildlife	
Ecosystems Protection	
Wetlands	
Riparian Values	
Habitat	
Watershed Protection	

Figure 5: Interests of the Public in Western Water and their Spokespeople

Section B. Seven Elements of Reflexive Conflict Resolution

Alternatives

Alternatives are the walk-away possibilities that each party has *if an agreement is not reached*. In general, neither party should agree to something that is worse than its “**BATNA**” – its **B**est **A**lternative **T**o a **N**egotiated **A**greement – “away from the table.”

Interests

Interests are not positions; positions are parties’ demands. Underlying the positions are the reasons they are demanding something: their needs, concerns, desires, hopes and fears. The better an agreement satisfies the parties’ interests, the better the deal.

Options

Options are the full range of possibilities on which the parties might conceivably reach agreement. Options are, or might be, put “on the table.” An agreement is better if it is the best of many options, especially if it exploits all potential mutual gain in the situation.

Legitimacy

Legitimacy refers to the perceived fairness of an agreement. An agreement will leave both parties feeling fairly treated to the extent that it is based on external benchmarks, criteria, or principles beyond the will of either party. Such external standards of fairness include laws and regulations, industry standards, current practice, or some general principle like reciprocity or precedent.

Commitments

Commitments are oral or written statements about what a party will or won’t do. They may be made during the course of a negotiation or may be embodied in an agreement reached at the end of the negotiation. In general, an agreement will be better to the extent that the promises made have been well planned and well-crafted so that they will be practical, durable, easily understood by those who are to carry them out, and verifiable if necessary.

Communication

The quality of communication in a negotiation depends on both the level of mutual understanding and the efficiency of the process. In high quality communication, the messages understood by the receivers carry the meaning intended by the senders. That is, the parties understand each other – even if they disagree. High quality communication is also efficient in that negotiators minimize the resources expended in coming to agreement or deciding to discontinue negotiations.

Relationship

Most important negotiations are with people or institutions with whom we have negotiated before and will negotiate again. In general, a strong working relationship empowers the parties to deal well with their differences. Any transaction should improve, rather than damage, the parties' ability to work together again.

Source: Barnett⁴⁵

⁴⁵ Terry Barnett; CMI Washington/Carolina. ©2001 by Conflict Management, Inc. All rights reserved.

Section C. Skill-building: Listening

Exercise II.1: Listening Skills

Exercise conducted by instructor/facilitator.

Objectives

To offer two skill-sets for listening: *active listening*, which is a set of ground rules for polite, constructive discourse; and *transformative listening*, which allows for deeper work, useful especially when powerful emotion is present.⁴⁶

Part 1: Active Listening – To facilitate healthy dialogue

*Part 2: Transformative Listening*⁴⁷ – To engage in and understand transformative listening

*Part 3: Intercultural Negotiations*⁴⁸

Key Points of Exercise

The most difficult leap in negotiations (or in most discussions, for that matter), is to get past *positions* (what someone is saying) to understanding their *interests* (why they are saying it). Yet understanding interests is critical to effective dialogue. The single most effective way to accomplish this leap is to listen – truly listen – to the speaker. Listening at depth is not an easy skill, especially in many western cultures where power seems to be associated with how much is said (and sometimes with how loudly).

When real emotion is present, classic problem-solving approaches to dialogue are generally not practical. Water, as we have seen, can be tied in to all levels of existence, from basic survival to spiritual transformation. This can result in some very emotional negotiations which are both difficult to clearly track as well as to be a part of due to the level of emotion.

⁴⁶ There is also a school called, “dialogic” listening, which argues that both styles presented here put too much emphasis on the speaker, and not enough on the group. “Dialogic listening” focuses on group processes, utilizing metaphor and mutual encouragement, to develop mutual interests. See Stewart, John and Milt Thomas. *Bridges Not Walls: A Book About Interpersonal Communication* (New York: NY: McGraw-Hill. 1995), 184-201.

⁴⁷ This part of the exercise was developed by the Harvard Negotiation Project and taught by Erica Fox, director of the Harvard Negotiation Insight Initiative at the Program on Negotiation: <http://www.pon.harvard.edu/>. Used here with permission.

⁴⁸ LaBaron, Michelle. “Communication Tools for Understanding Cultural Differences.” Beyond Intractability. Jun 2003. <http://www.beyondintractability.org/bi-essay/communication-tools> is a comprehensive introduction to culture and negotiations in general, while Faure, Guy and Jeffery Rubin and *Culture and Negotiation: The Resolution of Water Disputes* (London: Sage Publications. 1993) *Disputes*, focuses on culture and its role in water negotiations.

Paying Attention

- Face the person who is talking.
- Notice the speaker's body language; does it match what he/she is saying?
- Listen in a place that is free of distractions, so that you can give undivided attention.
- Don't do anything else while you are listening.

Eliciting

- Make use of "encouragers" such as "Can you say more about that?" or "Really?"
- Use a tone of voice that conveys interest.
- Ask open questions to elicit more information.
- Avoid overwhelming the speaker with too many questions.
- Give the speaker a chance to say what needs to be said.
- Avoid giving advice, or describing when something similar happened to you.

Reflecting

- Occasionally paraphrase the speaker's main ideas, if appropriate.
- Occasionally reflect the speaker's feelings, if appropriate.
- Check to make sure your understanding is accurate by saying "It sounds like what you mean is...Is that so?" or "Are you saying that you're feeling..."

Figure 6: Techniques of Active Listening⁴⁹

Instructions/Additional information

Shared basins are often defined by crossing political boundaries, but even more profoundly, they cross cultures – those of societies and ethnic groups, of religions and professions, of language and of class. A facilitator/mediator needs to be acutely aware of, and sensitive to, how cross-cultural dynamics can impact the flow of communication and ideas, as well as their own inherent assumptions.⁵⁰

Many well-respected mediators/facilitators offer their wisdom.

⁴⁹ Kaufman, Edy. Innovative Problem-Solving Workshops. in *Second Track/Citizen's Diplomacy: Concepts and Techniques for Conflict Transformation.*, edited by John . Davies, (Lanham: Rowman and Littlefield. 2002), 220.

⁵⁰ The western, academic development of the problem-solving workshop, and culture's impact, can be found in Avruch, Kevin *Culture and Conflict Resolution* (Washington DC: United States Institute of Peace. 1998), 84-100.

The whole challenge of cultural assumptions is illustrated by John Paul Lederach (1995) as he describes his experiences acting as a mediator in Central America:

Why is it...that in the middle of listening to someone give their side of a problem, I have a natural inclination to make a list, to break their story down into parts such as issues and concerns? But when I ask them about issues, they seem to have a natural inclination to tell me yet another story. The difference...lies in the distinction between analytical and holistic thinking. Our North American conflict resolution approaches are driven by analysis; that is the breaking of things down into their component parts. Storytelling...keeps the parts together. It understands problems and events as a whole.⁵¹

Avruch (1998) sums up:

Even while acknowledging that the capacity to reason is a human universal, we face the other fact that the representations of the worlds about which humans bring their reason to bear can differ profoundly from one another...To try to suppress this variance, even in the powerful setting of a conflict resolution problem-solving workshop, seems to be an invitation to failure.⁵²

He cites Cohen (in Faure and Rubin 1993) for a good model of culturally aware mediators, who are neither specialists nor globalists:

First, these individuals are aware of the gamut of cultural differences and do not naively assume that “underneath we are all pretty much the same.” Second, they perceive the potency of religious and other cultural resonances. Third, [they] grasp that Western ‘rationality’ is based on culture-bound values and assumptions. Finally, they do not take for granted that an expedient (such as face-to-face negotiation) that works for one culture necessarily works for another.⁵³

Nevertheless, Zartman (in Faure and Rubin) suggests that “culture” is too often used as an excuse for failure, while Lowi and Rothman (in Faure and Rubin) use the water negotiations over the Jordan basin to show how cultural differences can actually be harnessed to induce more effective dialogue. Lederach (1995) agrees that, “Culture is rooted in social knowledge and represents a vast resource, a rich

⁵¹ Lederach, *Preparing for Peace*, 81.

⁵² From the western, academic development of the problem-solving workshop, and culture’s impact, Avruch, 94.

⁵³ Ibid., 104.

seedbed for producing a multitude of approaches and models in dealing with conflict.”⁵⁴

There are many ways to characterize cultural differences. Brooks Peterson (2004), for example, has pulled together a number of models to describe differences along five axes based on the relative importance of particular characteristics.⁵⁵

⁵⁴ Lederach, *Preparing for Peace*, 120.

⁵⁵ Peterson, Brooks *Cultural Intelligence: A Guide to Working with People from Other Cultures* (Yarmouth, ME: Nicholas Brealey Publishing, 2004).

Exercise II.2: Identifying Stakeholders, Interests, and Needs in New Mexico Intercultural Example

To be completed in-class or as take home exercise.

Objectives

To introduce the motivations of stakeholders by understanding their needs.

Instructions/Additional Information

Read through The Utton Center's, "Transboundary Waters: Crossing Cultural Boundaries for Sustainable Solutions" (see Module I, Section E).

Reflect and respond to the following questions:

1. What stakeholders were included in this reading? (Stakeholders are usually considered to be key people, groups of people, institutions, or representatives of institutions that may significantly influence the success of an activity, project, or conflict resolution process.)
2. What were the shared interests (e.g. reasons for being engaged, needs, desires, hopes or fears) that brought this group of people together?
3. As you read the "panel of perspectives on water" (pp.11-23), notice the different ways that people relate to water, and what their needs are from water. Using Maslow's hierarchy of needs (shown below in Figure 7). You can also refer to http://en.wikipedia.org/wiki/Maslow's_hierarchy_of_needs, sections 1 and 2), make a table of the panel participants' needs.
4. What might the perspective of a future generation look like if it had been included on the panel?
5. Describe three things that were new to you or surprised you as you read through the panel's perspectives.

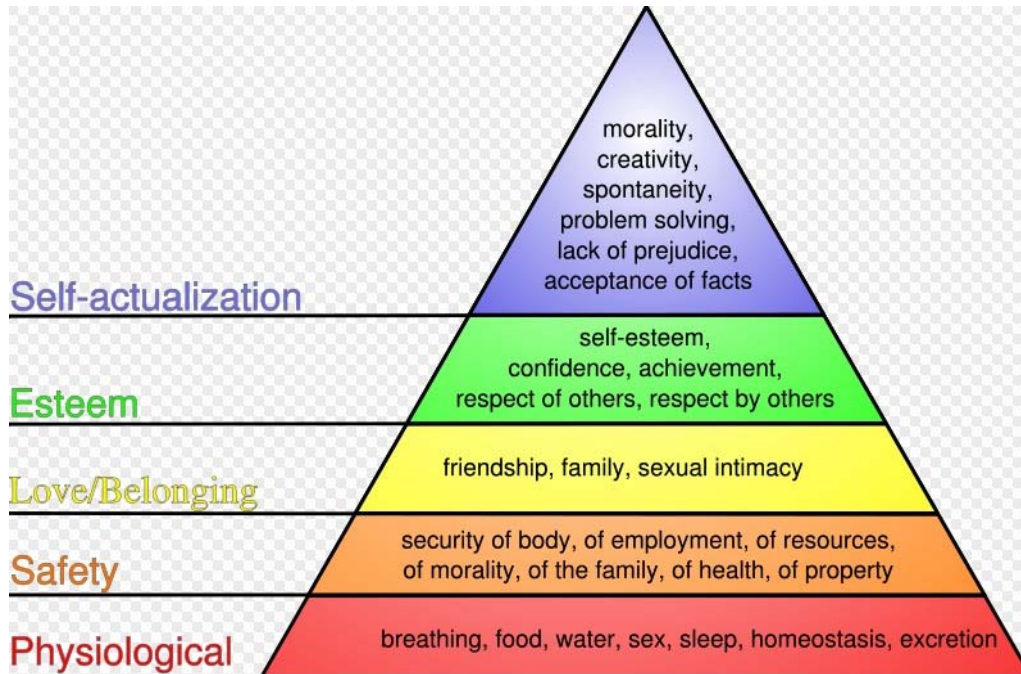


Figure 7: Maslow's Hierarchy of Needs⁵⁶
(Source: Wikipedia)

⁵⁶ Wikipedia. "Maslow's Hierarchy Of Needs," Wikipedia. 2007.

Section D. Negotiating by Interests and Needs

Exercise II.3: Negotiating by Interests and Needs

Exercise to be conducted by instructor/facilitator.

Objective

To reinforce the concept of a boundary-less basin and what it does for negotiations to examine interests and needs this way.

Key Points of Exercise

To explore what happens when we come from our interests and needs. What happens to our language? What happens to our emotions? What happens to the range of possibilities for looking at plans and strategies for the basin? What does it do for our feeling about our relationships in the negotiation?

Instructions/Additional Information

To be provided by instructor.

Module III: Enhancing and Sharing Benefits

Module III Overview

Type of Process/ Negotiation Stage	Focus of Process	Collaborative and Transformative Skills	Context, Geographic Scope or Framing for Outcomes
Integrative	Benefits/ Values/ Reframing	Consensus- building; thinking together; relationship-building	 Problemsheds/"Benefit-sheds"

Stage 3 of Water Conflict Transformation

Section A. General Setting

Once participants have moved in the first two stages from mostly speaking to mostly listening, and from thinking about rights to needs, the problem-solving capabilities which are inherent to most groups can begin to foster creative, cooperative solutions. In this third, *integrative stage*, the needs expressed earlier begin to coalesce together to form group interests – the “why” underlying the desire for the resource. Conceptually, they start to think about how to enhance benefits⁵⁷ throughout the region, primarily by adding resources other than water, geographic units other than the basin, and social and economic networks that connect with and contribute to the health of the basin. The collaborative learning emphasis is now on the *consensus-building* of the group, and it begins to think about a “benefit-shed” rather than being restricted by the basin boundaries.

There are different ways to pursue this integrative stage. The appropriate process will be situation-dependent and will have its own organic unfolding.

⁵⁷ Finding an international symbol for “benefits” has been a challenging task. We settled on the cornucopia, especially given its origin in mythology, as described by Ovid: In a battle for his wife, Deianira, Hercules defeated the god of the river Achelous. In this contest, the left fork of the river was wrenched off from the main body, and snatched up into heaven, where it was turned into a cornucopia pouring out a wealth of fruit and flowers upon the reclaimed valley and enriching the entire kingdom.

Nevertheless, these processes take unusual facilitation and/or leadership, and this should be assessed as one considers undertaking an integrative process.

Through many of these processes, parties have had an experience of transformation from what they may have known. If parties are still tending to think of the integrative process as being about the river, management, and negotiation; if they are thinking about themselves or their interest as separate from other parties/interests; and how they think about cooperating and distributing benefits among parts -- rather than thinking as a whole system, consider the following integrative process.

It is framed around creating a shared cooperative agenda. The extent to which this can occur will be determined by each party's perception of the benefits it can secure from cooperation. Convergence towards a cooperative agenda will be facilitated by several important and practical steps. First, the perception of the range and extent of potential benefits needs to be expanded to the extent possible, from the obvious to the less apparent. Second, the distribution of benefits, and benefit-sharing opportunities to redistribute the costs and benefits of cooperation, need to be explored to enable the definition of a cooperative agenda that will be perceived as fair by all parties. Third, alternative modes of cooperation need to be recognized and appropriate types of cooperation identified to secure the greatest net benefits. Each of these steps is examined below.

A first step in motivating cooperation is to recognize the widest possible range of potential benefits that cooperation could bring. There will be no cooperation if benefits are perceived to be insufficient relative to the costs of cooperation. Benefits are broadly defined here to extend beyond any direct relationship to the river to the "problemshed" and to include economic, social, environmental and political gains.

A useful framework for broadening the range of recognized benefits of cooperation proposes the identification of four types of cooperative benefits.⁵⁸ The first type of benefit derives from cooperation that enables better management of ecosystems, providing *benefits to the problemshed*, and underpinning all other benefits that can be derived. The second type of benefit derives from the efficient, cooperative management, development, and protection strategies, yielding *benefits from the problemshed*. The third type of benefit derives from the lessening of tensions because of cooperation and shifting the focus from the river itself to a problemshed, resulting in the reduction of costs *because of the problemshed*. And finally, there are benefits derived from greater cooperation *beyond the problemshed*.

⁵⁸ Sadoff, Claudia W. and David Grey. "Beyond the river: the benefits of cooperation on international rivers." *Water Policy* 4, no. 5 (2002): 389-403.

Section B. Enhancing Benefits: Beyond the Basin, Beyond Water

Exercise III.1: Beyond the Basin, Beyond Water

To be completed in class.

Objectives

To think together about how to enhance the benefits to *all* the parties, by both moving beyond the basin to think in problemsheds or “benefit-sheds” and beyond water to incorporate other benefits, enlarging the overall “basket of benefits” (Figure 8).

Key Points of Exercise

Two conceptual shifts:

1. *Watersheds to “problemsheds.”* – The watershed or basin is often the unit of management for water management. But what about when there are interbasin transfers as happens in parts of the West? This can have unintended consequences and third party impacts to the environment, communities and local economies in the basin of origin.

What else is on the parties’ minds as they negotiate? Electricity grids? Ecosystems? Flyways? Climate patterns? Strategic interests? What are the geographic units of each of these “problemsheds” and how are they expressed in a negotiating strategy?

2. *Beyond water to enhance benefits* – If we begin to understand the interconnectivity of these overlapping problemsheds, we can now start to think about enhancing the “basket of benefits” by thinking beyond water to “benefit-sheds.” Which of the issues raised in a) above, can be introduced to a discussion of enhancing benefits?

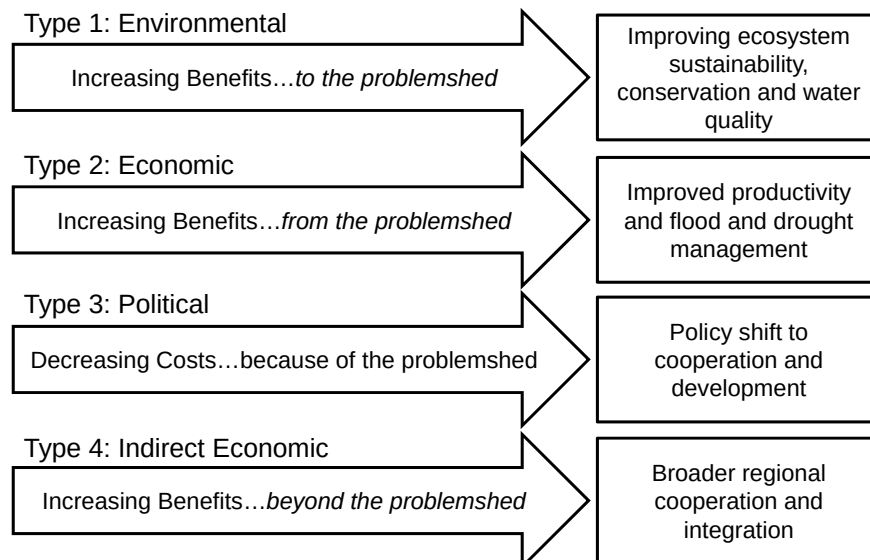


Figure 8: Four Types of Benefits from Cooperation

Instructions/Additional Information

To be provided by instructor.

Section C. Beyond Negotiation: Relating as a System

For many “intractable” western water problems, Stage 3 processes will need to be taken up a notch. There are several examples around the West of problems that have come to a standstill because of limits to our laws, institutions, and capacity to tackle these. Also the way we frame the problem and solutions need to change.

These situations call for a certain quality of leadership, ripeness of the issues, and sincerity and fluency in the process.

Leadership

Of all of the processes, this type of process depends on visible, often elected leaders to convene, tend, and “hold the container”⁵⁹ for the process. Leadership must be trusted to have a fair process by all involved. Leadership cannot be coming from a political motivation, or it will harden participants and generate cynicism. Stakeholders and participants must trust that their leaders truly understand the circumstances and challenges.

Leaders set the tone. They can certainly enhance the potential of the group by making it safe for participants to move from an open mind to an open heart and, under the best of circumstances, open will.⁶⁰ Leadership cannot allow scapegoating or blaming of any single interest for the presenting problem or crisis. They need to know and demonstrate that they know the legitimacy of every participant – every expression of the whole. They also need to accept that all the tools and methods of Stage I and Stage II processes are still available. Typically, however, participants will suspend their inclination to use these processes if a Type III process is designed and conducted sincerely.

There must be an even playing field. These processes are transparent and inclusive. Any attempt to exclude, even if in the name of efficiency of the process, can undermine the process and outcomes. That said, these are time-consuming processes, and most parties will be content to have a leader or trusted representative of their community participate without having to be present themselves (Some may want to attend one or two meetings. It is well worth accommodating them for the understanding all will gain, and the effort saved in

⁵⁹ Isaacs, 242-251. Creating a “container” means creating conditions under which a rich experience of interaction is more likely to occur. It is a setting which allows for and supports the intensities of human activity in a way that is experienced as safe. The active experience of people listening, respecting one another, suspending their judgment, and speaking their own voice are key aspects of the container for dialogue.

⁶⁰ To understand how these levels relate on an individual level, and the types of questions that help us transition and move between these levels, consider Sharmer, C. Otto, “Presence in Action: An Introduction to Theory U,” DVD, Society for Organizational Learning.

correcting misperceptions and fears that can be projected onto the process if they were to be excluded.).

Finally, in order for participants to commit the time and resources, and to risk vulnerability with people they have become accustomed to not trusting, leadership must also have the ability to leverage or implement and fund changes with the assistance of the participants. It can be a significant undertaking, but, to date, these processes are the only choices for making progress through these impasses.

Once a process is underway, leadership takes on a different quality. While the tending and attention of elected leaders remains important, voices from around the table gain potency. The “table” becomes driven by the question of whether common good and our future are being served and how to do it. The “table” sees their role as tending the whole – not their individual interests. As they think together in relationship, they can relax their grip on certainty and listen to the possibilities that emerge from the crucible of their collective thoughts, observations, and ideas. Together they uncover and form a base of shared meaning that can help coordinate and align collective actions and shared values.

Another likely difference is that the process may not be confined to discussions around a single table anymore.⁶¹ More likely, discussions will have both a table where diverse leadership has discussions and generative dialogue interconnected with decentralized “tables”⁶² throughout the problemshed having similar dialogues. In many such processes, there is some overlap in leadership at these tables – either through a leadership team (with trusted messengers representing each interest group), co-chairmanship signaling balance and full representation of all interests in the leadership, advisory teams with comprehensive membership, boards, etc. The leadership may also be on a speaking circuit and in touch with the media to reach multiple audiences throughout the problemshed. There is a more fluid flow of information and concerns within the problemshed.

The Shift

This type of Stage 3 process is no longer about “negotiation,” “water management,” or “conflict.” Instead, it becomes “generative dialogue,”⁶³ “relationships among dynamic systems,” and a *collaborative, consensus-building* process. The intention becomes promoting constructive change processes which restore or enhance the quality of the resource and quality of life.

⁶¹ This workbook bases its description on several experiences of this *integrative process*, though it assumes there are multiple ways that the process could be structured.

⁶² Note that “tables” may refer to conferences, call-in radio shows, and any number of other public forums aimed at discussion of the complex problem at hand and with an intention of sharing information and generating ideas and understanding.

⁶³ See Isaacs, 38-41.

Generative Dialogue and Relationships

Generative dialogue allows us to challenge taken-for-granted assumptions that are broadly held; reorder people's existing knowledge – allowing people to see what they already know in a new light; and to reframe the problem. It “requires that we take responsibility for thinking, not merely reacting, lifting use into a more conscious state.”⁶⁴ This type of dialogue creates entirely new possibilities and creates new levels of interaction.

At this level it is not uncommon for participants to conclude that we do not know as much as we would like to about the natural system and probably can't know as much as we would like to know. Humbly, participants concede that the system is chaotic; that instead of thinking about *managing* natural systems, we should shift our thinking to how we govern our own behavior in relation to the resource. Dialogue then reflects on dynamic interconnections that extend beyond hydrologic units alone and moves to thinking comprehensively about economic, ecologic and social needs, interests and benefits as a whole. Ultimately, participants will engage with each other in an entirely new way exploring the dynamic natural and social systems within which relationships are embedded.

Framing

In the middle of complex conflicts and crisis, leaders often recognize that the framing of the problem won't lead to a solution. Even with this awareness, many leaders will stay with familiar framing because taking on more and engaging a suite of highly complex, dynamic challenges may be daunting and politically risky.

Leaders who are motivated by policy rather than politics, and function rather than form, will look at these crises and systemic pattern of conflicts, and examine their framing of the problem. In order to hold the full dynamic that is usually at play, they will look at the source of the problem and probe how well and holistically it is understood and in light of present-day circumstances. They will then reframe the problem to capture the kernel of what is needed for the present as well as the future.

Reframing is not an easy skill because of the number of embedded assumptions we collectively carry. However, the most promising opportunities for reframing come from:

- Seeing clearly what is the root of a problem and what are the symptoms. Reframe the problem around the root of the problem.
- Recognizing health, quality, and restoration of systems (e.g. economic, ecologic, and community/social) -- not just quantity. This opens up a surprising number of opportunities, particularly when one becomes aware of and challenges ones assumptions about these.

⁶⁴ Ibid., 45-46.

- Exploring these dimensions simultaneously. Treat everything as whole and interconnected. Solutions framed this way tend to be apolitical, and don't send participants into polarized camps. This comes from holding out a vision that all parties can see themselves as a part of.
- Orienting attention to short-term responses as well as mid- to long-term strategies for change. Words that encompass such a time horizon may be expressed in the words like "sustainable."

Section D. Developing Capacities

All of these skills are worth practicing until you come to your own level of ease and belief in their contribution to conflict resolution. If they are used, and the audience does not perceive sincerity or consistency with other messages or things you say, it can back-fire. When in doubt, forget the practiced skill, go inside yourself, and speak from the place that is most sincere and honest.

Exercise III.2: Developing Capacities

To be conducted in class or as take home exercise.

Objective

Practice skills that help with transformative reframing of conflict, as well as listening/sensing skills that shift awareness to a sense of wholeness.

Instructions/Additional Information

*Part 1: Either/Or to Both/And*⁶⁵

When we experience dilemmas and paradoxes in our efforts at dealing with complex issues, there is the possibility that we are not dealing with outright incompatibilities. Instead, we may be encountering different but interdependent aspects of a complex situation. Here, we will practice developing the capacity to identify the key energies in a situation and hold them up together as interdependent goals.

Take a current conflict that has been described as either/or. Listen for them throughout your day and week. Then practice putting them through a simple formula to see if unseen opportunities emerge.

Formula: “How can we address “A” and at the same time build “B”?

As Lederach says, “The ability to position situations as dilemmas, and the capacity to live with apparent contradictions and paradoxes, lies at the heart of transformation. The art of dilemma-posing creates a simple way to see the bigger picture and to move us toward specific action.”⁶⁶

⁶⁵ Adapted from Lederach, John *The Little Book of Conflict Transformation* (Intercourse, PA: Good Books. 2003), 51-52.

⁶⁶ Ibid., 52.

Part 2: Voices of Identity⁶⁷

Issues of identity are at the root of most conflicts.⁶⁸ It is important to learn to hear these voices. They are keys to understanding individual despair as well as the stories that are common to us all. This can be pivotal for reframing. “At the deepest level, identity is lodged in the narratives of how people see themselves, who they are, where they have come from, and what they fear they will become or lose....Identity is also best understood as relational.”⁶⁹ Joseph Campbell calls these our mythic stories – the stories that give our lives meaning. They string the beads of the days and chapters of our lives in a necklace of meaning and metaphor.

Pay attention to the energy and quality of the voice. It expresses information about one’s sense of self, one’s identity, and how a relationship is being experienced and defined – either among people or between people and the resource.

Example: At a forum among farmers, ranchers, the timber industry, environmentalists, public servants from local, state, federal, and tribal governments, each spoke from their position about non-point source water pollution and its contribution to the decline of wild salmon. Their stories all sounded different on their face. Many felt challenged and misunderstood by the others, which lead to tension and conflict in the room. Some got quiet and folded their arms – but in fury and defensiveness. Others expressed frustrations with some of the others with rather aggressive projections. In the end, however, it was possible to sort out that there was a difference between the practices and the mythic stories. All were expressing the same mythic story about themselves. They all saw themselves as stewards of the land and environment; the practices were what differed. They could then see their common goals, and focus their attention on what were acceptable practices to meet their common goals, and how would they achieve this collectively.

Sit with this. How often can you hear a common thread behind the differences? Sometimes we’ll need to sit through many such meetings before we can hear the common story. These common threads are keys to reframing and to progress under Type 3 processes. They align all the energy and resources that are usually spent directing towards one another in conflict or maintaining gridlock.

Try listen for these “mythic stories” at your next public meeting. Then see if there is a common mythic story behind them all.

⁶⁷ Adapted from Lederach, *The Little Book of Conflict Transformation*, 55.

⁶⁸ Ibid., 55.

⁶⁹ Ibid.

Section E. Reframing Problems

We often assume that the problem that is presented is the problem to be solved. It is also common to stay with familiar framing because entering into an inquiry about highly complex, dynamic challenges seems fruitless. We assume that people can't work together in the face of different political beliefs, economic pressures, scarcity of the resource, and cultural differences. We think that keeping it simple will get us to a resolution quicker.

Exercise III.3: Reframing Problems

Exercise to be conducted in-class or as take home exercise.

Objectives

Practice skills that help with transformative reframing of conflict, as well as listening/sensing skills that shift awareness to a sense of wholeness.

Instructions/Additional Information

Part 1: Newspaper article.

Read the article given to you or one from your local newspaper or online. Consider the following questions:

1. What are the assumptions?
2. What assumptions are not challenged?
3. How would the solution to the problem change if the(se) assumption(s) were challenged?
4. What might the headline look like?

It is not infrequent that cultural/social norms are taken for granted and never explored for their contribution to the problem being reported on.

Part 2: Reframing Complex Resource Issues

For conflicts that chronically occur or are part of a larger, systemic pattern of conflicts, we need to examine the framing of the problem. While simplistic framing is tempting, holistic framing may be necessary to make any real progress.

Reframing a problem is an art that can be cultivated. It requires being able to track to the root of a problem and not get distracted by the symptoms. It can be hard to see much less step out of cultural framing of problems. For example, several laws and budgets respond to symptoms of problems. This framing then shapes the way we think about the framing of problems.

Examples

1. From “Wildland Fire, Declining Species, Invasive Species, Community Hazard, and Challenged Western Rural Economies” to “Restoring Ecosystem Health”

In the summer of 2000, the West was experiencing one of its worst fire seasons in history. Five bi-partisan western governors met with the Administration to discuss emergency federal funding for fire suppression, and the concerns over the escalating fire threat throughout the West. Further, with more people building their homes in the wildland-urban interface, there was expensive private property and sometimes lives in the paths of these fires. Finally, many of the intermountain West’s forests had been logged of the large Ponderosa pine and old growth in the 20th Century. Invasive weeds, dog-haired stands of small-diameter pines, declining species that depended on these forests, accompanied the intensifying fire threat. Costs were going through the roof to deal with all of these – the supplemental budget for that fire season alone was \$4.2 billion.

The reframing at the meeting: the fires were a symptom of declining forest ecosystem health, as were the invasive species, dog-haired stands, and increasing numbers of threatened and endangered species across the intermountain West.

The Result: “A Collaborative Approach to Reducing Wildland Fire Risks to Communities and the Environment: A 10-year Comprehensive Strategy” – a consensus document among agencies and diverse interests groups addressing forest ecosystem health, homes and communities in the wildland-urban interface, providing rural economic opportunities while reducing hazardous fuel levels including using small-diameter wood and other previously unused materials of the forest as byproducts from forest health treatments, and improving prevention and suppression. (See <http://forestsandrangelands.gov/plan/documents/7-19-en.pdf>)

2. In 1996, Governor John Kitzhaber of Oregon faced Endangered Species Act listings of salmon along the Oregon Coast with the potential for further listings across the State. The State had also been sued and lost for water quality limits in dozens and dozens of streams across the state. The culprit was non-point source pollution, and there were few known programmatic ways to address such a diverse range of non-point sources contributing to the problems. In an interview in 2004, he describes the process he went through of thinking about the complex nature of these presenting problems, and how he ultimately concluded that instead of focusing on **“Endangered Species Listings and water quality limited streams under the Clean Water Act”** that he needed to be thinking and talking about **“restoring salmon and watersheds across Oregon.”** This

led to a statewide program called “The Oregon Plan for Salmon and Watersheds” administered by a new agency, the Oregon Watershed Enhancement Board, in conjunction with several other state, federal, local and tribal partners, including 92 new watershed councils across the state. Several millions of dollars are available annually from state, federal and matching sources (in-kind, private funds, local funds, leveraged funds, etc.) to do restoration work on Oregon’s waters and watersheds. None of these dollars were available prior to The Oregon Plan (see interview with former-Governor John Kitzhaber – Section F).

Now, try your hand with a current natural resource issue you are familiar with:

1. Describe how it is framed.
2. Practice reframing.

The following pointers will help you create a new frame for the complex problem you are dealing with:

1. Listen for identities and a common mythic story. Describe a vision that everyone can see themselves within;
2. Consider using “health,” “quality,” and/or restoration of systems.
3. Think in multiple timeframes: frame in ways that speak to short-term response as well as mid- to long-term strategies for change. Words that encompass such a time horizon may be expressed in the words like “sustainable.”

Section F. Supplemental Reading for Module III

Western Governors' Association. "Policy Resolution 07-4: "Watershed Restoration Through Partnerships," Denver, CO: Western Governors' Association, 2007.

Western Governors' Association. "Policy Resolution 02-07: Principles for Environmental Management in the West," Denver, CO: Western Governors' Association, 2002.

Kitzhaber, John. "Western Governors' Association Enlibra Speech." Western Governors' Association Meeting. Denver, CO. 4 Dec. 1998.

Kitzhaber, John. Personal interview. 3 Aug. 2004.

The Oquirrh Institute. Introduction and Overview: Chapter 1. in *The Enlibra Toolkit: Principles and Tools for Environmental Management*. Salt Lake City, UT: The Oquirrh Institute, 2003.

Senge, Peter, and C. Otto Scharmer, and Joseph Jaworski, and Betty Flowers. "Awakening faith in an alternative future." *Reflections* 5, no. 7 (2004): 1-16.

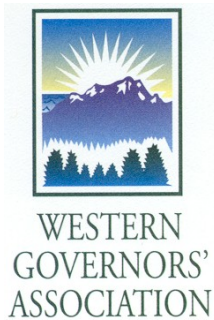
Sadoff, Claudia W. and David Grey. "Beyond the river: the benefits of cooperation on international rivers." *Water Policy* 4, no. 5 (2002): 389-403.

Not included in workbook:

Western Governors' Association, "A Collaborative Approach to Reducing Wildland Fire Risks to Communities and the Environment: A 10-year Comprehensive Strategy," Denver, CO: Western Governors' Association, n.d.

Western Governors' Association Policy Resolution 07-4: "Watershed Restoration Through Partnerships"

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Western Governors' Association Policy Resolution 07-4

Watershed Restoration Through Partnerships

A. BACKGROUND

1. The West's water system has historically been a source of pride and tremendous benefit to the West. Intrinsically linked to the West's water system is Western forest health. Healthy forests provide numerous water related benefits including an increase in both water quality, partly due to a reduction in erosion and sedimentation, as well as water quantity. Over the years, the social, economic and ecological landscapes within which water is appropriated and utilized has undergone a sea change. Forest health has deteriorated, the needs that must be met and interests that must be served have only become more numerous, and although the water system has adapted to try to keep up with the changes, it will continue to struggle to do so unless cooperative and creative efforts are implemented. The West recognizes that the near gridlock resulting from increasing pressures on water resources—rapid urban growth, recognition of Indian water rights, need for protection of endangered species, opposition to active forest health management, requirements for improved water quality to meet the Clean Water Act, concern for in-stream and other environmental values, scarce public funds, conflicting and overlapping laws and programs, polarized positions among competing parties, and projections for long-term drought due to climate change—continues. No one entity can address all of these pressures.

In the early 90's, the Governors developed a new vision of Western water management that would encourage addressing these varied and various problems through a more holistic approach. This vision has since been referred to as the "Park City Paradigm." Many individual states have since resolved many complex problems guided by its principles. The Park City Principles are consistent with the subsequently developed Enlibra Principles.

2. In keeping with the Governor's principles calling for neighborhood solutions to national problems, increasingly, Governors are looking to watershed councils and broad stakeholder, community-based groups within watersheds to reach consensus on solutions to complex water problems. In this manner, solutions are tailored to the site specific situation, and localities take ownership of those solutions.

B. GOVERNORS' POLICY STATEMENT

1. Water quality restoration is essential for economic and environmental sustainability of forestry, agriculture, fisheries, manufacturing, recreation and public water supply.
2. The Western Governors acknowledge that water quality restoration in the West is linked to the restoration and maintenance of Western forest health. More than two-thirds of water runoff comes from forested watersheds in this country. Upstream land and forest resource management of watersheds is a much cheaper alternative to expensive filtration and infrastructure improvements downstream.
3. The Western Governors favor collaborative, incentive driven, locally based solutions to environmental and natural resource problems, such as watershed restoration.
4. The Governors continue to endorse the Park City Paradigm to guide water management. Its guiding principles are:
 - a. There should be meaningful legal and administrative recognition of diverse interests in water resource values.
 - b. Problems should be approached in a holistic or systemic way that recognizes cross-cutting issues, cross-border impacts and concerns, and the multiple needs within the broader "problemshed" – the area that encompasses the problem and all the affected interests. The capacity to exercise governmental authority at problemshed, especially basinwide, levels must be provided to enable and facilitate direct interactions and accommodate interests among affected parties.
 - c. The policy framework should be responsive to economic, social and environmental considerations. Policies must be flexible and yet provide some level of predictability. In addition, they must be able to adapt to changing conditions, needs and values; accommodate complexity; and allow managers to act in the face of uncertainty.
 - d. Authority and accountability should be decentralized within national policy parameters. This includes a general federal policy of recognizing and supporting the key role of states in water management as well as delegation to states and tribes of specific water-related federal programs patterned after the model of water quality enforcement.
 - e. Negotiation and market-like approaches as well as performance standards are preferred over command and control patterns.
 - f. Broadly based state and basin participation in federal program policy development and administration is encouraged, as is comparable federal participation in state forums and processes.

5. Implementing these water management principles can be expensive and beyond the ability of some states to fund. However, the benefits of managing the resource in this manner are significant. Therefore, the Western Governors encourage federal agencies to look for opportunities to use existing authority to provide funding, flexibility in funding, and/or shared or loaned personnel to states to help them address specific watershed problems.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. This resolution is to be posted on the Western Governors' Association Web site and it should be referenced and used as appropriate by Governors and staff.
2. WGA is to monitor any related legislation and implementing regulations and to work with the appropriate public policy organizations in support of the Governors' policies.

This resolution was originally adopted as Policy Resolution 98-011 in 1998 and was readopted as Resolution 01-12 and 04-08.

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Western Governors' Association Policy Resolution 02-07: "Principles for Environmental Management in the West"

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Policy Resolution 02-07

Principles for Environmental Management in the West

Annual Meeting
June 25, 2002
Phoenix, Arizona

SPONSORS: Governors Kitzhaber and Leavitt

A. BACKGROUND

Vision Statement

1. The people of the West face a common challenge. The quality of life we cherish is threatened in part by our own successes as our rapid growth impacts much of the environmental quality and many of the natural resource systems that characterize our region. A number of factors illustrate the change that is occurring.
 - \$ Throughout the 1990s, the population growth rate in the Western United States has surpassed that of every other region of the country, in part because of the draw of the Western quality of life and magnificent landscapes. Population mobility and growth and the resulting increased diversity in values are changing both the political dynamics and the region's economy.
 - \$ While its historic base of natural resource-related industries, such as farming, fishing, mining, and wood products, remains important, the West has diversified dramatically and now counts telecommunications, tourism, recreation services, transportation, information technologies, software and entertainment companies among its larger employers.
 - \$ Globalization of markets, changing preferences, substitute materials, and availability of natural resources have affected the competitiveness and resiliency of many Western communities. Communities must work to retool, adjust and diversify to remain competitive.
 - \$ At the same time, the nature of environmental and natural resource problems is changing. As large, easily identified sources of pollution are controlled, the threat to the environment has shifted to diffuse, numerous, and smaller-scale sources. Our sheer numbers and consumption habits make environmental progress increasingly dependent on the daily behaviors and decisions made by every individual.
 - \$ Agricultural consolidation and dispersed development have affected land-use patterns resulting in a wide range of economic and environmental impacts. Impacts range from impaired air quality from increasing numbers

of commuters and miles traveled, to fragmented habitats and disrupted migration routes for wildlife. Good stewardship born of locally controlled and economically sustainable agriculture may also suffer.

\$ New computer and communications technologies, as well as new environmental monitoring and characterization technologies, create opportunities for innovative solutions to preserve and enhance the environment and communities of the West.

There is a lot at stake. Westerners enjoy majestic mountains, forests, streams and lakes, as well as beautiful deserts, plains and coastlines. This landscape includes the vast public lands, national parks and forests, wilderness areas and refuges, military bases, tribal lands, state and local public lands, and highly productive private lands. This landscape harbors a wide array of plant and animal life and nurtures a diverse population of people both physically and spiritually. The West's natural resource systems are a source of great wealth and beauty for the region, the nation and the world.

Westerners desire to create a region that will provide our children an extraordinary quality of life. This future embraces a shared sense of stewardship responsibility for our region's natural and cultural assets. It strives to ensure for present and future generations clean water and air, open lands that are beautiful, life-sustaining and productive, and proximity to public recreational opportunities. Equally important is an economy where people of any background or age have opportunities for education and high quality jobs and the ability to contribute to the well-being of their families and fellow citizens.

It must be clear that in implementing this vision, Westerners do not reject the goals and objectives of federal environmental laws, nor the appropriate role of federal regulation and enforcement as a tool to achieve those objectives. Westerners respect treaty rights, sovereignty, property rights and other legal rights, and recognize the responsibilities associated with those rights in addressing our common environmental challenges.

Our future includes a belief that we are better off if we can redirect energy away from polarized battles and toward solving our common problems. It is a vision of rebuilding trust, partnerships and community; of better understanding the cumulative effects of our actions; and of enhancing individual and collective environmental understanding and its associated stewardship. It includes individuals being able to pursue their objectives in ways that build community rather than disrupt it, and commitment to looking for win-win solutions sustainable over time.

2. Over the last decade, the Western Governors have experimented with a variety of ways to improve management of the environment of the West through

collaborative processes. Valuable accomplishments have been achieved while lessons have been learned from development and implementation of the Park City Principles for Water Management, the High Plains Partnership, the Grand Canyon Visibility Transport Commission and its successor the Western Regional Air Partnership, the 10-Year Comprehensive Strategy for Reducing Wildland Fire Risks to Communities and the Environment, the Oregon Plan for Salmon and Watersheds, the Texas Regional Water Supply Planning Process, Trails and Recreational Access for Alaska and the Wyoming Open Lands Initiative. These efforts have built on the collaborative process which has shown repeated promise, and have demonstrated that the environmental strategies that work best have strong commitment from state and local government, vested local support, and federal collaboration.

3. The Western Governors' Association and the White House Council on Environmental Quality co-sponsored the Environmental Summit on the West II in Salt Lake City in April 2002. The purpose of the Summit was to engage government leaders and diverse stakeholder to review the issues facing the West and to examine how the principles below adopted by the Governors in 1999 were assisting in addressing the challenges faced by the West and how they may continue to do so in the future.
4. In summary, mindful of our rich Western heritage, recognizing the need to sustain a vibrant Western economy, convinced of the importance of protecting and enhancing the environment for the well-being of present and future generations, and acknowledging the benefits of existing and new approaches to environmental management, Governors and other Westerners with diverse experience have agreed to the principles that follow. The principles have come to be known as the Enlibra principles, Enlibra being a newly created word meaning balance and stewardship.

B. GOVERNORS' POLICY STATEMENT

1. The Western Governors renew their commitment to the Enlibra principles to guide natural resource and environmental policy development and decision-making in the West. The doctrine is based upon the principles below, each of which is dependent upon the others. The integration of these principles is critical to their interpretation and the success of the new doctrine.

National Standards, Neighborhood Solutions - Assign Responsibilities at the Right Level

There is full acknowledgment that there are environmental issues of national interest ranging from management of public lands to air and water quality protection. Public processes are used to identify and protect the collective values of the nation's public. No existing laws or identified legal rights and

responsibilities are rejected. The role of the federal government is supported in passing laws that protect these values as well as setting national standards and objectives that identify the appropriate uses and levels of protection to be achieved. As the federal government sets national standards, they should consult with the states, tribes and local governments as well as other concerned stakeholders in order to access data and other important information. When environmental standards have not been historically within the federal jurisdiction, non-federal governments retain their standard setting and enforcing functions to ensure consideration of unique, local-level circumstances and to ensure community involvement.

With standards and objectives identified, there should be flexibility for non-federal governments to develop their own plans to achieve them, and to provide accountability. Plans that consider more localized ecological, economic, social and political factors can have the advantage of having more public support and involvement and therefore can reach national standards more efficiently and effectively.

Governments should reward innovation and take responsibility for achieving environmental goals. They should support this type of empowerment for any level of government that can demonstrate its ability to meet or exceed standards and goals through locally or regionally tailored plans. The federal government should support non-federal efforts in this regard with funds and technical assistance. In the event that no government or community is progressing toward specific place-based plans, the federal government should become more actively involved in meeting the standards.

Collaboration, Not Polarization - Use Collaborative Processes to Break Down Barriers and Find Solutions

The regulatory tools we have been relying on over the last quarter of a century are reaching the point of diminishing returns. In addition, environmental issues tend to be highly polarizing, leading to destructive battles that do not necessarily achieve environmental goals. Successful environmental policy implementation is best accomplished through balanced, open and inclusive approaches at the ground level, where interested stakeholders work together to formulate critical issue statements and develop locally based solutions to those issues. Collaborative approaches often result in greater satisfaction with outcomes and broader public support, and can increase the chances of involved parties staying committed over time to the solution and its implementation. Additionally, collaborative mechanisms may save costs when compared with traditional means of policy development. Given the often local nature of collaborative processes, it may be necessary for public and private interests to provide resources to ensure these processes are transparent, have broad participation and are supported with good technical information.

Reward Results, Not Programs - Move to a Performance-Based System

A clean and safe environment will best be achieved when government actions are focused on outcomes, not programs, and when innovative approaches to achieving desired outcomes are rewarded. Federal, state and local policies should encourage "outside the box" thinking in the development of strategies to achieve desired outcomes. Solving problems rather than just complying with programs should be rewarded.

Science For Facts, Process for Priorities - Separate Subjective Choices from Objective Data Gathering

Environmental science is complex and uncertainties exist in most scientific findings. In addressing scientific uncertainties that underlie most environmental issues and decisions, competing interests usually point to scientific conclusions supporting their view and ignore or attack conflicting or insufficient information. This situation allows interests to hold polarized positions, and interferes with reconciling the problems at hand. It may also leave stakeholders in denial over readily perceived environmental problems. This in turn reduces public confidence and raises the stridency of debate. Critical, preventive steps may never be taken as a result, and this may lead to more costly environmental protection than would otherwise be required.

A better approach is to reach agreement on the underlying facts as well as the range of uncertainty surrounding the environmental question at hand before trying to frame the choices to be made. This approach should use a public, balanced and inclusive collaborative process and a range of respected scientists and peer-reviewed science. Such a process promotes quality assurance and quality control mechanisms to evaluate the credibility of scientific conclusions. It can also help stakeholders and decision-makers understand the underlying science and its limitations before decisions are made. If a collaborative process among the stakeholders does not resolve scientific disagreements, decision-makers must evaluate the differing scientific information and make the difficult policy choices. Decision-makers should use ongoing scientific monitoring information to adapt their management decisions as necessary.

Markets Before Mandates - Pursue Economic Incentives Whenever Appropriate

While most individuals, businesses, and institutions want to protect the environment and achieve desired environmental outcomes at the lowest cost to society, many environmental programs require the use of specific technologies and processes to achieve these outcomes. Reliance on the threat of enforcement action to force compliance with technology or process requirements may result in adequate environmental protection. However, market-based approaches and economic incentives often result in more efficient and cost-effective results and may lead to more rapid compliance. These approaches also reward environmental

performance, promote economic health, encourage innovation and increase trust among government, industry and the public.

Change A Heart, Change A Nation - Environmental Understanding is Crucial

Governments at all levels can develop policies, programs and procedures for protecting the environment. Yet the success of these policies ultimately depends on the daily choices of our citizens. Beginning with the nation's youth, people need to understand their relationship with the environment. They need to understand the importance of sustaining and enhancing their surroundings for themselves and future generations. If we are able to achieve a healthy environment, it will be because citizens understand that a healthy environment is critical to the social and economic health of the nation. Government has a role in educating people about stewardship of natural resources. One important way for government to promote individual responsibility is by rewarding those who meet their stewardship responsibilities.

Recognition of Benefits and Costs - Make Sure All Decisions Affecting Infrastructure, Development and Environment are Fully Informed

The implementation of environmental policies and programs should be guided by an assessment of the costs and benefits of different options across the affected geographic range. To best understand opportunities for win-win solutions, cost and benefit assessments should look at life-cycle costs and economic externalities imposed on those who do not participate in key transactions. These assessments can illustrate the relative advantages of various methods of achieving common public goals. However, not all benefits and costs can be easily quantified or translated into dollars. There may be other non-economic factors such as equity within and across generations that should also be fully considered and integrated into every assessment of options. The assessment of options should consider all of the social, legal, economic and political factors while ensuring that neither quantitative nor qualitative factors dominate.

Solutions Transcend Political Boundaries - Use Appropriate Geographic Boundaries for Environmental Problems

Many of the environmental challenges in the West cross political and agency boundaries. For example, environmental management issues often fall within natural basins. These are often transboundary water or air sheds. Focusing on the natural boundaries of the problem helps identify the appropriate science, possible markets, cross-border issues, and the full range of affected interests and governments that should participate and facilitate solutions. Voluntary interstate strategies as well as other partnerships are important tools as well.

2. The Western Governors invite state, local and Native American leaders, environmental organizations, the private sector, Congress and the Administration to embrace these principles in their environmental and natural resources policy work and decision-making.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. The Western Governors' Association (WGA) shall post this resolution on its Web site to be used and referred to as necessary.
2. WGA shall incorporate these principles into its projects and activities in environmental and natural resources policy development and shall work with the states to identify specific areas where they have been demonstrated and adopted or may be in the future. As resources allow and in conjunction with its Enlibra Steering and Advisory Committees, WGA shall promote the principles and engage and evaluate appropriate projects that seek to advance its principles. Also, as resources allow, WGA shall communicate the commitment of the Governors to these principles to organizations, institutions and media concerned with environmental protection and natural resources management.

This resolution was originally adopted in 1999 as WGA Policy Resolution 99-013

Approval of a WGA resolution requires an affirmative vote of two-thirds of the Board of the Directors present at the meeting. Dissenting votes, if any, are indicated in the resolution. The Board of Directors is comprised of the governors of Alaska, American Samoa, Arizona, California, Colorado, Guam, Hawaii, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Northern Mariana Islands, Oregon, South Dakota, Texas, Utah, Washington and Wyoming.

All policy resolutions are posted on the WGA Web site (www.westgov.org) or you may request a copy by writing or calling:

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**Introduction and Overview: Chapter 1, “The Enlibra Toolkit:
Principles and Tools for Environmental Management”**

CHAPTER



Recent, massive losses of farmland affect the economy and the environment.

In the 21st century, we face a critical challenge. The quality of life we cherish is threatened – in part by our own success – as our rapid growth affects the environment and many of the natural resource systems we rely on. At the same time, the complexity and urgency of environmental problems have grown. For example:

- According to the U.S. Fish and Wildlife Service, 1,263 species have been listed as endangered since 1967 but only 25 have been removed from the list due to recovery, extinction or other factors.
- Between 1992 and 1997, nearly 16 million acres of farmland were lost. This loss is not only an economic loss

to communities but also a loss of open space and habitat.

- Drainage and runoff from abandoned and inactive mines, agricultural and silvicultural practices, and urban activities have severely affected several thousand miles of streams.
- Seventy million acres of land in the West have been severely affected by weed infestations, causing an estimated \$138 billion in economic damages. These infestations are a factor in the listing of 42 percent of all species under the Endangered Species Act.

Many of the tools we have used for environmental management, protection and restoration are reaching the limits of their effectiveness, yet problems remain and grow. No longer are we just cleaning up the waste from the end of a pipe; now we are challenged with cleaning up and restoring health to entire watersheds and the wildlife and communities that live there.

The threat to the environment has shifted to diffuse numerous and smaller-scale sources, and our sheer numbers and consumption habits make environmental progress increasingly dependent on the daily

We do have choices. We can have a bright future, but much of the future will depend on how we view our problems.

behaviors and decisions made by every individual. Intricate links to economies and social structures may hang in the balance, depending on how environmental needs are met.

The complexity of today's environmental problems has been accompanied by greater polarization, often around simplified positions and a greater intensity of conflict. This is because:

- The cumulative effects of our actions have produced unexpected and poorly understood outcomes, making accountability for action difficult and finger-pointing easier.
- Judicial and legislative resolution of problems is slow and rarely comprehensive.
- Future environmental goals cannot be met by any one level of government, sector of society or one single set of strategies.
- Lasting and restorative solutions are beyond many of our governance tools – leading to a need for tools that can address problems more holistically and for participation by everyone who has authority or a piece

of the puzzle. These may include state, federal, tribal and local agencies, as well as private industries, environmental groups, landowners and the public at large.

- Today's choices are fewer and more difficult because yesterday's choices have reduced the resiliency of natural systems and have narrowed what is possible.

We do have choices. We can have a bright future, but much of the future will depend on how we view our problems. Do we view problems as shared? Do we experiment with and refine new tools, systems and guiding frameworks to lead us to more holistic, responsive solutions? Can we work within the constraints we have today and recognize that much of the challenge is overcoming our perception of one another and our sense of the intractability of our problems?

The Western governors concluded that there was a better way and adopted a resolution detailing their vision in 1999. They said:

"Westerners desire to create a region that will provide our children an extraordinary quality of life. This future embraces a shared sense of stewardship responsibility for our region's natural and cultural assets. It strives to ensure for present and future generations clean water and air, open lands that are beautiful, life sustaining and productive, and proximity to

public recreational opportunities. Equally important is an economy where people of any background or age have opportunities for education and high-quality jobs and the ability to contribute to the well-being of their families and fellow citizens.

"Our future includes a belief that we are better off if we can redirect energy away from polarized battles and toward solving our common problems. It is a vision of rebuilding trust, partnership and community; of better understanding the cumulative effects of our actions; and of enhancing individual and collective environmental understanding and its associated stewardship. It includes individuals being able to pursue their objectives in ways that build community rather than disrupt it, and commitment to looking for win-win solutions sustainable over time."

The governors then described in detail eight principles that, taken together, offer a way through today's complex environmental problems. These eight interdependent principles have been called "Enlibra" – a word that connotes coming into balance.

- *Reward Results, Not Programs:* Move to a performance-based system.
- *National Standards, Neighborhood Solutions:* Assign responsibilities at the right level.

- *Solutions Transcend Political Boundaries:* Use appropriate geographic boundaries for environmental problems.
- *Collaboration, Not Polarization:* Use collaborative processes to break down barriers and find solutions.
- *Markets Before Mandates:* Pursue economic incentives whenever appropriate.
- *Science for Facts, Process for Priorities:* Separate subjective choices from objective data gathering.
- *Recognition of Benefits and Costs:* Make sure all decisions that affect infrastructure, development and the environment are fully informed.
- *Change a Heart, Change a Nation:* Environmental understanding is crucial.

Around the West and even around the world, communities and governments have been experimenting with more collaborative, decentralized yet coordinated, science-based environmental decision-making and stewardship with impressive results.

In December 1998 at a Western Governors' Association meeting, Governors Mike Leavitt, R-Utah, and John Kitzhaber,

D-Oregon, were describing their own experiences and successes with collaborative yet comprehensive efforts.

Leavitt was chairing an effort addressing regional air quality and haze impacts to the Grand Canyon. Kitzhaber was in his third year of working with landowners, technical experts and participants throughout Oregon to restore watershed health and the salmon that are integral to the region's heritage and future.

Both saw that the solutions they were nurturing could do more to meet society's goals for the health of the environment than existing laws could compel. Both sensed that the commitments being made would be sustained through time and that real progress in improving environmental health could be made. Both saw the power and value of everyone working together on a shared problem – sharing perspectives, gaining a greater understanding of the science and legal parameters and collectively designing and committing to a common plan for action. Both plans relied on a mix of regulations, incentives and voluntary actions.

In listening to each other, it was clear that the governors shared a common philosophy – a concept that was being used at many different levels of government to address an array of complex environmental problems and that could be used more widely. The governors

decided to extract the common principles from these experiences and “give voice” to this philosophy – an effective way of tackling tough 21st century problems. They named it “Enlibra” to distinguish it from other philosophies or doctrines.

These principles and their descriptions later were “ground-truthed” with more than 400 participants from across the nation at an Environmental Summit of the West in December 1998.

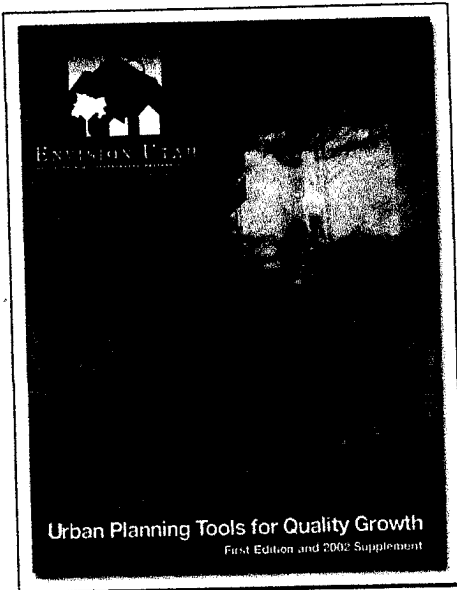
Ultimately, a refined description of Enlibra was adopted as policy by the Western Governors’ Association (WGA) and subsequently by the National Governors Association and a host of other government, corporate and nongovernment organizations and associations.

In April 2002, the WGA sponsored a second Environmental Summit on the West, where participants presented case studies and discussed how to apply Enlibra in real-life situations. This summit made clear the need to present Enlibra to the public on a nationwide scale.

To deal with increasingly complex environmental problems, decision-makers and participants need the Enlibra tools to make more informed environmental decisions. It is important to know what Enlibra is and is not:

As environmental problems become more and more complex, they require sustained efforts that cannot be solved with legislation alone.

- *Enlibra is not* a rejection of the goals and objectives of federal environmental laws, nor is it a rejection of the federal role in regulation and enforcement to achieve those objectives.
 - *Enlibra is not* a rejection of treaty rights, sovereignty or any other legal rights.
 - *Enlibra is not* a rejection of court access and outcomes.
 - *Enlibra is not* a belief that this approach will end conflict or even that conflict is bad. It is not a request to various constituencies to give up their positions. Rather, it is an opportunity to look beyond conflicting positions to collectively make progress. In fact, conflict is often a necessary precursor to achieving cooperation and collaboration.
 - *Enlibra does* represent a realization that we all are dealing with increasingly complex environmental problems, and tools that can accommodate this complexity are becoming more and more necessary.
 - *Enlibra is* a belief that we need to empower people to do the right thing, and empowerment can be accomplished only if it is done with a stick and no carrot. As environmental problems become more and more complex, they require sustained efforts that cannot be solved with legislation alone.
 - *Enlibra is* a belief that environmental improvements depend on a citizenry that understands its relationship with the environment and its responsibilities for stewardship. This requires good information and an inclusive process that respects different attitudes and values and provides individuals with a role in designing and implementing solutions collectively.
- Enlibra offers a vision of more inclusive, collaborative processes for defining problems and their solutions; the imperative use of good science, not only for technical reasons but to achieve public and political acceptance; and market-based approaches including



Envision Utah is one example of the Enlibra principles in action (see page 6). Throughout this Toolkit, several other case studies illustrate individual principles and how they can be applied to environmental issues.

incentives and trading of credits that stimulate better outcomes at lower costs.

Enlibra encourages higher levels of responsibility, accountability, commitment and stewardship by businesses, nonprofit organizations, government agencies and individual citizens. It also offers the means to identify the right scale and scope to address problems, methods to identify the people who should be at the table and a compelling argument in favor of locally tailored courses of action that meet or exceed national standards.

These principles, taken and applied together, have led communities through

difficult conflicts to generate collectively held decisions and courses of action. Although Enlibra provides a means to tackle problems successfully, it is best to address these challenges with humility. There are no guarantees. Many of these conflicts have roots that extend for generations. It is not easy to reframe an issue to account for common needs and the opportunities that working together can bring.

Moreover, finding solutions is more than walking through a set of principles. Experience demonstrates that a common commitment to problem-solving is needed. If pivotal players favor no action or another venue for their attention and efforts, applying the Enlibra principles to reach positive outcomes will be difficult. Success also is more likely when Enlibra is used to respond to a crisis or a calling from a leader; when a unifying and compelling vision illuminates the need for resolution and action; or where a deeper sense of commitment binds individual participants with a greater whole.

The following chapters explain each of the Enlibra principles in detail and offer examples of their application to problems of environmental management.

The Enlibra Toolkit is a hands-on document for private citizens, businesses, interest groups and government leaders.

Each chapter explains a principle and cites examples of projects in which one or more of the Enlibra principles have been applied. The principles reinforce one another and pair the Enlibra philosophy of balance with a common-sense approach.

Case studies introduce some chapters and also are contained in colored text boxes. Each chapter also contains a section on **tools**, where applicable, to suggest ways in which these principles can be applied.

Each chapter also identifies a set of **lessons learned** gathered from people who have experience putting these principles into action. These lessons highlight key points to keep in mind when applying the Enlibra philosophy.

Each chapter ends with a **"For More Information"** section. This section contains a bibliography, Internet resources and end notes that supplement the main text and identify sources of further information.

The Toolkit will be improved and revised as users share their own experiences. The final page of the Toolkit provides information on how to contact the Oquirrh Institute to pass along your thoughts and examples of Enlibra in action.

Governor Kitzhaber's WGA December 1998 Enlibra Speech

Governor John Kitzhaber

WGA Enlibra Speech

December 4, 1998

Standing here tonight in this incredible setting, I am reminded again why so many people are drawn to the West. The West is a place of special places like this canyon -- places that are not only beautiful, but which have the power to inspire and fill us with wonder and awe.

This sense of awe defines the West. We are touched by its landscapes and shaped by its ruggedness.

But the West is growing. More people, more roads, more buildings, more conflict -- and a growing sense that what has defined us as a region is slipping away.

We are learning -- hopefully not too late -- that if the West is to remain in Wallace Stegner's words, "the native home of hope" -- then we must develop new tools and new approaches to deal with the growth that besets us and the environmental challenges and conflicts that come with it.

And that is the purpose of this conference -- to explore the possibility of developing a new shared doctrine for environmental management -- a new perspective, new tools and a new approach. And I want to thank all who have agreed to participate in this exercise. I realize that there are many here who come from quite opposite but equally entrenched positions concerning environmental issues. And I am also aware that there remains much skepticism about this effort. I ask only that you keep your minds and hearts open to the possibility of a different way of pursuing our individual objectives in a way that builds community rather than disrupts it.

At the same time I want to make it clear that, while I am convinced that a new more collaborative and less confrontational approach is needed, I do not reject the tools of the past, nor take lightly the significant gains they have achieved.

Sometimes conflict is a necessary prerequisite for collaboration. In fact, much of the progress we have made on behalf of our natural environment in the last few decades has been the result of conflict and confrontation -- which is a point worth noting.

There has always been a tension in the West -- between economic development and the powerful landscapes that define this region -- between the extraction of natural resources and concern over long-term environmental stewardship.

And for decades economic development and natural resource extraction in the West were pursued with a single-mindedness that has left scars upon the land. At

the same time, these same activities brought with them significant economic benefits to the region and to its people. Not surprisingly, this collision of legitimate values led to an escalating conflict. People took stakes in both sides of this debate. We call them stakeholders today and many are represented here this evening. The primary battlegrounds were the U.S. Congress, state legislatures and the courts.

The conflict between stakeholders led to the passage of such significant environmental legislation as the Clean Air Act in 1970, the Clean Water Act in 1973 and the Endangered Species Act in 1973. Court battles over the implementation of this legislation -- in particular the Endangered Species Act, led to a wave of regional and more holistic planning on federal lands, beginning with the Northwest Forest Plan. The listing of the Delta Smelt led to a major clean up effort in San Francisco Bay.

Indeed, I have employed the tools of confrontation and litigation myself to block the operation of the Winchester Hydroelectric Project on the North Umpqua River near Roseburg, Oregon. Without the use of these traditional tools, the turbines would still be operating -- chewing up the North Umpqua steelhead run. As it is, this remains one of the few projects in the country that had a FERC license and was generating power and was subsequently shut down and the turbines removed.

So my point, in embracing the concept of a shared doctrine for environmental management is not to reject or discredit the tools of the past. I believe in the need for a strong framework of federal environmental laws, I believe in the need to have the ability to enforce them, and I believe in access to the courts. But I also believe -- just as strongly -- that we need to have both the wisdom and the courage to periodically reevaluate the effectiveness of our tools and the way in which we have traditionally applied them.

Let me give you an example -- the Oregon Plan for Salmon and Watersheds. This effort, now more than two years old, has become far more than just a government program -- it has become a statewide, bipartisan commitment in Oregon to restore our runs of Coastal Coho and the watersheds in which they spawn.

This kind of collaboration is not new to Oregon. Some sixty years ago, catastrophic fires destroyed hundreds of thousands of acres of forest in Northwest Oregon. Known as the Tillamook Burn, this land came into state ownership. It took a generation to replant the forest, but it was done, tree-by tree by volunteers and by school kids. You'd be surprised how many people you meet in Oregon today that took a school field trip to help replant the Tillamook Burn.

It was the same kind of broad-based collaborative effort that cleaned up the Willamette River in the 1970's under the administration of Governor Tom McCall. It was this community sense of environmental responsibility that let us

to make our beaches public and to pass returnable bottle bill which has made littering tantamount to betraying your roots as an Oregonian.

With that kind of history of cooperation and community response to environmental challenges, the consequences of the listing of the Northern Spotted Owl in 1990 were especially traumatic to Oregonians. And although the end result of this debate was the Northwest Forest Plan, the intervening polarization literally tore communities apart and left scars in parts of rural Oregon that have yet to heal.

As a consequence, when -- shortly after my election in 1994 -- the National Marine Fishery Service gave notice of a possible listing of our coastal coho salmon, I began to look for a better way. In my view, the community that calls itself Oregon could not afford another divisive natural resource war.

On the other hand I was, and remain, deeply committed to the survival of our salmon runs. There is an almost mythic connection with Salmon among the people who live in the Pacific Northwest. It is a powerful connection that cannot be overestimated -- the power of history, the power of identity, the power of the past's promise to the future. But even beyond that, if the salmon runs are not healthy, then our watersheds are not healthy -- and if our watersheds are not healthy then we have truly mortgaged the future. I do not intend to leave that as my legacy.

Thus, it is important to recognize that the objective of the Oregon Plan has never been to avoid a listing under the Endangered Species Act. Rather, the objective has been -- and continues to be -- to make the greatest progress possible in restoring species and restoring watersheds.

I also important to recognize that relying solely on the ESA to recover salmon in Oregon would not only have triggered another divisive battle, but would ultimately fail to recover salmon.

We need to remember that the primary role of the federal government under the ESA is a regulatory one. And while regulation has an important role to play, there are limits to its effectiveness. Regulation can keep people from doing the wrong things but it provides no incentive for them to do the right thing.

So while the ESA can prevent landowners from engaging in activities that result in an intentional or unintentional kill, or "take," of a listed species -- it cannot compel them to do more. Yet 60-70 percent of coho habitat lies in private ownership and therefore, recovery will only occur if private landowners undertake restoration activities that go well beyond simply avoiding take.

And in my 20 years of involvement in western state politics, I have experienced over and over again the fact that an approach which involves private landowners

in the decision-making -- which gives them some ownership and investment in the work being done -- has a greater and more immediate positive impact on the resource than simply applying regulations that tell them what to do. Telling people what to do with their land in the West is an explosive proposition.

As a result, the Oregon Plan was designed to involve, empower and incent private landowners to make voluntary commitments to watershed restoration and habitat restoration. The commitments are built on a solid foundation of federal, state and local regulation -- including harvest limits, Clean Water Act requirements, forest practice requirements, land use laws, state water law, and so forth.

But the increment that will make a difference in how quickly and successfully we recover salmon and watersheds comes largely from the voluntary commitments by landowners and communities working alone or through their local watershed councils.

While skeptics of the Plan have underrated some of these voluntary actions, they are significant. The timber industry has committed to make \$130 million in road improvements on logging roads and culvert replacement over the next 10 years, not to mention agreeing to a harvest tax to provide \$13.5 million in direct on-the-ground projects. This is far beyond anything that could be legally compelled under the ESA. Furthermore, the Oregon Legislature has offered strong bipartisan support with the appropriation of another \$32 million to support the plan.

Perhaps most exciting of all, however, is how this effort is beginning to change the environmental ethic in our state. The Oregon Business Council has become involved, and over 80 local watershed councils have put in place more 1,200 on-the-ground projects in the last two years. And the enthusiasm continues to grow, despite a court-mandated ESA listing based on pre-Oregon Plan data.

And it is this local cooperative effort to restore watersheds that helps build the kind of grassroots support needed for long-term environmental stewardship. It makes people more aware of the environmental consequences of their action on their land.

And that, to me, is what Enlibra is all about. It is about recognizing the fact that with over 1000 species listed -- the lengthy, complex and contentious process of actually developing recovery plans under the ESA and our other tools will doom many of these species to extinction long before anything happens on the ground. Quite frankly, we don't have the time.

As we approach the 21st Century our environmental problems are becoming more complex and I believe it will be increasingly important to gain this kind of buy-in, ownership and support from individual citizens. Problems of point source pollution, for example, lend themselves well to a regulatory approach. But

reducing nonpoint-source pollution -- one of the major challenges facing us on the Willamette River in Oregon and throughout the West -- will require far more than simply passing laws and regulations. It will require sustained environmental stewardship -- a long-term commitment to change behavior -- by hundreds of thousands of people living in the watershed -- most of them living in the city.

That is not to say that there is no longer a place for the more traditional tools of regulation and litigation. We will always need an underlying framework of environmental law and regulation. We will always need recourse to the courts.

But we are entering a new era of environmental politics -- an era where the very nature and complexity of the problems we face challenge us to seek new strategies for success -- particularly those that call for, and result in, greater individual responsibility and accountability for our air, land and water. You cannot achieve that through regulation; you cannot achieve that through confrontation; you cannot achieve that through the courts.

You can only achieve that through the kind of cooperation and collaboration that the concept of Enlibra seeks to represent.

If I may leave you with one thought, it is simply this: that we cannot underestimate the importance of community or the power of place in shaping the future of the West. In spite of our areas of disagreement, we share a common heritage and will surely leave a common legacy.

Yet as our population increases, as we become more ethnically and culturally diverse, as growth begins to alter our landscape and bring into question the limits of our resources -- we are facing new challenges in knowing who we are as westerners .

We are losing our sense of common purpose and of connection and of community, which have been part of the glue that binds us together as a region and that keeps us from cracking apart into dozens of separate pieces.

Yet that is exactly what is happening -- and that, above all else, is what we must reverse. We must never forget that the West is more than just a special place -- it is a special place to live.

It is the rare quality of life that this region has to offer that has attracted people here from across the nation and around the world. This place is somewhere people want to be.

And if we lose that quality of pace -- that livability -- we essentially lose not only our identity, but our heritage as well.

I recognize that you are all stakeholders in a mighty struggle. The challenge is not to give up on the entrenched positions of your various constituencies. It is to see beyond them. If we can recreate a forest in Oregon, then we can recreate watersheds. If we can find peace in Northern Ireland and in the Middle East, then surely we can find peace in the West

Let me close by returning to the Wallace Stegner quote I cited earlier -- it is from *The Sound of Mountain Water*.

It reads in full "...one cannot be pessimistic about the West. This is the native home of hope. When it fully learns that cooperation, not rugged individualism, is the quality that most characterizes and preserves it, then it will have achieved itself and outlived its origins. Then it has a chance to create a society to match its scenery."

No less than that is our goal. Thank you.

Governor Kitzhaber August 2004 interview with Julia Doermann

Interview with Governor John Kitzhaber on August 3, 2004

Discussion regarding philosophy and thinking behind Oregon's Salmon and Watershed Restoration Initiative

Julia Doermann: Would you talk a bit about how we approached Coastal Coho Salmon restoration? What were the pressures; how did we think about it?

Kitzhaber (JAK): I need to predicate this to say my thinking about the state/fed partnership has evolved dramatically since did the salmon plan. Partly it was the implementation of the salmon plan that has led me to some of my more radical ideas about the partnership, about federalism and about the relationship between the feds and the state in terms of managing natural resources. But I'll try to put myself back to where I was in 1995/1996 when we started this.

Basically, when I came to office the state had just finished going through this really divisive debate over the spotted owl and all the economic dislocation and rancor and the polarization that resulted from that. And it was clear that we were about to be listed – that coastal coho were about ready to be listed. And it struck me that there was a fundamental difference between the spotted owl scenario and this one. And that was primarily the fact that most of the habitat of the coastal coho was on private lands, or at least a significant portion was, whereas we were dealing with a federal public land issue with the spotted owl.

And when you stop and look at the Endangered Species Act (ESA), it is primarily a regulatory tool which is one of the shortcomings of our management systems is that it is based on compulsion. But it is a regulatory tool so it can keep people from taking actions that “take” or kill endangered species but it can't compel them to do anything beyond take avoidance. It's clear to a lot of us I think that what these watersheds need some significant restoration work well beyond what you could compel under the ESA. So if you just applied the ESA you couldn't get the result that you wanted – you couldn't get the result that the ESA was created to produce. Secondly, you would probably get a worse result because you would alienate the private land owners and give them absolutely no incentive to participate.

So the bullet point out of there:

- Regulation is an important tool to have because it keeps people from doing the wrong thing, but no incentive to do the right thing.

So that was the overriding philosophic context, and then we had a very skeletal watershed system in Oregon and it was clear that there had been some remarkable results in terms of consensus building and getting traditionally – stakeholders on opposite sides of the issues together to do remarkable things and it became clear that there was a real power to place, to people, to place-based problemsolving;

people working together to solve a shared problem on behalf of a shared place that transcended a lot of the politics to get to the 3000 foot level. So we essentially said, let's take our existing regulatory framework, which was fairly extensive. We have a Forest Practices Act, land use laws; we have the Clean Water Act; we had a whole host of things. And then build on those a series of voluntary efforts that can take us beyond what we can compel under the ESA and that essentially became the Oregon Plan for Salmon and Watersheds.

Gail Achterman (GA): As you were thinking about that at the early stage, where did you see the feds coming in at all? You saw the listing looming but

JAK: The listing... we've got to be fair here. The timber industry would have never gotten on board if there hadn't been the threat of a listing. To the credit of the timber industry, however, they stayed on board. The agricultural community was harder to consistently reach. Which is two different things – a whole bunch of farmers vs. a relatively smaller number of timber guys. The timber community stayed on once they signed up for the concept. We knew that what we wanted was for the feds to let us use the Salmon Plan as the basis for satisfying the 4(d) rule. What we wanted is we wanted to give private landowners some assurance that if they did this and didn't do that that they wouldn't get nailed under the ESA. Ultimately we did get a "no list" decision.

That was Spring 1997. It was pretty amazing. We were pretty high. It was very special.

Then we started going through these endless hoops...this is when my thinking started to change...of trying to actually get something concrete for these people who in good faith had stepped up to participate. And I remember at one time there were dozens of landowners who were ready to go in and do stream enhancement projects – not even restoration projects – on their streams and we couldn't get permission to do it. Getting it through NMFS was just too much. And they (the landowners) finally threw up their hands and said, "Screw it." It was a case of the regulators losing sight of the forest for the trees.

The purpose of the Salmon Plan was to recover coastal coho salmon. That's what we did it for. It wasn't to avoid a listing. So the question was, if that was the question, what are the means by which you get there? And it was clear to me that just listing the coastal coho salmon wasn't going to get us there. In fact, I would argue that we would be much further behind if they just listed us on the front end. We wouldn't have 100 watershed councils in Oregon today. We wouldn't have landowners still engaged if they just listed on the front end.

Now they did end up listing us. And the thing held together.

All the key players (industry, landowners, etc) were all there, and then you just couldn't get anything done through the bureaucracy. I think that Dan Kemmis

puts it really well. That this is a classic example of a collision between local collaborative problemsolving and what he calls “the procedural republic” which is the complex system of federal agencies, and rules and regulations that are supposed to assure people access to all... stakeholders to federal decisionmakers. Underline that last point. Federal decisionmakers. At the end of the day they make the decisions. And I think that you’ve got to empower local collaborators but you don’t just let them do it in a vacuum. You let them do it with crisp, clear federal standards, and you have to have a way to monitor those standards. You have to meet them. You are not lowering the bar. But you are giving them ownership in the process by which they need to work.

If you think about big environmental legislation – CAA, CWA, ESA, the system responded exactly as it was designed to respond back in the early 1900s by managing conflict. All those laws manage conflict; they don’t solve conflict. They balance conflict. They are regulatory. And we’ve reached the point where that simply doesn’t work anymore. I think the best example is probably the difference between managing point source and nonpoint source pollution. There’s no place in our governmental structure to manage nonpoint source pollution. That’s what watershed councils do as an alternative governance structure.

While I respect the array of federal regulatory laws, they were designed at a different time to deal with a different set of problems. It was designed to compel behavior. It wasn’t designed for an era of limits where you have tension between economic and environmental values. It wasn’t designed to bring people together to solve problems that required their participation of many people. It’s like an operating system. How long would Microsoft last if Bill Gates held onto a 5-year operating system? We’re holding onto a natural resources operating system that is over a hundred years old in some cases.

Senge, et al. "Awakening faith in an alternative future"

Reflections

The SoL Journal
on Knowledge, Learning, and Change



FEATURE ARTICLE

Awakening Faith in an Alternative Future

Peter M. Senge, C. Otto Scharmer,
Joseph Jaworski, and Betty
Sue Flowers

Commentary

Darcy Winslow

Commentary

Elena Diez Pinto

Commentary

Robert Fritz

Awakening Faith in an Alternative Future

A Consideration of *Presence:* *Human Purpose and the Field of the Future*

By Peter M. Senge, C. Otto Scharmer,
Joseph Jaworski, and Betty Sue Flowers

With so many social systems – families, companies, governments, communities and societies – in disarray, it often seems that the future does not look promising. The scenarios we imagine most easily reveal our worst fears rather than the legacy to which we aspire. What can we do? Based on extensive research, first-hand experience, and a multi-year dialogue, Peter Senge, Otto Scharmer, Joseph Jaworski, and Betty Sue Flowers – authors of the new book *Presence: Human Purpose and*

the Field of the Future – have concluded that in order to “create the world anew” we will be called to participate in changes that are both “deeply personal and inherently systemic.” Given Sol’s mission to support the interdependent development of individuals and their institutions, we are delighted to share highlights of the authors’ exploration into the essence of generative learning. The article that follows is based on the introductory chapters of their book.¹ — Sherry Immediato, Publisher



Peter M. Senge



C. Otto Scharmer



Joseph Jaworski



Betty Sue Flowers

Although the four of us came from quite different backgrounds, we did share one thing in common: we had all experienced extraordinary moments of collective presence or awakening, and seen the consequent shifts of large social systems.

One of those moments occurred in South Africa in 1990. Peter was in the hill country north of Johannesburg, coleading a three-day leadership workshop that had been offered for 15 years, but never in South Africa. His colleagues included a black South African and a white South African who were being trained to lead the program on their own in the future. There were 30 people attending; half were white business executives and half, black community organizers. Many took personal risks to participate in the program.

On the last day of the program, the group heard that President F. W. de Klerk was going to give a speech, so they took a break and gathered in front of a television set to watch. This

turned out to be the famous speech that set into motion the ending of apartheid. In the middle, de Klerk began to list all the previously banned black organizations that were now being “unbanned.” Anne Loetsebe, one of the community leaders, was listening with rapt attention. Her face lit up as de Klerk read the name of each organization: the African National Congress (ANC), the Pan Africanist Conference, and so on. Afterwards, she said that as each organization was mentioned, she saw in her mind’s eye the faces of different relatives who would now be coming home.

After the speech the group reconvened and completed the program as usual. Later that afternoon, they watched, as was the custom in the program, a video of Martin Luther King, Jr.’s “I have a dream” speech. This had been banned in South Africa and many of the participants had never seen it before. Finally, the program closed with a “check-out” that gave each person a chance to say whatever he or she wanted. The first four people made lovely comments about how meaningful it had been for them to be there and what they had learned about themselves and about leadership. The fifth person to speak was a tall Afrikaans business executive. This man, like many of his business colleagues, had been reserved and shown little emotion during the program. He now stood and turned to look directly at Anne. “I want you to know that I was raised to think that you were an animal,” he said. And then he began to cry. Anne just held him in her gaze and nodded.

“As I watched this,” says Peter, “I ‘saw’ a huge knot become untied. I don’t know how to describe it except to say it was as if a rope simply became untied and broke apart. I knew intuitively that what had been holding him and so many others prisoners of the past was breaking. They were becoming free. Even though Nelson Mandela was still in the Robben Island prison and free elections were still four years in the future, I never had any doubt from that moment that significant and lasting change would occur in South Africa.”

The four of us shared a common desire to understand better how such moments and the underlying forces for change they signal come about. We felt that what we had written in the past, at best, described the words but left the music largely in the background. Contemporary theories of change seemed, paradoxically, neither narrow enough nor broad enough. The changes in which we will be called upon to participate in the future will be both deeply personal and inherently systemic. The deeper dimensions of transformational change represent a largely unexplored territory both in current management research and in our understanding of leadership in general. As Otto puts it, “This blind spot concerns not the what and how – not what leaders do and how they do it – but the who: who we are and the inner place or source from which we operate, both individually and collectively.”

Of Parts and Wholes

Presence offers a theory of profound change that is both radical and simple, based first on understanding the nature of wholes, and how parts and wholes are interrelated. Our normal way of thinking cheats us. It leads us to think of wholes as made up of many parts, the way a car is made up of wheels, a chassis, and a drive train. In this way of thinking, the whole is assembled from the parts and depends upon them to work effectively. If a part is broken, it must be repaired or replaced. This is a very logical way of thinking about machines. But living systems are different.

Unlike machines, living systems, such as your body or a tree, create themselves. They are not mere assemblages of their parts but are continually growing and changing along with

their elements. Almost 200 years ago, Goethe, the German writer and scientist, argued that this meant we had to think very differently about wholes and parts.

For Goethe, the whole was something dynamic and living that continually comes into being “in concrete manifestations.”² A part, in turn, was a manifestation of the whole, rather than just a component of it. Neither exists without the other. The whole exists through continually manifesting in the parts, and the parts exist as embodiments of the whole. The inventor Buckminster Fuller was fond of holding up his hand and asking people, “What is this?” Invariably, they would respond, “It’s a hand.” He would then point out that the cells that made up that hand were continually dying and regenerating themselves. What seems tangible is continually changing; in fact, a hand is completely re-created within a year or so. So when we see a hand – or an entire body or any living system – as a static “thing,” we are mistaken. “What you see is not a hand,” Fuller would say. “It’s a ‘pattern integrity,’ the universe’s capability to create hands.”³

For Fuller, this “pattern integrity” was the whole of which each particular hand is a “concrete manifestation.” Biologist Rupert Sheldrake calls the underlying organizing pattern the formative field of the organism. “In self-organizing systems at all levels of complexity,” says Sheldrake, “there is a wholeness that depends on a characteristic organizing field of that system, its morphic field.”⁴ Moreover, Sheldrake says, the generative field of a living system extends into its environment and connects the two. For example, every cell contains identical DNA information for the larger organism, yet cells also differentiate as they mature – into eye, heart, or kidney cells, for example. This happens because cells develop a kind of social identity according to their immediate context and what is needed for the health of the larger organism. When a cell’s morphic field deteriorates, its awareness of the larger whole deteriorates. A cell that loses its social identity reverts to blind, undifferentiated cell division, which can ultimately threaten the life of the larger organism. It is what we know as cancer.

To appreciate the relationship between parts and wholes in living systems, we do not need to study nature at the microscopic level. If you gaze up at the nighttime sky, you see all of the sky visible from where you stand. Yet the pupil of your eye, fully open, is less than a centimeter across. Somehow, light from the whole of the sky must be present in the small space of your eye. And if your pupil were only half as large, or only one quarter as large, this would still be so. Light from the entirety of the nighttime sky is present in every space – no matter how small. This is exactly the same phenomenon evident in a hologram. The three-dimensional image created by interacting laser beams can be cut in half indefinitely, and each piece, no matter how small, will still contain the entire image. This reveals what is perhaps the most mysterious aspect of parts and wholes: as physicist Henri Bortoft says, “Everything is in everything.”⁵



When we eventually grasp the wholeness of nature, it can be shocking. In nature, as Bortoft puts it, “The part is a place for the presencing of the whole.”⁶ This is the awareness that is stolen from us when we accept the “machine” worldview of wholes assembled from replaceable parts.

The Emergence of Living Institutions

Nowhere is it more important to understand the relation between parts and wholes than in the evolution of global institutions and the larger systems they collectively create. Arie de Geus, author of *The Living Company*⁷ and a pioneer of the organizational learning movement, says that the twentieth century witnessed the emergence of a new species on earth – that of large institutions, notably, global corporations. This is a historic development. Prior to the last hundred years, there were few examples of globe-spanning institutions. But today, global institutions are proliferating seemingly without bound, along with the global infrastructures they create for finance, distribution and supply, and communication.

It's common to say that trees come from seeds. But how could a tiny seed create a huge tree? Seeds do not contain the resources needed to grow a tree. These must come from the medium or environment within which the tree grows. But the seed does provide something that is crucial: a place where the whole of the tree starts to form. As resources such as water and nutrients are drawn in, the seed organizes the process that generates growth. In a sense, the seed is a gateway through which the future possibility of the living tree emerges.

This new species' expansion is affecting life for almost all other species on the planet. Historically, no individual, tribe, or even nation could alter the global climate, destroy thousands of species, or shift the chemical balance of the atmosphere. Yet that is exactly what is happening today, as our individual actions are mediated and magnified through the growing network of global institutions. That network determines what technologies are developed and how they are applied. It shapes political agendas as national governments respond to the priorities of global business, international trade, and

economic development. It is reshaping social realities as it divides the world between those who benefit from the new global economy and those who do not. And it is propagating a global culture of instant communication, individualism, and material acquisition that threatens traditional family, religious, and social structures. In short, the emergence of global institutions represents a dramatic shift in the conditions for life on the planet.

It may seem odd to think about titanic forces such as globalization and the information revolution as arising from the actions of a new species. But it is also empowering. Rather than attributing the changes sweeping the world to a handful of all-powerful individuals or faceless “systems,” we can view them as the consequences of a life form that, like any life form, has the potential to grow, learn, and evolve. But until that potential is activated, industrial-age institutions will continue to expand blindly, unaware of their part in a larger whole or of the consequences of their growth, like cells that have lost their social identity and reverted to undifferentiated growth for its own sake.

The species of global institutions reshaping the world includes non-business organizations as well. Today, for example, it's possible to enter an urban school in China or India or Brazil and immediately recognize a way of organizing education that has become completely taken for granted in the West. Students sit passively in separate classrooms. Everything is coordinated by a predetermined plan, with bells and whistles marking time, and tests and grades to keep things moving like one giant assembly line. Indeed, it was the assembly line that inspired the industrial-age school design, with the aim of producing a uniform, standardized product

as efficiently as possible. Though the need to encourage thoughtful, knowledgeable, compassionate global citizens in the twenty-first century differs profoundly from the need to train factory workers in the nineteenth century, the industrial-age school continues to expand, largely unaffected by the new realities within which children are growing up in the present day.

As Buckminster Fuller pointed out, a living system continually re-creates itself. But how this occurs in social systems such as global institutions depends on both our individual and collective level of awareness. For example, each individual school is both a whole unto itself and a part, a place for the “presencing” of the larger educational system. So, too, is each individual member of the school: teachers, administrators, students, and parents. Each of us carries the memory and expectations of our own experience as schoolchildren. The same holds true for the way business organizations, and their members, are places for the presencing of the prevailing systems of management. As long as our thinking is governed by habit – notably by industrial, “machine age” concepts such as control, predictability, standardization, and “faster is better” – we will continue to re-create institutions as they have been, despite their increasing disharmony with the larger world.

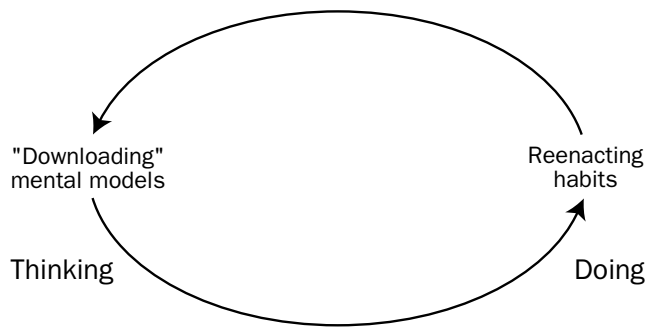
In short, the basic problem with the new species of global institutions is that they have not yet become aware of themselves as living. Once they do, they can then become a place for presencing the whole as it might be, not just as it has been.

New Ways of Thinking About Learning

When any of us acts in a state of fear or anxiety, our actions are likely to revert to what is most habitual: our most instinctual behaviors dominate, ultimately reducing us to the

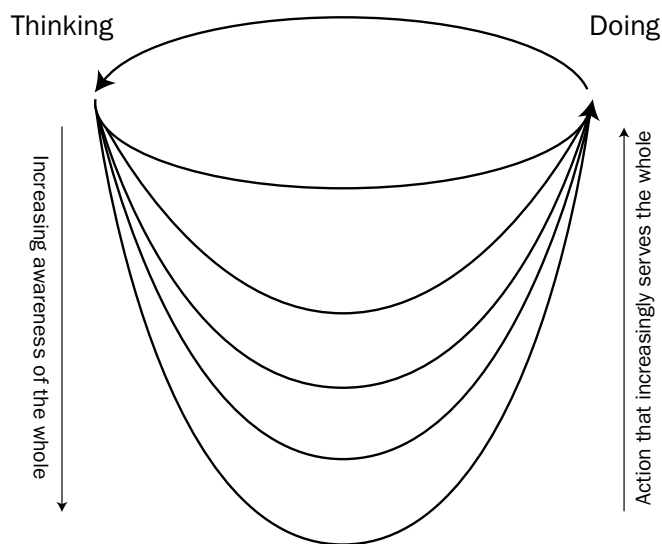


Figure 1: Reactive Learning



All learning integrates thinking and doing. In reactive learning, thinking is governed by established mental models and doing is governed by established habits of action.

Figure 2: Deeper Learning



Deeper levels of learning create increasing awareness of the larger whole – both as it is and as it is evolving – that leads to actions that increasingly serve the emerging whole.

“fight-or-flight” programming of the reptilian brain stem. Collective actions are no different. Even as conditions in the world change dramatically, most businesses, governments, schools, and other large organizations continue to take the same kinds of institutional actions that they always have.

This does not mean that no learning occurs. But it is a limited type of learning: learning how best to react to circumstances we see ourselves as having had no hand in creating. Reactive learning is governed by “downloading” habitual ways of thinking, of continuing to see the world within the familiar categories we’re comfortable with. We discount interpretations and options for action that are different from those we know and trust. We act to defend our interests. In reactive learning, our actions are actually reenacted habits, and we invariably end up reinforcing pre-established mental models. Regardless of the outcome, we end up being “right.” At best, we get better at what we have always done. We remain secure in the cocoon of our own worldview, isolated from the larger world. (See Figure 1: Reactive Learning.)

But different types of learning are possible. More than seven years ago, Joseph and Otto began interviewing leading scientists, and business and social entrepreneurs. The interviews – which now total more than 150 – often began by asking each person, “What question lies at the heart of your work?” Together, the two groups illuminated a type of learning that

could lead to the creation of a world not governed primarily by habit.

All learning integrates thinking and doing. All learning is about how we interact in the world and the types of capacities that develop from our interactions. What differs is the depth of the awareness and the consequent source of action. If awareness never reaches beyond superficial events and current circumstances, actions will be reactions. If, on the other hand, we penetrate more deeply to see the larger wholes that generate “what is” and our own connection to this wholeness, the source and effectiveness of our actions can change dramatically. (See Figure 2: Deeper Learning.)

In talking with pioneering scientists, we found extraordinary insights into our latent capacity for deeper seeing and the effects such awareness can have on our understanding, our sense of self, and our sense of belonging in the world. In talking with entrepreneurs, we found extraordinary clarity regarding what it means to act in the service of what is emerging so that new intuitions and insights create new realities. But we also found that for the most part, neither of these groups talks with the other. We came to realize that both groups are really talking about the same process – the process whereby we learn to “presence” an emerging whole, to become what George Bernard Shaw called “a force of nature.”

The Field of the Future

The key to the deeper levels of learning is the recognition that the larger living wholes of which we are an active part are not inherently static. Like all living systems, they both conserve features essential to their existence and seek to evolve. When we become more aware of the dynamic whole, we also become more aware of what is emerging and our part in it.

Jonas Salk, the inventor of the polio vaccine, spoke of tapping into the continually unfolding “dynamism” of the universe, and experiencing its evolution as “an active process that . . . I can guide by the choices I make.”⁸ He felt that this ability had enabled him to reject common wisdom and develop a vaccine that eventually saved millions of lives. Many of the entrepreneurs we interviewed had successfully created multiple businesses and organizations. Consistently, each felt that the entrepreneurial ability was an expression of the capacity to sense an emerging reality and to act in harmony with it. As one of our interviewees, W. Brian Arthur, a noted economist of the Santa Fe Institute, told us, “Every profound innovation is based on an inward-bound journey, on going to a deeper place where knowing comes to the surface.”

This “inward-bound journey” lies at the heart of all creativity, whether in the arts, in business, or in science. Many scientists and inventors, like artists and entrepreneurs, live in a paradoxical state of great confidence and profound humility – knowing that their choices and actions really matter and feeling guided by forces beyond their making. Their work is to “release the hand from the marble that holds it prisoner,” as Michelangelo put it. While they know that their actions are vital to this accomplishment, they also know that the hand “wants to be released.”

Can living institutions learn to tap into a larger field to guide them toward what is healthy for the whole? What understanding and capacities will this require of us individually and collectively?

Presence

We’ve come to believe that the core capacity needed to access the field of the future is presence. We first thought of presence as being fully conscious and aware in the present moment. Then we began to appreciate presence as deep listening, of being open beyond one’s preconceptions and historical ways of making sense. We came to see the importance of letting go of old identities and the need to control and, as Salk said, making choices to serve the evolution of life. Ultimately, we came to see all these aspects of presence as leading to a state of “letting come,” of consciously participating in a larger field for change. When this happens, the field shifts, and the forces shaping a situation can shift from re-creating the past to manifesting or realizing an emerging future.



Through our interviews, we've discovered similarities to shifts in awareness that have been recognized in spiritual traditions around the world for thousands of years. For example, in esoteric Christian traditions such shifts are associated with "grace" or "revelation" or "the Holy Spirit." Taoist theory speaks of the transformation of vital energy (*qing*, pronounced "ching") into subtle life force (*qi*, pronounced "chi"), and into spiritual energy (*shin*). This process involves an essential quieting of the mind that Buddhists call "cessation," wherein the normal flow of thoughts ceases and the normal boundaries between self and world dissolve. In Hindu traditions, this shift is called wholeness or oneness. In the mystic traditions of Islam, such as Sufism, it is known simply as "opening the heart." Each tradition describes this shift a little differently, but all recognize it as being central to personal cultivation or maturation.

Despite its importance, as far as we know there is relatively little written in spiritual or religious traditions about this shift as a collective phenomenon or about collectively cultivating the capacity for this shift. Yet many of our interviewees had experienced dramatic changes in working groups and, in some cases, in larger organizations. Some of the theorists had even developed ways of thinking about this that transcended the dichotomy between individual and collective.

In the end, we concluded that understanding presence and the possibilities of larger fields for change can come only from many perspectives – from the emerging science of living systems, from the creative arts, from profound organizational change experiences – and from direct contact with the generative capacities of nature. Virtually all indigenous or native cultures have regarded nature or the universe or Mother Earth as the ultimate teacher. At few points in history has the need to rediscover this teacher been greater.

It All Starts with Seeing

In a SoL leadership workshop several years ago, Fred, a Jamaican man from the World Bank, told a remarkable story. A few years earlier he had been diagnosed with a terminal disease. After consulting a number of doctors, all of whom confirmed the diagnosis, he went through what anyone would in that situation: for weeks he denied what was happening. But gradually, he came to grips with the fact that he was only going to live a few more months.

"Something amazing happened then," he said. "I simply stopped doing everything that wasn't essential. I didn't do anything that didn't matter. I started working on projects, with

groups of kids, that I'd always wanted to do. I stopped arguing with my mother. When someone cut me off in traffic, I no longer got upset. I just didn't have time to waste on anything like that."

Near the end of this period, he began a wonderful relationship with a woman who thought that he should get more opinions about his condition. He consulted some doctors in the United States and soon got a phone call telling him, "We have a different diagnosis." The doctor told him he had a rare form of a very curable disease.

"When I heard that," Fred told us, "I cried like a baby, because I was so afraid my life would be back to the way it used to be."

We've learned from years of scenario-planning exercises that imagining alternative futures, even negative futures, *can* actually open people up. Used artfully, scenarios can alter people's awareness of their present reality and catalyze profound change. In the mid-1980s, five years before Nelson Mandela was released from jail, citizens in public forums throughout South Africa confronted "the low road" and "the high road" – two scenarios about the consequences of, respectively, maintaining or stopping the country's apartheid policies. The key to making potentially fearful futures generative is to see that we have choices, and that our choices matter.

Early on in our work with *Presence* we received a remarkable article from Surdna Foundation president, and good friend, Ed Skloot. The piece, "Global Requiem" by religion scholar Jack Miles, was a speculation about potential cultural impacts if society started to realize that humankind might not overcome the global problems it faces, that we may not develop a sustainable society, and that, in fact, the human race might perish (see sidebar, "Global Requiem: The Apocalyptic Moment in Religion, Science, and Art"). Predictions of environmental or social collapse almost inevitably evoke denial, fear, and even paralysis. Given that their authors' intent is usually to mobilize action, they can actually be counterproductive. But what if, instead, facing a global requiem scenario led us to "wake up," as happened for Fred when he faced his mortality? What would happen if such an awakening occurred and, instead of inducing denial, led us to realize that our future as a species cannot be taken for granted, that there is a real urgency to our present situation, and that the time to start living together differently is now?

We believe such an awakening may be occurring around the world. This is based on the interviews we've been doing for more than seven years; on direct experiences we've had with profound change; and on coming to understand better how change occurs in living systems.

One of the most important books in the Mahayana Buddhist tradition is *The Awakening of Faith*.⁹ Written in (or about) 500 AD, it provided a crucial bridge in bringing Buddhist philosophy and practice from India to China and hence, throughout the Asian cultures. The faith of which the book speaks is a deep conviction that enlightenment is possible, that we each carry within ourselves immense possibilities for connecting to the universe and participating in its generative process. In more religious terms, you could say the book's aim is to show that the infinite or absolute and the phenomenal, God and human, are inseparable, and that we have the potential to co-create our realities. But to do so we must first transcend the myth of separation that modern culture has taught us – separation from one another, from our highest selves, and from the generative processes of nature. Awakening our faith that the future can be different from the past will take nothing less than rediscovering our place, and that of our modern societies and institutions, in life's continual unfolding.

The key to making potentially fearful futures generative is to see that we have choices, and that our choices matter.

Global Requiem

The Apocalyptic Moment in Religion, Science and Art

If the first generations that assimilated Charles Darwin's thought were concerned with the origin of species, our own is concerned in an unprecedented way with the extinction of species and, above all, with the threat of extinction that faces the human species. During the 1850s, while Darwin was concluding *The Origin of Species*, the rate of extinction is believed to have been one every five years. Today, the rate of extinction is estimated at one every nine minutes. This raises the question, Will the human species be extinguished in its turn? The statistical question, perhaps the statistical likelihood, is complicated, morally, by the probability that human extinction, if it comes about soon, will prove to have been species suicide.

"Human reproduction," veteran foreign correspondent Malcolm W. Browne wrote in his memoir *Muddy Boots and Red Socks*,¹⁰ "has some disturbing similarities to cancer.... [Humankind] will most likely destroy its planetary host before dying out itself." He cites the work of anthropologist Warren M. Hem, who compared satellite images showing the growth of Baltimore and the colonization of the Amazon basin side by side with pictures of cancer cells. As Hem put it: "The human species is a rapacious, predatory, omnivorous [devouring its entire environment] species."

As voices like Browne's are increasingly heard, the cause that until now has been presented as the defense of the environment, as if the environment were an importunate relative whom long-suffering mankind was being asked to support, is beginning to be presented as the self-defense of the human species itself. The environment is, after all, the human habitat, and time after time, extinction has followed on loss of habitat when the

species at risk was not able to adapt in time. Despite our large numbers, we are an endangered species.

As this paradigm shift takes place in the realms of politics and activist science, another change looms in the realm of the imagination and, perhaps also, in the practice of religion. If the earth is failing as a viable habitat for our species, then we can no longer imagine our individual deaths, as we have so long been accustomed to do, against a backdrop of continuing life. As we cease to do so, as we recontextualize our personal deaths in the emerging prospect of species death, can there – should there – be a religious wisdom that will accept species death as if it were personal death?

Such a prognosis, if it comes, surely will not come as it does in the disaster movies that are now so strangely popular; namely, with a warning that unless a given action is taken within ten days or ten hours, the world will end. No, it will come rather as an accumulation of ignored warnings from scientists and science journalists and an ensuing consensus that the opportunity to take the action that would have saved the species has come and gone. At that scientifically apocalyptic moment, should it be reached, and we can certainly imagine it being reached, actual extinction may still be far enough in the future that there will be time for a new kind of religion and a new kind of art to develop. These will be, no doubt, a religion and an art born of despair, but religion and art – far more than politics or commerce or science – are precisely those products of the human spirit to which we turn in times of despair. The last days of the human race may be, not to speak at all flippantly, our finest hour.

— Jack Miles

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Jack Miles is senior advisor to the president of the J. Paul Getty Trust and author of *God: A Biography* (New York: Alfred P. Knopf, 1995). This excerpt was adapted and reprinted with permission from Jack Miles, "Global Requiem: The Apocalyptic Moment in Religion, Science, and Art," *Cross Currents*, Fall 2000, Vol. 50, Issue 3.

Endnotes

- 1 Peter Senge, C. Otto Scharmer, Joseph Jaworski, and Betty Sue Flowers, *Presence: Human Purpose and the Field of the Future* (Cambridge, MA: SoL, Society for Organizational Learning, 2004).
- 2 According to physicist and philosopher of science Henri Bortoft, *The Wholeness of Nature: Goethe's Way Towards a Science of Conscious Participation in Nature* (Hudson, NY: Lindisfarne Press, 1996).
- 3 Amy Edmondson, *A Fuller Explanation*, 56-59 (Birkhaeuser, Boston, 1987) and Buckminster Fuller, *Synergetics: the Geometry of Thinking* (NY: Macmillan, 1976).
- 4 See "Conversation with Rupert Sheldrake: Morphic Fields," interview by C. O. Scharmer (London, September 23, 1999), www.dialogonleadership.org.
- 5 See "Conversation with Henri Bortoft: Imagination Becomes an Organ of Perception," interview by C. O. Scharmer (London, July 14, 1999), www.dialogonleadership.org.
- 6 Ibid.
- 7 Arie de Geus, *The Living Company* (Cambridge, MA: Harvard Business School Press, 1997).
- 8 *The New York Times*, June 24, 1993, 1, 9.
- 9 *The Awakening of Faith*, attributed to Asvaghosa, translation and commentary by Yoshito S. Hakeda (New York: Columbia University Press, 1974).
- 10 See Malcolm W. Browne, *Muddy Boots and Red Socks: A Reporter's Life* (New York: Times Books, 1993).

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If you would like to contact the authors about this article or about their new book *Presence: Human Purpose and the Field of the Future*, please email them at presence@solonline.org.

To access reader resources or to order *Presence*, please visit www.presence.net. Order the book direct from the site to receive the complementary 40-page *Presence Workbook* free.

Commentary

By Darcy Winslow



Darcy Winslow

This article (and even more so the book, *Presence*) is remarkable in at least three ways. First, the authors' work has extraordinary emotional as well as intellectual impact; it continued to affect me long after my initial reading of it. Second, I found that the insights I gleaned from the work depended on what was happening around me. I suspect I will take away different messages each time I read it. Third, the authors somehow opened me to unexpected messages and opportunities in my own life. Perhaps because they speak so eloquently of the need to sense one's own connections to the world, my reading of *Presence* coincided with many seemingly chance encounters that in very real and specific ways reinforced my connections with others.

One of the book's themes, suggested in the article, is the idea of crystallizing intent – disciplining oneself to retreat and reflect, to listen to the moment. That is something I have done over and over again in my own work. It was essential a few years ago when I started thinking about how corporations could create a more sustainable future. I first had to crystallize my own goals, intentions, and actions – for the year, the next three years, and the rest of my career. That process helped me find new ways to connect with colleagues, customers, and the larger community. I then found that there are always people in organizations, often far from the top or entirely beyond the walls of the enterprise, who are actively engaged in the “right” work – practicing their values, building connections, and actively pursuing a shared vision.

To be sure, most of what happens in most companies is driven by the financial pressure to reward shareholders. But I see an increasing yearning among people and their organizations to be part of something greater than themselves. We tapped that yearning at Nike to develop new, environmentally friendly womenswear products. We wanted to inspire people to think differently about the products they buy or sell, and ultimately we wanted every product to advance our goals for environmental, social, and financial sustainability. However, I soon discovered how complex the process of developing sustainable products would be. We had to establish a new set of design principles, engage our supply chain, and build a network of technical experts (many of whom we found through SoL and other outside partners). It was an organic process of learning and building across whole systems – something that the authors capture vividly in their work.

From the authors' thinking, represented in both their article and book, I take with me two lessons in particular:

- *Changing demographics are a force for change.* I have found in my own work that women and youth are leading many of the best efforts to achieve sustainability. Whether due to an ability to connect, a sensitivity to social and natural imbalances, or a mindset that is less tied to the structures of the past, women and young people are natural carriers for the message of long-term, systemic change. However, to build bridges to these emerging constituencies we must all be-

come better listeners and open ourselves to ideas from remote and unexpected sources.

- *We need to measure what matters.* The “soft stuff” – values, aspirations, commitment – is the hardest to measure. But it is what forms a culture and enables change. By contrast, the metrics that drive most companies – revenue, growth, return on investment – are not very inspiring. I have found that embracing people’s deeper purposes and principles can drive a lot of decision making in an organization. Within my own division, for example, we have four guiding principles. One of them is “Live and lead in favor of the future.” We constantly ask ourselves how that is manifest in our operations, processes, and products. It is a much better way to manage: decisions that flow from a clear set of principles are almost always better and more widely honored than those based on purely financial metrics.

Peter, Otto, Joseph, and Betty Sue call us to reflect, individually and with one another, about what we share and where our future lies.

Presence ends with a powerful line: “If we find our place, we will find our purpose.” I think that is the real work for all of us.

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Commentary

By *Elena Diez Pinto*



Elena Diez Pinto

In “Awakening Faith in an Alternative Future,” the authors articulate a message that is fundamental to people everywhere: the connectedness of all things. Their discussion of parts and wholes resonates both intellectually and emotionally; it confirms what I have found in my conversations with people around the world, and in my own work.

In my seven years of work supporting civic dialogue in Latin America, I have come to understand that social and personal transformations take place through a conscious process of connecting people with each other, and with themselves. In *Presence*, the book from which this article was drawn, the authors tell the story of Vision Guatemala, a team of government officials, human rights activists, businesspeople, and military officers that came together in 1997 in the wake of a brutal, 30-year civil war. That group, with which I was involved, sought to develop a shared understanding of the country’s present and to create plausible scenarios for the future.

In our first dialogue, one of the participants described witnessing an exhumation of a mass grave (one of many hundreds) from a massacre in Rabinal, a Mayan village. The grave included the remains of a mother and her unborn child. When he finished talking, everyone in the room was silent and many of us wept. Later, many recalled that moment as a “large communion”; everyone understood that the tragedy of Rabinal was a manifestation of the whole of our society. We discovered that day that when we listened to one another, putting aside our usual fears and prejudice, we were able to connect deeply and see the world differently. Our connection with one another

allowed the people in the room to step back from the abyss and create an alternative future. We saw what the authors have called “an emerging future that depended on us.”

Peter, Otto, Joseph, and Betty Sue remind us that there are powerful processes for translating our aspirations into reality. They suggest that by opening ourselves to the world and to the living systems that sustain us, we can create meaningful and lasting change. This may sound idealistic, but it is extremely practical. I have learned that when I have to make a decision or want to know what to do in the future, I need to listen to myself. If I listen with my heart and my body, not just my mind – if I am fully *present* and not distracted from what my senses and intuition tell me – I gain deeper understanding and arrive at better, more viable decisions.

This way of being in the world is a matter of survival – for individuals, organizations, and societies. Listening, thinking together, and trying to understand the whole comprise the essence of dialogue and the extraordinary opportunity that the authors have revealed. They make visible the connectedness among people, and call on us to get much better at seeing it.

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Commentary

By Robert Fritz



Robert Fritz

Among the many discoveries within this brilliant new work by Peter Senge, Otto Scharmer, Joseph Jaworski, and Betty Sue Flowers, one, perhaps not obvious at first, is nonetheless particularly radical. It is a shift of fundamental orientation.

If we are to move from relating to the world as fragmented parts to systemic wholes, we must change our basic way of thinking. Not just what we think, but *how* we think. The change is:

- from abstract and symbolic conception to acute and profound observation;
- from metaphorical thinking to original and direct inquiry;
- from the habit of *not* looking freshly to the discipline of finely tuned investigation; and
- from reliance on concepts to bring a sense of order to the world, to an open quest to see what's really there, even if it makes us feel uncomfortable, unsure, insecure, and mystified.

To make this shift, we must move from presuming to know before we look, to looking freshly without the limitation of a concept, metaphor, theory, or history of previous experiences. Another way to say this is: start with nothing, e.g., without an idea of what we might find.

This is the essence of deep listening. How can we hear if we are filling ourselves with the sound of our own concepts? How can we hear the music that is playing if we are singing our own song in our minds? Originality comes from deep listening, and deep listening comes from focusing on reality without an agenda, something that is difficult

when we are in the habit of comparative thinking.

Comparative thinking is most common in our society. It is a this-is-like-that act of categorization. We compare our "database" of previous experiences, theories, models, concepts, or worldviews with what we are observing. Therefore, we bias our perception and create what Otto Scharmer calls "blind spots." When we think we know, we don't ask vital questions, we settle for easy answers, and we live in a world of presumption rather than a world of dynamic inquiry.

Deep listening is a long tradition for those who forged new insights. Newton, much reproached these days as proposing a mechanical universe, was not a metaphorical thinker. He did not think in terms of mechanical, or any other, metaphors. Others, who were not as original, did.

Newton was a deep listener, a creative mind, a man who invented calculus in order to further his inquiry. Those who made his work into metaphor misunderstood the creative process that was central to his work. He looked without a theory. If he were living in this day and age, he would be using his deep listening to observe reality freshly, and, perhaps, come to different insights. He said, "Hypotheses have no place in science." In his book, *A History of Knowledge: Past, Present, and Future*, Charles Van Doren describes Newton's gift this way: "...a mind entirely free of traditional prejudices and capable of seeing the universe [in] a new way."

Descartes said, “To understand some phenomenon or set of phenomena, first rid your mind of all preconceptions.”

Deep listening can lead us to a deeper and often new understanding of reality. Composer Karlheinz Stockhausen has written, “We need to close our eyes for a while and listen. There is always something unheard of in the air.”

In the arts, students must learn to see what is before their eyes without a concept in mind. Painter and teacher Arthur Stern said, “...the basic problem that every painter must face [is that] the mind stands in the way of the eye. That’s why most beginning painters don’t paint what the eye sees, but what the mind lets the eye see. They paint what they expect to see.”

If the universe is, indeed, a living system, and if we look deeply enough, we will see it for what it is – parts in relationship to each other and to the entire whole – a dynamic, with an organic nature, that is always shifting, evolving, and emerging.

It is from deep listening, rather than from an imposition of theory or concept or metaphor, that our understanding becomes immediate, direct, and authentic. Living systems, as the authors point out, are capable of change and self-creation. Understanding this principle as the

reality it is, rather than simply a concept to adopt, gives us a chance to have an active role in the emerging creation of our world.

Without such a revolution, we are trapped by our outmoded, and now dangerous, styles of thinking and acting. At this moment in history, technology, the politics of identity and world-view, environmental conflicts, and the harsh consequences of not understanding the actual interrelatedness of our paths, cannot be addressed with the limitations of our traditional, fragmented thought processes. This is why the ideas explored by the authors can lead to new possibilities of hope, and can move us away from a precipice and toward a vastly wiser civilization.

ABOUT THE AUTHOR

Robert Fritz, composer, filmmaker, and organizational consultant, is founder of Technologies for Creating,[®] and author of *Your Life as Art* and the international bestseller, *The Path of Least Resistance*.

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Sadoff and Grey, "Beyond the River: the Benefits of Cooperation on International Rivers"

Beyond the river: the benefits of cooperation on international rivers

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Abstract

International rivers can elicit cooperation or conflict. The choice between the two will in large part be determined by perceptions of their relative benefits. In this paper, we explore the dynamics that drive the choice between conflict and cooperation, and present a simple framework for examining the extent of potential benefits that could underlie these choices. The paper seeks to broaden the range of perceived benefits, as some are obvious and some are much less apparent. The framework categorizes four types of cooperative benefits. First, cooperation will enable better management of ecosystems, providing *benefits to the river*, and underpinning all other benefits that can be derived. Second, efficient, cooperative management and development of shared rivers can yield major *benefits from the river*, in increased food and energy production, for example. Third, cooperation on an international river will result in the *reduction of costs because of the river*, as tensions between co-riparian states will always be present, to a greater or lesser extent, and those tensions will generate costs. And finally, as international rivers can be catalytic agents, cooperation that yields benefits from the river and reduces costs because of the river can pave the way to much greater cooperation between states, even economic integration among states, generating *benefits beyond the river*. While each of these four types of benefits could potentially be obtained in all international river basins, the extent and relative importance of each type will vary greatly between basins, reflecting a wide range of political, geographic, economic and cultural circumstances. In some cases, the scale of benefits may not justify the costs of cooperative actions, in others the sum of benefits could be very high. The paper concludes that identifying and understanding the range of often inter-related benefits derived from the cooperative management and development of international rivers is central both to better management of the world's rivers, and to relations among the nations sharing those rivers.

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1. Introduction

Rivers¹ are extraordinary phenomena, with physical, cultural and psychological expression in human societies; they bring life and death, civilization and devastation, opportunity and risk. Managing rivers effectively has always been a goal of human societies and nation states. Under Roman law, documented in the 3rd Century Roman Digest, *aqua profluens* (flowing water) was a common good, neither public nor private, emphasizing equity and society-wide ownership. Managing rivers for the common good remains today a societal goal in countries around the world. To achieve this goal a range of instruments is being adopted: river basin organizations are bringing stakeholders together to internalize the politics of allocation, market mechanisms are widely used to rationalize the economics of allocation, and legislation is enacted and enforced to ensure the regulation of allocation. One fundamental lesson of universal experience is that a river is best managed as a basin unit, as any action in one part of the basin has impacts in another.

The management of rivers is complicated by the fact that they cross political boundaries indiscriminately. Rivers intersect or even form borders between the many different users that must share their water. River basins wholly within a nation invariably give rise to debate and discord, to a greater or lesser extent, among users with conflicting demands and management preferences. Strong national institutions can deal effectively with such differences, although in federal nations with strong state legislatures (as in the US, India or Australia) management planning of, and user disputes over, inter-state rivers often present major challenges. However, in all these cases, there remains a national legislative structure with ultimate authority. There is rarely an institution of equivalent authority, however, where rivers flow between, and disputes arise among, sovereign nations. There are about 260 rivers that cross or form international borders; their basins cover almost half of the world's land surface and include about 40% of the world's population (Wolf, 1998). As water everywhere becomes increasingly scarce relative to demand, conflicting expectations of international rivers will grow, with only limited and little-tested supra-national legal and institutional instruments available for nations to look to in order to allocate and conserve the water of the rivers that they share.

There has been much written recently in the economic, political and scientific literature about international rivers, with a sharp focus on 'water wars'. Some write of water wars, both in the past, and, more importantly, in the future. Others argue that no war in history has ever been

¹ Some clarity over terms is necessary. In this paper, freshwater flows (whether surface water or groundwater), and the lakes and wetlands which some of these flows may pass through, derive from or terminate within, are described, very loosely and evocatively, as 'rivers'. The term 'international rivers' is used in this text to refer to freshwaters whose basins are situated within the borders of more than one state. We recognize that there is a long-standing, formal debate over such terminology. Some believe that the use of the word 'international' is incorrect as it implies that the waters (as in seas) do not belong to any state, whereas only the basin states have rights to an international river. Some use 'transboundary rivers', which confuses others as many river channels form international borders without crossing them (although in these cases the river basins themselves will almost certainly be transboundary). Furthermore, transboundary rivers include those that cross intra-national (e.g. state) borders—not only international borders. Others use 'shared rivers', which is disputed by some who do not perceive the use of such waters as 'shared'. Again, others use the term 'watercourse', which is rejected by some who believe that it does not include the full extent of the hydrologic basin and all its water sources. This often heated and rarely conclusive debate serves to emphasize the importance of achieving a common understanding on the issues of 'international rivers'—an understanding best reached through recognizing the benefits of cooperation. This is the subject of this paper.

fought over water, and that international rivers tend to induce cooperation. There is a case for both positions, although, in this paper, we align ourselves with neither, and instead take a somewhat different approach.

All international rivers, without exception, create some degree of tension among the societies that they bind.² There are consequences of these tensions, and of the cooperative or non-cooperative responses they elicit, that can reach far ‘beyond the river’. These tensions, and their responses, are bundled with many other factors—historic, cultural, environmental and economic—that affect relations between neighboring nations. Within these bundled dynamics, international rivers can in some cases become a powerful catalyst for conflict, or a powerful catalyst for cooperation. Fully unbundling water’s role from the complex dynamics of relationships between states is not possible. Control of international rivers is inextricably entwined with economic opportunity, national security, society and culture. Water—narrowly defined—is unlikely to be or have been the sole source of any war, just as, we believe, war is unlikely to be or have been fought for any single interest or purpose. The management of shared water can be a force for peace, or a force for war, but politics—as a proxy for the full bundle of relationships, and associated tensions, that arise between states—will determine whether cooperation or conflict is chosen.

In this paper, we draw upon World Bank experience in different parts of the world and we outline a framework, which is proving relevant and useful in considering cooperation on international rivers. In setting the scene for this framework, we need to consider the nature of a river and its roles in the environment and in the economic endeavors and political relationships of human society.

2. The ubiquitous river

Rivers are a central feature of the ecology of the planet. Crustal processes build mountains and create deep basins. Rain falls, is captured in rivers, erodes mountains, and deposit sediments in lowlands, infilling basins. Rivers play a dominant role in sculpting landscapes and sustaining ecosystems. All life needs water and the presence of water gives life, within the river itself, within associated wetlands, lakes and riverine vegetation, and within the landscape sustained by the river. While the river sustains life and ecological systems, so also do these systems sustain the river, providing natural regulation of water quantity and quality.

Rivers have always been and remain a central feature of the economic environment. Human settlement has almost always been close to water, because of the essential role water plays in human life and economic endeavor. Only in the past century has technology allowed permanent human settlement far from water. It is no coincidence that many of the world’s great cities are found along the banks of rivers. Rivers provide water for drinking, for food production, for energy and for transport and have played a role in the development of human civilization—nowhere more so than in the major alluvial basins of the world, such as the Mekong, the Indus, the Euphrates and the Nile basins. People who settled in the floodplain had great opportunity to grow crops along the river, as the annual flood receded, leaving fresh silt and high water levels

²The word rival has the same root as river, derived from the riparian concept of dwellers on opposite riverbanks.

which boosted production, and to use the river as a transport route to trade that production. In fact, the need to ensure navigation along rivers provided the incentive for some of the earliest recorded institutions and agreements on international rivers. The relationship between the flow of rivers and the economy has long been recognized; the early Egyptians built Nilometers some 5000 years ago to measure the flow of the River Nile at Aswan in order to determine annual taxes for farmers.

Rivers have also, less obviously, long been a feature of the political environment. History shows us that they have played a part in defining the structure of human societies in many parts of the world and in many ways. While early societies in alluvial basins had great opportunities, they also faced great risk, for, if seasonal flood was high, or if it failed, then life was at risk. Harnessing the flood took ingenuity and physical structures (with levees, dykes and canals) requiring the organization of large numbers of people, as well as rules and institutions for water allocation. From this emerged bureaucracies, hierarchies and innovations which helped strengthen civilizations and cities.³ Societies in upland headwaters did not face the same imperatives, and historically appear to have more often been characterized by smaller, less structured social groupings. On the plains, proximity to rivers has been both a source and a reward of strength. Stronger and wealthier societies tend to live close to rivers, while weaker, poorer ones are forced away from rivers, where water is harder and more costly to obtain, and food supplies are less secure. Similarly, in the less developed parts of the world today, stronger and wealthier groups tend to live close to abundant clean water sources or water supply systems, while the poorest are forced to travel significant distances to obtain water of generally lesser quality at greater cost. Rivers are thus as closely linked with the economic and political fabric of human society as they are with the landscape.

Today's international rivers are also interwoven with the geo-political map. Many rivers have always been natural barriers and have defined boundaries (the Roman Empire reached but did not cross the Rhine and Danube rivers). Similarly, the boundaries of watersheds are borders in many parts of the world today, as they formed natural lines where there was no dispute over water. In recent times, however, the drawing of lines on maps to form borders has ignored the significance of hydrology. Africa is a case in point; lines drawn on maps in London, Paris, Berlin and Lisbon have left over 60 rivers crossing national borders, with more river basins per country and more countries per river basin in Africa than in any other continent.

Rivers are thus extraordinary, multi-dimensional systems. They are ecological systems, with critical life- and landscape-sustaining functions. Cooperation on an international river could enable better management of these ecosystems, providing *benefits to the river*, and underpinning all other benefits that can be derived. Rivers are physical and economic systems, whose efficient, cooperative management and development can yield major *benefits from the river*, in increased food and energy production, for example. Rivers have political significance—particularly so when they are shared between states; non-cooperation on an international river will result in tensions between states that will always be present, to a greater or lesser extent, and those tensions will

³See Wittfogel in *Oriental Despotism* (1957). Wittfogel argued that control of water for irrigation was central to the Asian system of economic production, and had a profound impact on the organization of what he termed 'hydraulic societies'. The control of water was therefore a source of power that could be exploited by a central bureaucracy—a theory that came to be known as 'hydraulic monopoly'.

Table 1
Types of cooperation and benefits on international rivers

Type	The challenge	The opportunities
<i>Type 1: increasing benefits to the river</i>	Degraded water quality, watersheds, wetlands, and biodiversity	Improved water quality, river flow characteristics, soil conservation, biodiversity and overall sustainability
<i>Type 2: increasing benefits from the river</i>	Increasing demands for water, sub-optimal water resources management and development	Improved water resources management for hydropower and agricultural production, flood-drought management, navigation, environmental conservation, water quality and recreation
<i>Type 3: reducing costs because of the river</i>	Tense regional relations and political economy impacts	Policy shift to cooperation and development, away from dispute/conflict; from food (and energy) self-sufficiency to food (and energy) security; reduced dispute/conflict risk and military expenditure
<i>Type 4: increasing benefits beyond the river</i>	Regional fragmentation	Integration of regional infrastructure, markets and trade

generate costs; significant benefits could be derived by *reducing costs arising because of the river*. International rivers can be catalytic agents, as cooperation that yields benefits from the river and reduces costs because of the river can pave the way to much greater cooperation between states, even economic integration among states, resulting in *benefits beyond the river*. We will explore these four types of benefits, set out in Table 1, as a framework for our discussion, while recognizing that they feed into each other inextricably and that they are integrated elements of a much broader, even more complex system that cannot be un-bundled.

3. The ecological river: benefits accorded ‘to the river’

Cooperation across borders in the sustainable management of a river ecosystem, according *benefits to the river*, can be a valuable and unthreatening place for international cooperation to start. Environmental management is a cornerstone of river basin management and development and can bring benefits to all river uses and users. While there is a growing debate over the ‘preferred’ ecological state of a river—from ‘pristine’ to ‘engineered’, modern river basin management typically incorporates a conscious design process to ensure a ‘healthy’ river system, however defined, which accounts in some way for the inevitable tradeoffs of river development. A healthy river is typically one with: protected watersheds, preserving soil fertility and reducing contaminant and sediment soil transport; conserved wetlands, floodplains and groundwater

recharge areas, to maintain their natural capacity to buffer river flow and water quality variations; protected aquatic and riverine terrestrial biodiversity; and controlled water abstraction and wastewater discharge, to manage river flows and water quality.

Although rivers are resilient ecological systems that can recover from natural and anthropogenic shock, growing populations and industrializing societies almost invariably cause environmental damage to rivers, by, for example, reducing flows, eroding water quality and destroying fish stocks. Organizing affirmative action to protect the river within a nation state has proved complex and is costly if left until major damage is done and remedial action is needed, as many industrial nations have discovered. The US Superfund is a case in point, where tens of billions of dollars are being invested to restore surface and ground water systems, and particularly the latter, as groundwater clean up is invariably difficult.

The challenge of the protection of international waterways is much greater still, although there are recent examples of major cooperative efforts to restore and protect shared water systems. Initiatives in the Baltic and Red seas, and in the Danube basin, all supported by the Global Environment Facility, are good examples of this, bringing 'benefits to the river'. Cooperation among the eight Rhine riparian states is another interesting example. Cooperation on the Rhine goes back over a thousand years to navigation agreements. In the mid-19th century salmon production was an important economic activity in the Rhine. Growing populations and industries led to a complete extinction of salmon in the Rhine by the 1920s—with over half of the world's chemical production occurring along the Rhine by the 1950s, when the Rhine was known as 'the sewer of Europe'. In 1987, ministers of the Rhine countries launched the Rhine Action Plan, with the symbolic goal of 'Salmon 2000'—a readily understood objective which popularized the much more complex goal of reducing chemical contaminants to a level that would bring life back to the river. Following intensive international cooperation, major investment and widespread public support, by 2000 salmon were swimming up the river as far as Mannheim to breed once more, signifying a healthy river again. Today, much wider Rhine cooperation is planned—such as in the area of flood control.

In poorer regions of the world, there may appear to be fewer incentives for, and therefore less interest in, the management of the ecosystems of rivers. Yet, rivers are balanced systems and upsetting this environmental balance by unmanaged development can have major social and economic impacts. As populations and pressures on land grow in less developed nations, the poorest of the poor are forced into more and more marginal lands. In river basin headwaters, these are vulnerable uplands, often with high slopes and vulnerable soils. Forests are cut down, wetlands drained and slopes are cultivated. Soils are eroded, resulting in reduced crop yields and, eventually, unsustainable livelihoods. More insidiously, groundwater recharge is reduced and levels lowered, river flows become much more flashy and downstream flood and drought impacts can be greatly enhanced. In these circumstances, watershed management can be one key to sustainable development. There are a growing number of countries where this is recognized, with funds channeled to rural people for development programs, recognizing that they act as guardians of the watersheds that feed cities and industries downstream. This is much more difficult to organize in international river basins, where upstream nations are the guardians of the watersheds for downstream nations.

Take the case of Southern Africa, where there are numerous international rivers. Drought in the early 1990s had massive economic and social impacts with, for example, a 45% decline in

agricultural production in Zimbabwe in 1992. In 2000 and 2001 flooding of the Save and Limpopo rivers also had major impacts, particularly on the poor living in the most vulnerable parts of the floodplains in Mozambique, a downstream riparian state on eight international rivers. Smallholder settlement on vulnerable headwaters upstream, coupled with recurring drought and flood, has led to serious soil erosion and altered hydrologic regimes, with impacts throughout the river basins of the region. In the case of Mozambique, managing floods and droughts requires actions in the watersheds of upstream states. Unintentionally, the settlement of vulnerable watersheds in one country, often by the very poor, can thus have major impacts on a downstream country—and often on the very poor settled in the floodplains. There can be no reasonable solution without international cooperation.

It is clear that cooperation in the management of land and water within a basin ecosystem, according *benefits to the river*, can bring benefits to all—and may even be a pre-requisite for deriving *benefits from the river*.

4. The economic river: benefits to be reaped ‘from the river’

Cooperative management of the water flowing in an international river can reap benefits *from the river*. Managing a river basin from a system-wide perspective can increase the quality, the available quantity, and the economic productivity of river flows. River basin development seeks to promote this integrated, system-wide perspective, where the full range of water use opportunities and the various inter-relationships of individual water uses can be considered. River flows and water uses can be optimized to yield, inter alia, more food, more power, and more navigational opportunities, while sustaining environmental integrity. There will often be difficult tradeoffs to be assessed between environmental conservation and river development, with these assessments best made at the basin scale. This is always difficult, even within national boundaries. In international river basins, this system-wide perspective is much more difficult to obtain, and this can only be achieved through cooperation. The gains that result from this shift in planning perspective, are the most obvious and direct economic gains to be made from the cooperative management of shared waters.

There is a widespread perception that water allocation is a zero-sum game, that water resources are finite and that one use will always preclude another. While physical water resources are, indeed, finite, the quantity of *available* water resources can be influenced by management actions. This is particularly true where rainfall is low and highly variable. Good water management practices can effectively increase the available water resources in a system by, for example, protecting watersheds to minimize erosion, maximize infiltration and extend the period of run-off; providing over-year storage to buffer rainfall variability and reserve water in abundant years that would otherwise be lost; and by locating storage in areas of the basin that minimize evaporation and environmental disruption. In semi-arid Spain, for example, effective water management practices have increased water availability from 8% of total flow to 60%. There are also many non-consumptive uses of water, such as hydropower generation, navigation and recreation. The ‘use’ of water for these purposes will not necessarily diminish the water available in the system for other uses.

Focusing on the benefits⁴ derived from the use of water in a river system, rather than the physical water itself, is another way to broaden the perspective of basin planners. The allocation of water, particularly in international systems, is often contentious. However, the underlying interest of many involved, often not recognized, is commonly not the water itself—but rather the benefits and opportunities they hope to obtain from access to that water (i.e. not cubic meters but dollars). A focus on the benefits derived from water use may provide greater scope, and hence greater flexibility, in defining cooperative management arrangements that are acceptable to all parties.

Just as good water resource management practices can increase the availability of water in a river system, integrated planning that maximizes the benefits derived from water can clearly increase the overall productivity of a river system. The positive-sum nature of international cooperation in this context is more intuitive, because of the interaction of economic activities and the integrity of the ecosystem. Basin-wide configurations of consumptive and non-consumptive water uses can be explored to optimize benefits. In some cases, potential non-consumptive benefits may exist that could provide significant additional benefits to a basin without any change in the pattern of water extractions.

There are many good examples of cooperation reaping economic benefits from the river. In the case of the Senegal river, Mali, Mauritania and Senegal are cooperating to regulate river flows and generate hydropower, with a legal and institutional framework and co-owned infrastructure assets, including the Manantali dam that is located 300 km inside Mali. In another case, Lesotho and South Africa are cooperating in the construction of infrastructure on the Orange River in the Lesotho Highlands Project, providing least cost water supply to South Africa's industrial heartland and royalties to Lesotho amounting to 5% of GDP.

Major (joint or several) development, such as the construction of dams and major abstractions for irrigation, present special challenges due to the need to assess options and tradeoffs and to apply environmental and social safeguards effectively and reasonably across international borders and jurisdictions. Again, both the Senegal river and Orange river cases illustrate this, with ongoing debates on environmental issues made more complex by their international nature.

Yet, even significant gains to cooperation in a river system may not be sufficient motivation for cooperation if the distribution of those gains is, or is perceived as, inequitable. It is possible, for example, that a cooperative river management scheme which generates significant gains to the group as a whole might provide fewer benefits to one particular riparian than an alternative non-cooperative scheme. That particular riparian would therefore have little incentive to cooperate. Even if all states benefit more from cooperation than non-cooperation, the relative distribution of gains could inhibit cooperation. Concepts such as Tedd Gurr's 'relative deprivation' or William Baumol's 'envy' suggest that parties are not indifferent to the gains of others, and that some might choose to forgo their own potential gains in order to bar other parties from receiving relatively greater, or preferred, gains.⁵ In such cases, a cooperative arrangement may not be agreed without redistribution or compensation.

⁴Economic benefits here can include anything to which societies attach value.

⁵In addition to equity concerns, the spatial and political relationships between riparians may make relative gains relevant to regional development, integration and relations. Water resource management affects economic and demographic development patterns, enabling or undermining the growth of economic activities and human settlements.

An equitable benefit sharing arrangement may well require some form of redistribution or compensation. The form that compensation takes will be highly situation specific, but could involve monetary transfers, granting of rights to use water, financing of investments, or the provision of non-related goods and services. The range of benefits under discussion is also a critical issue. The broader the range of benefits under discussion, the more likely the riparians will be able to find a configuration of benefits that is mutually acceptable. While some benefits are difficult to share or compensate,⁶ in general the optimization of benefits should be more robust and more flexible than the optimization of physical water resources, because benefits tend to be more easily monetized and compensated and they have less political and psychological significance.

A body of international water law has evolved that focuses on the river as a physical system. Cooperative international management of water resources falls within a legal framework that focuses on water rights. Early principles still cited in the context of international water negotiations are those of ‘prior appropriations’ or ‘first in time—first in right’, often cited by a downstream riparian state, and that of ‘absolute sovereignty’, where water within a nation state is considered to belong to that state, often cited by an upstream state.⁷ After decades of consideration, important principles have been codified in 1997 in the ‘UN Convention for the Non-navigational Uses of Shared Watercourses’, which has yet to be ratified by a sufficient number of states to enter into force. The key principles of the Convention are those of ‘equitable utilization’, which emphasizes equity for all riparians, and ‘no significant harm’, which emphasizes protection for all riparian interests.

However, the application of these principles is fraught with difficulty and they risk opposing each other. The embrace of the first principle by many upstream states and the second by downstream states is a consequence of this. It must be recognized that both principles apply upstream and downstream equally. It is obvious that upstream users must recognize the dependence (sometimes total) on the river of downstream states and the risks of causing significant harm by reducing river flows. It is also true, though much less obvious, that downstream development can generate harm upstream by effectively foreclosing future opportunities for upstream use. Clearly upstream extraction generates externalities downstream by diminishing flows physically. On the other hand, downstream extraction can generate externalities upstream by diminishing future available flows upstream because of downstream claims of acquired rights to that water.

International water law is commonly interpreted as focusing on the allocation of water, resulting in riparian disputes being perceived as zero-sum prospects. International law provides guidance but no clear hierarchy for competing claims on shared waters. The law does provide important principles for developing a sound framework for cooperation between nations. However, there will also always be political motives for, and consequences of, non-cooperation that derive not *from the river* directly, but *because of the river*.

(footnote continued)

The growth, decline or character of nearby industrial and urban developments, for example, could have real impacts, both positive and negative, on market opportunities and environmental quality in neighboring states.

⁶For example, those benefits derived from environmental or social values may not be substitutable or easily compensated.

⁷Memorably cited by Judge Harman in 1895, in the case of the Rio Grande, shared by the US and Mexico.

5. The political river: costs arising ‘because of the river’

Far-reaching gains from cooperation in international rivers may accrue as savings of the costs of non-cooperation arising *because of the river*. The control of rivers and river flows has long been—and to some extent always is in all international rivers—a source of tension and dispute; and an issue of sovereignty, strategic necessity, and national pride. Such tensions (often inextricably linked to, and perhaps even indistinguishable from, other tensions) may reach the point where they color the geo-political relationships between states within a basin and become obstacles to growth by constraining the regional political economy and diverting resources from economic development.

International cooperation can ease tensions over shared waters, and provide gains in the form of the savings that can be achieved, or the costs of non-cooperation or dispute that can be averted. These tensions and costs will always be present to some degree in all river basins; in some basins they may be insignificant, in others they may be very high and may present enormous challenges. In particular, this occurs where water quantity is the major issue—as is likely to be the case with rivers flowing through arid areas, where contesting claimants commonly (but often not correctly) perceive a zero-sum game. Good examples of such cases include the Jordan, Nile, Euphrates and Indus basins, where relations between riparian states are significantly influenced by the waters that they share and are characterized by dispute.

Tensions arising because of the river, particularly where they are acute or long-standing, can thus significantly strain broader relations between states and impact the political economy of a region. Strained international relations tend to inhibit regional integration and manifest themselves in the fragmentation of markets, infrastructure, telecommunications, transport connections, labor flows, financial systems, etc. This fragmentation compromises all of the affected economies by denying them the benefits of regional integration that are potentially extremely important, particularly for small or developing economies. In some international river basins, little flows between the basin countries except the river itself—no labor, power, transport, or trade.

Tense regional relations may encourage the adoption of policies that focus on self-sufficiency, rather than on trade and integration. In the agriculture and power sectors, for example, this could mean the promotion of food and power self-sufficiency, which emphasizes the need to produce, in-country, all the food and power the country demands, even if the cost of doing so is greater than the cost of imports. Generally it is more economically efficient to promote food and power security, which focuses on a state’s capacity to secure its food supply either through trade or production—whichever is most cost effective.

In extreme cases, tensions arising because of the river may result in diversion of strategic human resources and policy focus from economic development to security concerns related to water and a diversion of financial resources to military preparedness. If these tensions contribute to conflict, then the human and financial costs can be extremely high. While these costs because of the river are not readily seen or quantified, they can be very real and substantial, and can compound other tensions leading to higher costs still.

We have referred to the extensive debate in the literature on the specter of ‘water war’. The reality is likely to lie somewhere between those that contend that water is a source of increasing tension and a potential flashpoint for conflict, and those that argue that there has never been a

water war and that the issue is less explosive than it seems. Clearly, as water becomes increasingly scarce relative to demand there will be competing claims on its use, which may increase geopolitical tensions. Where these tensions are high, they may be one of many underlying issues that contribute to souring relationships, and catalyze conflict. It is reasonably argued that there has rarely been a ‘water war’, where water is the sole cause of conflict. However, it is probably the case that there has never been a single cause for any war, and resource conflicts—land, water, minerals—are clearly common contributory factors to many past and present (and future) conflicts.

It is difficult to unbundle the importance of shared waters in the dynamics between riparian states from other contributory factors in conflict. From our experience, water plays a significant part in a number of recent and current disputes, even conflicts, around the world, especially where climate variability and water scarcity, coupled with major transboundary flows, create high levels of perceived threats to national water security. By the same token, cooperation with regard to shared waters contributes to strengthening relations between countries, and catalyzing broader cooperation, integration and stability. It is for this reason that the debate in the literature over whether there have been or will be ‘water wars’ is misguided; shared water has always and will always be one contributory factor in determining relations between states. The challenge is for international rivers to enhance relationships through shared opportunities, contributing to the benefits of cooperation and integration *beyond the river*.

6. The catalytic river: benefits enabled ‘beyond the river’

Cooperation in the management and development of international rivers may contribute to, or even result in, political processes and institutional capacities that themselves open the door to other collective actions, enabling cross-border cooperation *beyond the river*. Increasing the benefits from the river and decreasing the costs arising because of the river enable broader economic growth and regional integration that can generate benefits even in apparently unrelated sectors. Improved river basin management can increase the productivity of a river system, which may then generate additional opportunities in other sectors through forward linkages in the economy. The easing of tensions among riparian states may also enable cooperative ventures unrelated to water that would not have been feasible under strained relations. Flows other than the river—such as improved communications and trade—may grow. Thus, progress in cooperation on shared river management can enable and catalyze benefits ‘beyond the river’, more directly through forward linkages in the economy and less directly through diminished tensions and improved relationships.

The forward linkage effects of generating benefits from the river, for example in food and energy production and trade, are relatively obvious. Agricultural surpluses may spur growth in agro-processing or trade. Enhanced hydropower production and interconnection could both expand productive opportunities and increase the profitability and competitiveness of existing power-using enterprises. This may lead to additional investments in industry or infrastructure, and strengthened trade relations. Investments, improved infrastructure networks and trade relations can in turn generate additional growth opportunities, and so on. These types of forward

linkages could be national, supporting growth and development within basin states, or international, promoting exchange, trade and interconnection among basin states.

It is less obvious that diminishing the tensions that arise because of the river will enable greater economic integration among basin riparians and help to redress the regional fragmentation that may exist as a consequence, at least in part, of tensions arising because of the river. Easing these tensions could enable cooperation among countries by diminishing formal and informal restrictions on the movement of goods, labor and finance between countries, increasing integration even in apparently unrelated sectors such as transport, telecommunications or tourism. Regional infrastructure systems can be of particular importance. The fragmentation of regional infrastructure, especially in the case of small, landlocked economies, can be a major obstacle to growth. Where cooperation on international rivers can contribute to increased integration of infrastructure systems, development impacts can be significant.

The Mekong basin, shared by Cambodia, China, Laos, Myanmar, Thailand, and Vietnam, where relationships among the riparians have been turbulent for decades, provides an interesting case. While there have not been major disputes arising over the Mekong itself (and thus relatively small costs ‘because of the river’), significant benefits have been derived ‘from the river’ through cooperative management. Sharing the Mekong’s benefits has proved to be an important stabilizing factor in the region, bringing substantial benefits ‘beyond the river’, both directly from forward linkages and indirectly from diminishing tensions. During years of conflict between Laos and Thailand, for example, Laos always provided hydroelectricity to Thailand, and Thailand always paid. Similarly, the Government of Thailand has followed an explicit strategy of increasing regional stability by creating mutual dependency and thus purchases gas from Myanmar and Malaysia and hydropower from Laos and China, in part because these are low-cost supplies and in part because they create ties that bind the countries in a web of mutual dependency.

Cooperation with regard to river systems may therefore facilitate the political processes needed to enable cooperation on other ‘systems’ within and beyond the river basin, such as labor flows, markets and infrastructure. These economic ‘systems’ may extend well beyond the river, yet tensions because of the river system can be barriers to their development. Developing and integrating these broader economic systems can make each individual economy stronger and more competitive, and more easily integrated into the global economy.

7. The cooperative river: the dynamics of multi-type benefits

The cooperative river can therefore be seen to generate benefits of multiple types, although the potential sum of these benefits in different basins will vary greatly. The first type are the benefits accorded to the river by cooperative basin-wide environmental management, the second are those benefits to be reaped from the river by cooperative development of the basin, the third are the savings that can be made by diminishing the costs of non-cooperation arising because of the river, and the fourth are broader opportunities that are catalyzed beyond the river.

The relative importance of each type of benefit, and the dynamics among the types will be unique to each basin and the states which share it, reflecting, for example, history, hydrology, economics, politics and culture. While it is likely that in all basins there will be some potential benefits of each of these types, the value of these benefits, individually and in total, will vary

significantly among river basins. These potential benefits must be weighed against the generally high costs of establishing and maintaining multi-country river basin institutions, and may not everywhere justify cooperative efforts.

Seen another way, non-cooperation will have costs in terms of foregone opportunities of each of these types. Opportunities and gains may be highly visible, or extremely subtle. Cooperation on an international river may even be a necessary (but clearly not sufficient) condition for stable international relations and trade between basin states. Thus, it is quite possible that the greatest gains associated with cooperation on international rivers will derive from apparently unrelated development that would never have been considered had tensions over shared waters remained between nations. This relationship needs to be more widely understood and recognized, to increase the incentives for cooperation on international rivers.

Some river basins have the potential to generate significant benefits of multiple types; the Nile is a good example. Ten countries share the Nile; five are among the 10 poorest countries in the world; four are landlocked; and seven are, or recently have been, involved in internal or international conflicts. All of the riparians rely to a greater or lesser extent on the waters of the Nile for their basic needs and economic growth. For some, the waters of the Nile are perceived as central to their very survival. It is not surprising, therefore, that for centuries the Nile nations have been concerned by the actions of other riparians. This has been the basis, supplemented by many other factors, for tensions between riparian states. It is clear that Type 3 costs ‘because of the river’ are high. Environmental management is also a challenge. The Nile is the world’s longest river, it covers one-tenth of Africa’s total land mass and is home to Lake Victoria, the second largest freshwater lake, and the Sudd swamps, a wetland the size of Belgium. To effectively preserve the vast Nile ecosystem and bring Type 1 benefits ‘to the river’, cooperation is needed. The potential for Type 2 economic gains ‘from the river’ are significant, for example, through the cooperative management of river flows to mitigate against endemic floods and droughts, and coordinate hydropower and agricultural production, with major opportunities to construct shared infrastructure. Finally, cooperation on the management of the river can catalyze flows other than water between the countries, by diminishing regional tensions, increasing production, and promoting broader regional integration and cooperation ‘beyond the river’, bringing Type 4 benefits. The 10 Nile riparians are currently engaged in a cooperative effort, the Nile Basin Initiative, which explicitly seeks to develop and share all four types of benefits.

Table 2 explores the dynamics of cooperation on international rivers. The incentives for cooperation suggest *why* cooperation takes place, often due to concerns over problems, such as climate (and associated river flow) variability or recognition of opportunities, such as economic potentials. The catalysts for cooperation suggest *how* cooperation is fostered and promoted, often through improved communications and dialogue at many different levels. The linkages show the dynamics between the different types of cooperation, and to some extent suggest *when* cooperation of each type may take place. The linkages between types of cooperation suggest that making a start in environmental (Type 1) or direct economic cooperation (Type 2) can lead to growing political (Type 3) and indirect economic cooperation (Type 4)—or vice versa. The dynamics between types might be positive or negative. For example, while Type 3 cooperation may help further advance Type 1 and Type 2 cooperation, setbacks in Type 3 relations may impede cooperation of Types 1 and 2.

Table 2
Dynamics of cooperation on international rivers

Type	Incentives	Catalysts	Linkages
<i>Type 1 (environmental): increasing benefits to the river</i>	Concerns over river flows (including flood and drought) and pollution Ecosystem sustainability	Public awareness Joint environmental diagnostic analysis	Type 1 actions underpin sustainable Type 2 and 4 development Type 1 action builds Type 3 trust (inaction fuels Type 3 tensions)
<i>Type 2 (direct economic): increasing benefits from the river</i>	Recognized economic growth and business opportunities High variability of river flows, giving unreliable supplies and flood and drought risk Growing water scarcity	Joint analysis of optimized river development Fora for engagement of key actors (e.g. water and power industries, farmers, agri-business) Identification of win–win investments	Type 2 actions motivate Type 1 joint stewardship of resources Type 2 actions ease Type 3 tensions (unilateral actions fuel Type 3 tensions) Type 2 actions may generate production surpluses (agriculture, power) for Type 4 integration
<i>Type 3 (political): reducing costs because of the river</i>	Concern for improved international relations and peace given increasing water demands Need to ensure long-term river flows and benefits from flows Recognition of opportunities lost by policy focus on non-cooperation	Improved communications (infrastructure, telecoms, media, etc) Specific political dialogue (possibly mediated) Broader regional/global political initiatives and agreements	Type 3 gains facilitated by Type 1 actions that build trust Type 3 dialogue and engagement promoted by Type 2 actions and shared benefits (unilateral actions to capture benefits will increase tensions) Type 3 gains enable further Type 1 and 2 actions and Type 4 opportunities
<i>Type 4 (indirect economic): benefits increasing beyond the river</i>	Recognized gains from economic cooperation (particularly for small and /or landlocked economies)	Broad analysis of economic cooperation barriers and opportunities Civil society and private sector exchange Broader regional/global economic initiatives and agreements	Type 4 gains sustained by Type 1 actions Type 4 opportunities arise from tradable surpluses generated by Type 2 actions Type 4 integration enabled by Type 3 gains in policy shift to regional cooperation, lowering barriers to trade and communication

8. Conclusions

We have proposed in this paper an analytic framework describing four types of benefits (environmental, direct economic, political and indirect economic) from cooperation on international rivers. While there is enormous variation among the numerous international rivers of the world, we submit that costs of non-cooperation, and benefits of cooperation of all four types will manifest in all international river systems, to a greater or lesser extent. However, although these types of cooperation can be recognized, they are closely interwoven with each other. Furthermore, cooperation—and non-cooperation—between states on international rivers feeds into, and is fed by, a much broader bundle of international relations, from which it cannot be isolated. Thus conflict is unlikely to result over international rivers alone, but international rivers can be one significant cause of conflict. Similarly, joint management of international rivers will not be the sole area of cooperation between states, but it can be a significant catalyst for peace and economic integration.

The international rivers of the world are coming under growing pressure from increasing water demand and water quality deterioration. It is important to understand what the benefits of cooperation on international rivers may be, why cooperation may occur and how it may be fostered. Greater cooperation on an international river will lead to better management and development of the river itself, and, in many cases, it may also promote economic integration and regional security, beyond the river.

Acknowledgements

We would like to acknowledge the input and inspiration of our many colleagues in the World Bank, particularly in the Africa Water Resources Management Initiative, and in Africa. We would particularly like to thank John Briscoe, Dale Whittington, Jerry Delli Priscoli and Inger Andersen for constructive and critical review of the ideas expressed in this paper.

References

- Karl, A., Wittfogel. (Eds.). (1957). *Oriental despotism; A comparative study of total power*. New Haven: Yale University Press.
- Wolf, A. T. (1998). Conflict and Cooperation along International Waterways. *Water Policy*, 251.

Module IV: Putting it All Together – Institutional Capacity

Module IV Overview

Type of Process/ Negotiation Stage	Focus of Process	Collaborative & Transformative Skills	Context, Geographic Scope, and Outcomes
Action	Governance within dynamic systems; recognition of everyone's legitimate place; equity	Capacity- building; Community Building	 Networked systems across state, region, and/or country

Stage 4 of Water Conflict Transformation

Section A. General Setting: Relating Like a System

Through the preceding processes, diverse interests and governments explore new ways to work and think together to uncover and form a base of shared meaning that can help coordinate and align collective actions and shared values. The *action* stage turns the collective attention towards *capacity-building* – institutional change, additional or redirected funding, tools, and new networks, and structures to achieve this. It may call for an evaluation of methods and practices being used throughout the problemshed. Further, it is also about *community-building* – deepening the relationships that have been made through the processes, and sustaining a collective flow.

Some processes will have plans as outcomes that then need commitment to their implementation. Other processes will design new governance processes that are ongoing and need financial and technical commitments, and programmatic support. There may be a new understanding of benefits or externalized costs that need attention through funding or new management agreements. New laws, policies or procedures may replace or supplement previous ones to align collective actions.

Notice that there are often actions that are brought back to each level of the framework – the level of institutions and laws, the level of management and negotiation, the level of collective intention, growth and enhancement, and the level of re-creation and re-connection.

Section B. Governance, Institutional Capacity-Building, & Sustainability

Experience suggests that in order to meet 21st Century water resource demands we must seek and share new methods, tools, and structures that help us move beyond entrenched positions to a common vision of the future. This includes creating tools, methods, and capacity to facilitate diverse interests and cultures coming together to craft strategies and policies that achieve mutual gains at all levels both before crisis strikes and even within times of crisis. The structures need to speak across multiple scales of decision-making in order to harmonize activities. Collaborative and less confrontational approaches are needed to build community rather than disrupt it. Overall, this era challenges us to seek new strategies that foster sustained, long-term environmental stewardship connecting people with the resource and their communities, and connecting communities with more centralized institutions to support stewardship efforts.

Oregon developed a network of watershed councils with other local, tribal, state and federal agencies which also provides an access point and vital link to private landowners. If the problem spans the landscape, the governance mechanism needs to as well, with sensitivity to the place and people who will make the change happen.

Though watershed councils are still relatively new and growing in their capacity, these place-based, networked structures offer an example of 21st Century governance structures that can operate and be a place to integrate many of the 20th Century laws and institutions. They are increasingly able to simultaneously hold multiple, often-competing elements of a community and its sense of place – its environment, economic interests, and social needs, and offer a community structure for making resource decisions that benefit the entire watershed and its inhabitants.

John Paul Lederach⁷⁰ helps us understand how unusual this is. He says that conflict transformation requires real change in our current ways of relating that includes and goes beyond the resolution of a specific problem towards a clear and important vision; and in the process, builds healthy relationships and communities, locally to globally. This transformation transforms us, too.

⁷⁰ Lederach, *The Little Book of Conflict Transformation*.

Section C. Crafting Networks, Structures and Institutions

Developing and enhancing benefits for the basin is vital. While benefits are often framed in economic terms, Stage 3 processes may have introduced social/community and ecologic benefits that will now be acknowledged in the *action* stage. Not all of these are easily monetized, and arguably shouldn't be. Further, some of these "benefits" are actually costs that have been externalized from past practices and times, and are now being restored.

So how do we now craft the structures and networks which allow a flow of information, communication, and benefits (both monetary and non-monetary) to maintain the collective opportunity? How do we design them to be both flexible as well as resilient? Are there different stakeholders that will need to work with their own constituents to keep this flow happening? What support or conditions will they need? What's needed to keep everyone whole, and what governance or institutional mechanisms hold this over time?

Exercise IV.1: Crafting Networks, Structures and Institutions

To be conducted in class.

Objectives

To craft the structures and networks which allow a flow of information, communication, and benefits (both monetary and non-monetary) to maintain the collective opportunity.

Key Take Away Points

An agreement or institution may be thought of as a sociopolitical analogue to a vibrant ecosystem, while also vulnerable to the same categories of stresses which threaten ecosystem sustainability. Will the agreements and institutions which were crafted in the exercise sustain themselves through:

- Biophysical stresses? Are there mechanisms for droughts and floods? Shifts in the climate or rivercourse? Threats to ecosystem health?
- Geopolitical stresses? Will the agreement survive elections or dramatic changes in government? Political stresses -- internally, nationally, and internationally?
- Socioeconomic stresses? Is there public support for the agreement? Does it have a stable funding mechanism? Will it survive changing societal values and norms?

Similar to an ecosystem, *adaptive* management – i.e., the institution has mechanisms to adapt to changes and stresses, and to mitigate their impact on its sustainability⁷¹ -- may prove to be the best approach.

Instructions/Additional Information:

Crafting institutions that maintain the necessary flow and connection for the new relationships that have been discovered is challenging. However, nature offers examples, such as nervous systems, that may offer creative ideas and awarenesses.

While you may want to discuss potential pitfalls, you can commit to an adaptive process and incremental implementation so that you don't have to have unreasonable expectations of yourselves for immediate success.

Do you want to have some independent science and/or oversight body to help with any adaptive processes or design? Experience suggests that measurement on large systemic change is hard to do meaningfully. Is it because we are working with chaotic social and natural systems that we don't and won't understand well enough to know how to measure? Is it because measurement isn't linear in systemic change? Instead it may function more like a phase-change? Or something else?

⁷¹ See Lee, Kai. *Compass and Gyroscope: Integrating Science And Politics For The Environment* (Washington, DC: Island Press. 1995) for the classic text on adaptive management.

Guidelines for Going Home**Handout (H-IV.3)**

These 11 guidelines are but a few of the areas that need to be reviewed periodically. Be sensitive with yourself and others, and you will find that re-entry brings opportunities which you never even dreamed of.

1. The more intense the experience has been, the greater the chance for distress or dissatisfaction with any questioning about the “new you” when you return. You may need additional time to re-acclimate yourself back home. Adjustment may be aided or hampered by close relationships, personality issues and work stress. Allow more time than you think will be necessary before judging success or failure.
2. Because of the closeness established with other participants in a relatively short period of time, there may be an additional sense of loss when you return home, as well as a sense of jealousy from those close to you upon your return. Be gentle with yourself as well as with people at home. Also keep contact if possible with someone from your new network. They will probably be experiencing some of the same things.
3. Although you have had time to process what you’ve learned, those at home have not. Remember how skeptical you were initially. Allow the same period of skepticism for colleagues and friends at home. It’s a classic case of lag time between learning something in a cognitive way and experiencing it as reality.
4. As you describe what you’ve learned, be aware of oversimplifying or undersimplifying. Descriptions of past happenings bring visions to you that are inaccessible for those who were not there. Set a scene and then fill in the activity only to the level that you think is of interest. Monitor how others receive your information and modify your descriptions accordingly. If you want to successfully incorporate what you’ve learned, you don’t want to bore people or set unrealistic expectations with any proposed changes.
5. The thing that you are bringing back home will be questioned. Avoid defending them or the whole experience as the “right way of life.” It may help to share some negative aspects of your experiences as well as the positive ones. It keeps your eye on reality and puts the whole experience in a more acceptable light.
6. Feedback is valuable. People will be more comfortable with you if they can tell you how your stories about your experience sound to them. It also provides an excellent way to modify any ideas that aren’t accurately reflected.

7. Learning continues long after presentation of material. It is not at all unusual to have “aha” experiences after returning home. This kind of realization is particularly likely after laboratory or experiential learning. It’s refreshing to know that learning of this kind is continuous and may be triggered at any time.
8. Seek colleagues and friends who share your concerns and values. It is with these people that you will find the support necessary to implement change. Using allies to the best advantage will spread excitement for your ideas farther than you can.
9. The culture of experiential learning is not accepted or understood globally. Be prepared to explain things in a very concrete sense. Avoid buzzwords or phrases and remember that some of the more insignificant aspects of the experience for you might be quite powerful for others. Respect others’ learning process as the leaders of your group respected yours.
10. There is never enough time to practice things that you’ve learned. If you can share, try learning by teaching others. Expect some mistakes, realizing that practice makes perfect.
11. Learning in a classroom or laboratory is temporary and needs to be both nurtured and reinforced before it becomes permanent or institutionalized.

Source: Kaufman, Edy. Innovative Problem-Solving Workshops. in *Second Track/Citizen's Diplomacy: Concepts and Techniques for Conflict Transformation.*, edited by John Davies and Edy Kaufman, Lanham, MA, Rowman and Littlefield. 2002. p. 234

Section D. One-Minute Evaluation

One Minute Evaluation

Handout (H-IV.4)

Please answer the following questions. Your responses will help the instructor/facilitator to improve how he/she conducts future workshops.

1. What worked well during this course?

2. What aspects needed work?

3. What specific improvements would you make?

4. What grade (A-F) would you give the course? The instructor?

Many thanks!

Section E. Supplemental Reading for Module IV

Wells, Gail "Repairing the Commons." Oregon's Agricultural Progress 2006: 62-65.

Kitzhaber, John. "Enlibra II." Environmental Summit on the West II. Salt Lake City, UT. 15 May. 2002.

Oregon Watershed Enhancement Board. "The Oregon Plan for Salmon and Watersheds: 2005-2007 Biennial Report," Salem, OR: Oregon Watershed Enhancement Board, 2006.

NOAA National Marine Fisheries Service. "2006 Report to Congress: Pacific Coastal Salmon Recovery Fund FY 2000-2005," NOAA National Marine Fisheries Service. 2006.

**Wells, Gail, “Repairing the Commons in Oregon’s Agricultural
Progress: Water in Oregon”**

REPAIRING THE COMMONS

BY GAIL WELLS

Oregon's watershed councils were formed in the crucible of environmental conflict. In the early 1990s, the northern spotted owl and coastal coho had been listed as threatened under the Endangered Species Act, and farmers, ranchers, and timber companies found themselves glaring through an ugly barbed-wire fence at environmentalists glaring back.

Many people were skeptical that voluntary, collective, local efforts to restore salmon habitat could solve these tough problems, when harder methods like regulations and lawsuits were apparently doing little good.

At the time even Paul Heikkila had his doubts. Why should watershed councils be anything but another forum for futile wrangling, he wondered? Why should people with deep and bitter disagreements decide to tear down fences just because they lived in the same watershed?

What gave him hope, ironically, was that nothing else was working. "It was the conflict that created a solution," says Heikkila, a long-time Oregon State University Extension agent in Coos County. "We had people from timber, agriculture, farming and grazing, and the environmental community, and they weren't talking to each other, and nothing was getting done. How do we get through that conflict, past the standoffs? That was the genesis."

Heikkila has been working with watershed neighbors in Coos County for more than 20 years, helping them reach past their differing views and

interests and find common ground in the watersheds they share.

It was slow going at first. "In one early meeting," he recalls, "we had one person from a large industrial timber company and another from a state agency. They were both sitting at the table, and they wouldn't talk to each other. They talked through me—I was the go-between." It was obvious that they wanted to communicate, he says, but the situation was delicate. Choosing his timing, Heikkila got up and left the room at what he hoped was the right moment. "I said, 'You don't need me here,' and I left." They talked.

The first efforts to gather Coos County neighbors around common problems began in 1983, when water quality and declining fish stocks were becoming an urgent concern of Oregonians. With funding from the state's Salmon and Trout Enhancement Program and other sources, landowners began getting together to plant trees along streams running through cow pastures and to place dead logs into forest streams to improve the fish habitat.

In 1993 the legislature provided funds to local watershed organizations to pay for such projects and also to recruit paid staff. "That was a crucial catalyst," says Heikkila. Coos County's three watershed associations were among the state's first councils. Now there are about 90 independent watershed councils across Oregon, some of which share staff and other resources. The legislature officially recognized watershed councils in 1995.



Two years later the Oregon Plan for Salmon and Watersheds adopted local, nonregulatory, voluntary actions as a key strategy to improve the condition of local watersheds. Watershed councils have become the main mechanism for carrying out that strategy.

"Watershed councils are known for their diversity, both within themselves and across the state," says John Moriarty, statewide coordinator for the Network of Oregon Watershed



Watershed councils have become a gathering place for collaborative action in many Oregon communities.

Paul Heikkela, an OSU Extension watershed agent, helped launch one of the state's first watershed councils.

PHOTO: TOMACENTRE

Councils, an organization that helps watershed councils build capacity. "These councils are a place where a lot of tough issues are hashed out" among people of different opinions and interests, he says. "Most of them operate by consensus, as do we. Because, ideally, everybody wants a win-win."

So far, watershed councils seem to be a winning strategy. A tenth-anniversary assessment from the University of Oregon gave watershed councils an A+

for the good things they're doing for Oregon's landscape and communities. The assessment found that each state grant dollar spent on watershed restoration projects brings in another five dollars from other sources, and most of that money stays in the community. Watershed councils also build community capacity by educating people about watersheds and working together effectively, by increasing cooperation and trust among neighbors, and by encouraging more citizen involvement in natural resource decisions.

Paul Heikkila remembers one dairy farmer up the Coquille who at first had nothing but scorn for the nascent watershed council in his neighborhood. "He'd lived on the river all his life, and he didn't believe in any of this newfangled stuff," says Heikkila. "But he had a nice dairy farm and he took good care of it. We'd go out to his place and sit on stumps and discuss the world." Finally the farmer, still skeptical, started coming to meetings. "Pretty soon he was coming to every meeting."

What changed his mind? "I don't think he changed his mind about anything until the day he died," says Heikkila. "But he did change his behavior. He fenced his land to keep the cows out of the river. He participated in restoration projects, because he could see this was something that worked." **OAP**

OSU Extension watershed management specialist Derek Godwin helps connect watershed councils with expertise at OSU and beyond to help communities make effective decisions about the watersheds they share.

PHOTO: DENNIS WOOLVERTON



Governor Kitzhaber's May 2002 Enlibra II Summit Speech

Governor John Kitzhaber

Environmental Summit on the West II

Salt Lake City, UT

May 15, 2002

I was born and raised in the Northwest, one of the last best places on the North American continent -- where hope still burns bright and people still believe in hard work, individual strength and community spirit. It is a place where people cherish their quality of life. And over the years I have watched the Northwest grow and change.

As an outdoor enthusiast and advocate for wild places and free flowing rivers, I have witnessed the devastation of watersheds, salmon populations and other species brought about by the overzealous extraction of natural resources. As an emergency physician I have seen the equally shocking devastation of communities when these same industries collapse; and the human suffering that occurs when proud, hard-working people lose their jobs - substance abuse, domestic violence, the disintegration of families.

What I have come to realize is that all of these things are connected and interrelated. That to address any one of them we must address all of them. I have learned that the quality of life we so cherish is a multi-faceted jewel.

Enlibra is - first and foremost -- a philosophy and an approach which recognizes and builds on this realization.

Enlibra is an expression of *sustainability* - which I define as managing the use, development and protection of our economic, environmental and community resources in a way and at a rate that enables people to meet their current needs without compromising the ability of future generations to do the same.

This definition requires that we recognize a larger truth: the interdependence of our economic, environmental and community needs - and that we find a balance between these often competing values.

Imagine, if you will, three overlapping circles - one representing our economic needs, one representing our environmental needs and one representing our social or community needs. The area where the three circles overlap is the area of sustainability, the area of Enlibra - the area through which run all the elements of a good quality of life: a healthy, functioning natural environment; a strong economy with jobs and job security; and safe, secure communities where people have a sense of belonging and purpose and a commitment to each other.

These elements - these threads, which together weave the fabric of sustainability - are things we hold in common. They represent a common set of desires and

aspirations that add value and quality to our lives. To me this relationship lies at the heart of sustainability - and at the heart of Enlibra

Yet, as our social, environmental and economic problems become more complex, we are increasingly viewing them as separate, competing entities - mutually exclusive values, if you will. This perspective undermines sustainability because it creates a politics of scarcity - a zero-sum situation in which there must always be a winner and a loser.

We can see this disturbing trend unfolding in many ways: in the challenge of accommodating growth while maintaining livable communities; in the tension between sprawl and compact development; and in the seemingly intractable conflict between economic activity and environmental stewardship.

This situation is evidence of the fact that our political system is reaching the limits of its capacity to meaningfully respond to these complex challenges -- or, at the very least, that our politics have failed to adapt to meet these new challenges.

"Politics," of course, derives from the Greek word "polis," meaning "city" -- or in more modern terms, "community" -- a group of individuals functioning together as a whole for their mutual benefit. In its original sense, "politics" -- referred to those activities necessary to sustain a community -- composed of individuals whose views and needs would not invariably coincide yet who, from time to time, must necessarily subordinate some of their own personal desires for the larger good. The way in which this "larger good" was arrived at was a central point of contention during the drafting of the United States Constitution.

Thomas Jefferson argued for the "politics of engagement," in which people work together in a spirit of cooperation to find common ground and solve mutual problems. The Jeffersonian model rests on the conviction that people are essentially reasonable, and will work to achieve the common good if they can agree on or be brought to understand what it is.

James Madison, John Jay and Alexander Hamilton -- in the Federalist Papers - argued for a "politics of disengagement," wherein the common good is determined not as a result of cooperation among individuals, but rather as a result of external, top-down management.

It was this second view that more or less prevailed as our nation developed. Certainly it is what Americans today have come to expect from their government, and what they now most resent about it. But more importantly this model does not resolve conflict. This "third-party" management invariably produces "winners" and "losers," thus removing any incentive for individuals to cooperate. Nowhere

does our current political structure offer a place where people can come together to balance the needs of the larger community.

The primary tools of government are laws, regulations and the allocation of resources. And with these tools government does many things very well. It provides infrastructure that fosters private sector investment and economic activity. It enforces laws and incarcerates those who break them. It provides for the national defense, establishes health and safety regulations and maintains a system of public education.

What government does not do very well, however, is to bring people together to solve problems - especially when the problems are complex, when they involve tension between environmental, economic and community values, and when the solutions require the participation of many people. Yet these are exactly the kinds of problems that must be resolved if, indeed, we are to create a sustainable future.

To do so, I believe that we must create a community-based governance structure, one that provides the place and the opportunity for people to come together to find sustainable solutions. Enlibra encompasses a set of principles by which to guide these efforts.

To illustrate this point, let me use our efforts in Oregon to improve forest health. Because of a decades of forest management policy characterized by active fire suppression and harvesting the valuable old growth pine, the forests of eastern Oregon have been transformed from their once healthy condition to their current sad state: overstocked stands of young fir and pine, thousands of acres of dead and dying timber infested with insects, and a high risk of catastrophic fire.

Thousands of miles of riparian areas have been damaged by harvest and grazing practices, road building and urbanization resulting in the decline of a number of species which depend on a healthy watershed. Similarly, as the forest health has declined and harvest has been significantly reduced, timber dependent communities have seen tragic declines in employment. Economic, environmental and community values are simultaneously at risk.

For that reason, we set about to find ways to both restore ecosystem health and provide wood to communities in an environmentally sound manner. This effort involved a panel of highly respected scientists from throughout the Northwest and - most significantly - a "forest health advisory committee," consisting of a diverse group of eastern Oregon citizens and stakeholders. Their work led to a broadly supported set of principles for restoring ecosystem health.

The plan calls for active management to promote ecosystem health, guided by good science and careful monitoring. Restoration efforts include understory thinning and commercial thinning in overstocked stands; road maintenance, closure and obliteration; and prescribed burning. A by-product of many of the

thinning treatments is wood for local mills to help stabilize these rural communities. Thinning also reduces the risk of catastrophic fires that has increased significantly as forest health has deteriorated.

The key to success lies in having a single, overarching policy objective driving the management plan, in this case: restoring watershed health. Why? Because a healthy watershed is the common building block from which all beneficial uses of the forest flow: clean water, a thriving forest, abundant timber, and healthy forest species. The three legs upon which the strategy stands - social, environmental and economic - are all interwoven and are dependent first on a healthy, functioning watershed.

Watershed health, then, is the area where the three circles overlap - the area of sustainability - the area of Enlibra - the area which defines the "common good" for this community-driven effort. The "place" that afforded the opportunity to recognize the common good is the forest health advisory committee.

We have made similar progress in our efforts to restore endangered salmon habitat throughout the state under the Endangered Species Act, the primary role of which is a traditional regulatory one. And while regulation has an important role to play, there are limits to its effectiveness. Regulation can keep people from doing the wrong things but it provides no incentive for them to do the right thing.

While the ESA can prevent landowners from engaging in activities that result in a kill, or "take," of a listed species -- it cannot compel them to do more. Yet 60-70% of coho salmon habitat in Oregon lies on privately owned land and therefore, recovery will only occur if private landowners undertake restoration activities that go well beyond simply avoiding take.

As a result, Oregon's effort to comply with the Endangered Species Act - called the Oregon Plan for Salmon and Watersheds -- was designed to involve, empower and incent private landowners to make voluntary commitments to watershed restoration and habitat restoration which go beyond what is required by federal, state and local regulation.

The primary tool with which we implement our efforts on the ground - the "place" where people come together to recognize the common good - is the local watershed council, made up of community members representing a broad range of stakeholders working together to solve a shared problem on behalf of a shared place and in a way that balances economic, environmental and community values.

We now have 93 watershed councils and 45 soil and water conservation districts across the state putting thousands of projects on the ground which improve salmon habitat, and watershed health.

My final example involves 1999 decision by then-Secretary of the Interior, Bruce Babbitt, to make Steens Mountain in southeastern Oregon a National Monument. Steens Mountain is a unique environment where alpine conditions exist in a desert landscape. The lakes, aspen groves, secret canyons and forgotten homesteads more than justified Babbitt's desire to protect this special place.

Predictably, however, the proposed designation as a National Monument created an intensely emotional reaction both from the people living on and around Steens Mountain, and from those who loved to come there and visit.

We quickly realized that debating whether or not to create a monument missed the point. The real question was "What is our common goal for this treasured landscape and what is the best tool to achieve it?"

By convening a working group of all the stakeholders - by creating a place to determine the common good, if you will - it became clear that the mutual objective was to keep this special place in its current condition into perpetuity. It also became clear that Monument designation was the wrong tool by which to achieve that objective in part because thirty percent of the Steens is in private ownership.

For decades private landowners had been good stewards -- working cooperatively with federal land managers to assure recreational and grazing access. A Monument designation would result in hundreds of miles of fences being built across the mountain. Grazing operations would likely become unprofitable, causing land to be sold for trophy homes on this coveted landscape. Exactly the wrong outcome.

By reframing the question from a polarized debate about a "Monument" to an effort to find common ground - to find the area of sustainability, if you will - the Steens Mountain Cooperative Management and Protection Act of 2000 was unanimously passed by Congress.

This case study in the power of Enlibra, protects 500,000 acres of Steens Mountain, including 170,000 of new wilderness. It also recognizes the importance of maintaining cooperative land management across ownerships to protect the ecological, social and economic integrity of the area.

I share this example with you to illustrate the importance of having a clear-eyed, honest understanding of what the real debate is about - about what is causing the tension and the perceived conflict between economic, environmental and community values. In this case, the debate was not over whether or not to have a Monument - but rather over how to protect the Steens as it exists today.

I would suggest to you that the debate over logging old growth may well fall into the same category. Isn't the real economic issue involved here how to maintain a

sustainable supply of timber to our mills - not whether the logs are 80 years old or 300 years old?

In my own profession - medicine - we often confuse the debate over access to health care with the challenge of keeping people healthy. Health care is a means that end - it is not an end in itself. Health care has no intrinsic value beyond its relationship to health. Reframing the debate in this way allows us to ask the real question: what is the value of the health care we are paying for in terms of the health it produces?

As I said to you at the first Enlibra conference in Phoenix - Enlibra does not require that we abandon our entrenched positions - but it does require that we make the effort to see beyond them to seek the common ground - the area of sustainability - which can afford us the place and the opportunity to, in the words of Wallace Stegner, "outlive our origins and build a society to match our scenery."

1[1] For a more complete discussion of this, see Daniel Kemmis, *Community and the Politics of Place* (Norman: University of Oklahoma Press, 1990), and Daniel Kemmis, *This Sovereign Land* (Washington: Island Press, 2001).

**Oregon Watershed Enhancement Board, “The Oregon Plan for
Salmon and Watersheds: 2005-2007 Biennial Report”**

2005 - 2007 Biennial Report



The



REGON

PLAN

FOR SALMON AND WATERSHEDS



The Oregon Plan for Salmon and Watersheds

Biennial Report

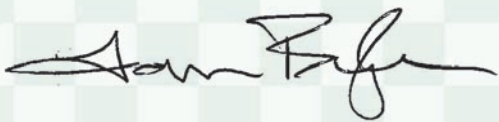
2005-2007

This is the sixth report on the Oregon Plan for Salmon and Watersheds. The report provides an update on the accomplishments and continuing efforts of people throughout Oregon to improve and protect clean water and recover and maintain healthy populations of fish and wildlife in our watersheds.

The Oregon Plan is unique because it engages communities in the restoration and long-term stewardship of their watersheds. This extraordinary effort encourages local partnerships and voluntary actions to improve the conditions of our watersheds. Over the years, these actions have made Oregon a national leader in local cooperative conservation.

This report collects project and condition data, voluntary private lands restoration information, and agency program accomplishments under the Oregon Plan. Consistent with the past two reports, this document continues to provide specific data on each of the state's fifteen reporting basins. A new element to this report is the inclusion of stories about the people, partnerships, and on-the-ground projects that are benefiting watersheds and communities across the state.

Thanks to the many Oregon Plan partners who contributed to this report.



Thomas M. Byler
Executive Director
Oregon Watershed Enhancement Board

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www.oregon.gov/OWEB
 (publication available for download)

Overview and What's New

“To restore the watersheds of Oregon and to recover the fish and wildlife populations of those watersheds to productive and sustainable levels in a manner that provides substantial environmental, cultural, and economic benefits.”



Oregon Plan Reporting Basins

This is the mission of the Oregon Plan for Salmon and Watersheds, an initiative all Oregonians can join to help restore healthy watersheds that support the economy and quality of life of Oregon. The Oregon Plan has four elements with success depending on strong implementation of all elements:

1. Coordinated state and federal agency and tribal actions to support private and voluntary restoration efforts, effectively implement regulatory programs, soundly manage public lands, and promote public education and awareness about watersheds and salmon.
2. Voluntary restoration actions by private landowners - individuals and industry, rural and urban - with support from citizen groups, businesses, and local government.
3. Monitoring watershed health, water quality, and salmon recovery to document existing conditions, track changes, and determine the impact of programs and actions.
4. Strong scientific oversight by the Independent Multidisciplinary Science Team, an independent panel of scientists who evaluate the plan's effectiveness, identify needed changes, and guide research investments.

This 2005-2007 Biennial Report informs readers about the implementation and effectiveness of the Oregon Plan. Basin Reports and Implementation (pages 4 - 51) highlight restoration, accomplishments, and efforts to implement all four Oregon Plan elements in the state's fifteen basins.

What's New for 2005-2007

Basin Reports

- New Fish Screens and Fishways data (project locations and cost information, 2004 and 2005 only).
- New Protection data (project locations for both land and water habitat protection, cost information for land habitat protection, 2004 and 2005 only).
- Change in land use as a context for basin conditions (1974-2001, ODF).

Implementation

- One page per basin showcasing the people, agencies, and projects at work in the watershed.

Web Component

- Additional and more detailed project stories are available at www.oregon.gov/OWEB.

Ten Years of Oregon Plan Reporting

In 1995, Oregon began developing what eventually became known as the Oregon Plan. The original strategy, called the Oregon Coastal Salmon Restoration Initiative, was focused on recovery of coastal coho salmon and improvement of water quality statewide. In 1997, the Legislature expanded its scope and renamed it the Oregon Plan for Salmon and Watersheds, or the Oregon Plan. Since 1997, the plan has addressed native fish, wildlife, and water quality throughout the state and many actions have occurred in the past 10 years to implement the Oregon Plan.

The Oregon Watershed Restoration Inventory was established in 1995 to track completed restoration work. Except for projects funded by OWEB, all reporting to this database is voluntary. The Basin Reports section includes data from the OWRI, the Federal Interagency Restoration Database, and the Grande Ronde Model Watershed Program.

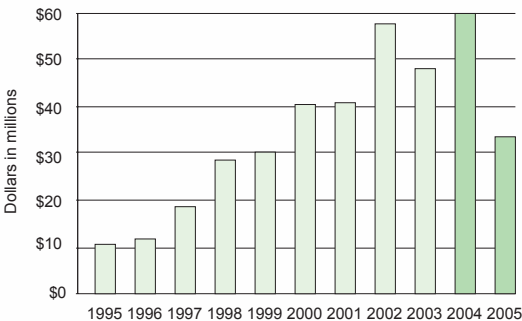
- In 1995-1996, the total funding for completed and reported restoration projects from state, federal, and other sources was nearly \$23 million. In 2004-2005, total funding was over \$96 million. From 1995 to 2005, the total funding for reported investment in restoration and protection projects exceeded \$388 million.
- Restoration treatments, as shown in the table below, continue across Oregon, indicating the ongoing work that remains to be implemented.

OWEB, administering dedicated Measure 66 State Lottery and Pacific Coastal Salmon Recovery Fund dollars, established the OWEB Grant Management System in 2006, which allows grant recipients instant, real-time information about OWEB grants.

“The Paisley Weir project would not have been possible without the grant from OWEB. Funds were spent locally, so the project helped both the Chewaucan River and the local community.”

- John Merwin,
Bagley Ditch Corporation,
Lake County

Funding for Completed and Reported Restoration by Year, 1995-2005
Adjusted to 2005 Dollars



Note: Many of the 2005 funded projects will be reported in future years.

Watershed Restoration Outcomes

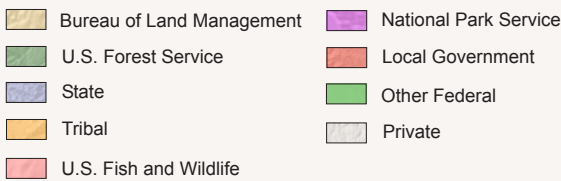
Restoration Treatments	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Riparian miles treated	162	162	339	341	331	379	388	394	553	303	396	3749
Road: miles of road closures and decommissionings	245	45	138	281	373	321	321	205	191	133	96	2349
miles of road improvements	349	305	564	770	802	761	606	1058	877	717	819	7630
Fish Passage: stream crossings improved	51	87	179	326	292	250	308	245	202	167	116	2223
miles made accessible to fish due to stream crossing improvements	25	55	167	507	440	290	335	386	405	249	272	3131
push-up dams retired	10	6	5	14	8	8	15	24	6	15	1	112
Fish Screens: irrigation diversions with fish screens installed	0	0	0	5	2	5	155	110	113	70	63	523
Acres enrolled in CREP program	0	0	0	0	909	747	1953	3045	2351	4370	3604	16979

Note: Totals may differ from the 2003-2005 report summary due to data revisions and additional data reported for previous years.

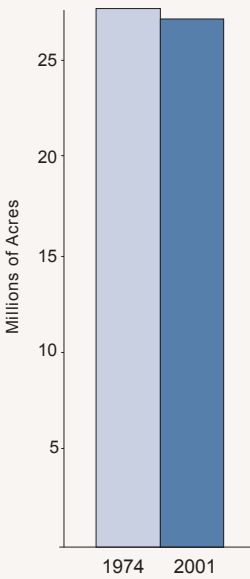
Land Use Change in Oregon 1974 - 2001

Since 1973, Oregon has had a statewide land use program based on 19 planning goals. Oregon's statewide goals are achieved through local comprehensive planning. This program has limited the rate of change of land use from non-federal resource lands (agricultural, forestry, range, or open space) to developed lands (low-density residential or urban). The history of land use change often reflects local population increases. Since 1973, land use changes from non-federal resource land to developed land have been greatest in the Willamette and Deschutes basins. Change from non-federal resource land to developed land can have a significant effect on the watershed functions and biological resources of a basin.

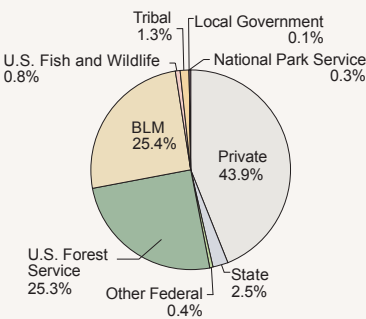
Land Ownership



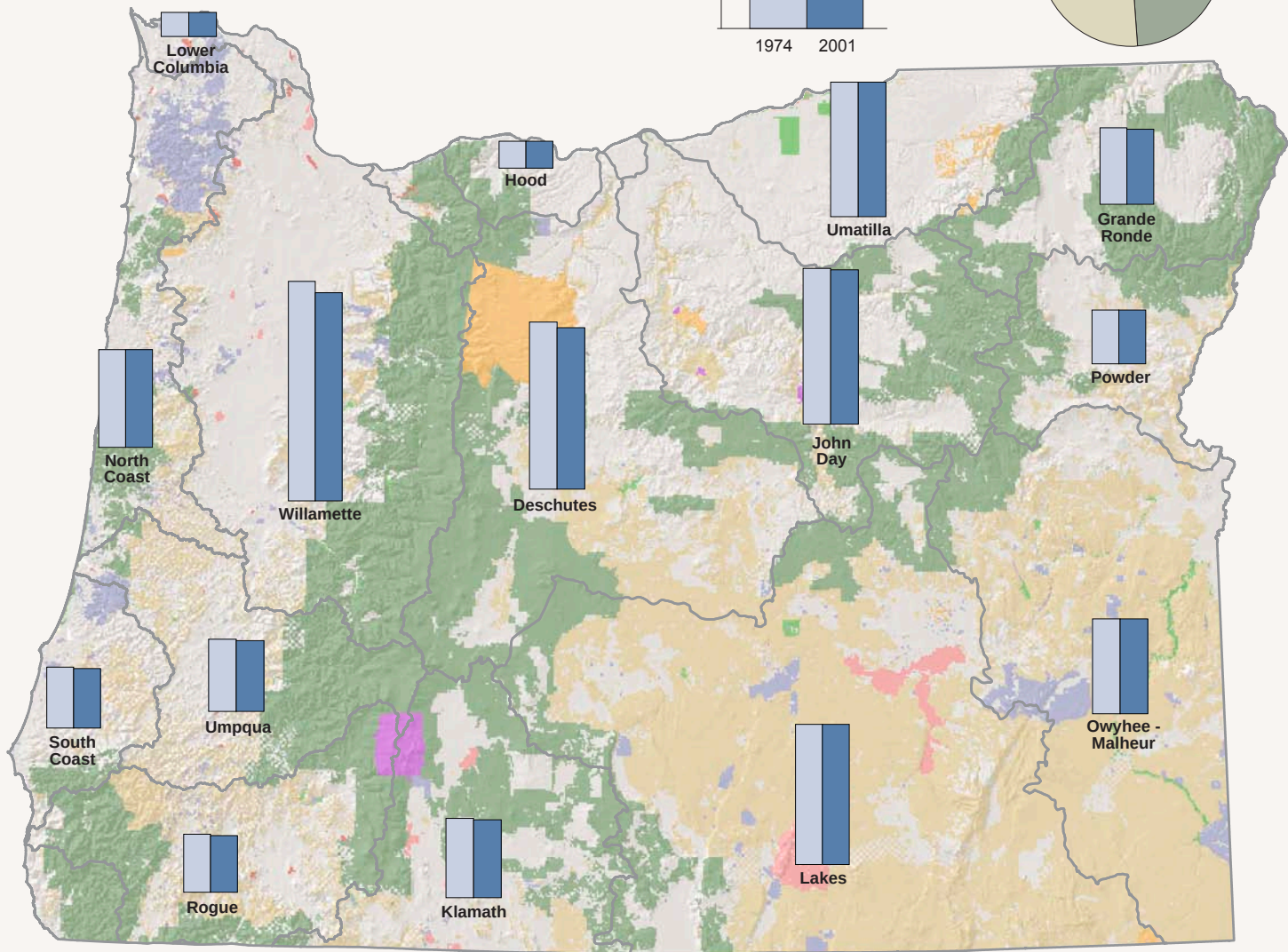
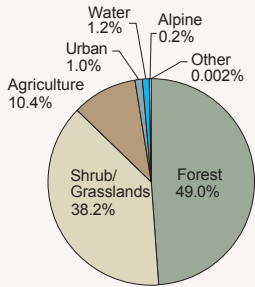
Statewide Change in Non-Federal Resource Land



Statewide Land Ownership



Statewide Land Cover



Change in Non-Federal Resource Land by Basin (Acres)

	1974	2001		1974	2001		1974	2001
Willamette	4,134,420	3,916,634	Umpqua	1,364,081	1,340,914	Powder	1,019,706	1,014,045
Deschutes	3,138,197	3,024,345	Grande Ronde	1,433,650	1,416,599	John Day	2,917,219	2,913,782
Rogue	1,102,666	1,056,287	Umatilla	2,540,286	2,525,868	Hood	512,540	511,154
Klamath	1,500,446	1,455,690	North Coast	1,839,168	1,827,530	Owyhee-Malheur	1,784,863	1,783,877
South Coast	1,147,626	1,121,405	Lower Columbia	457,475	448,644	Lakes	2,634,968	2,634,469

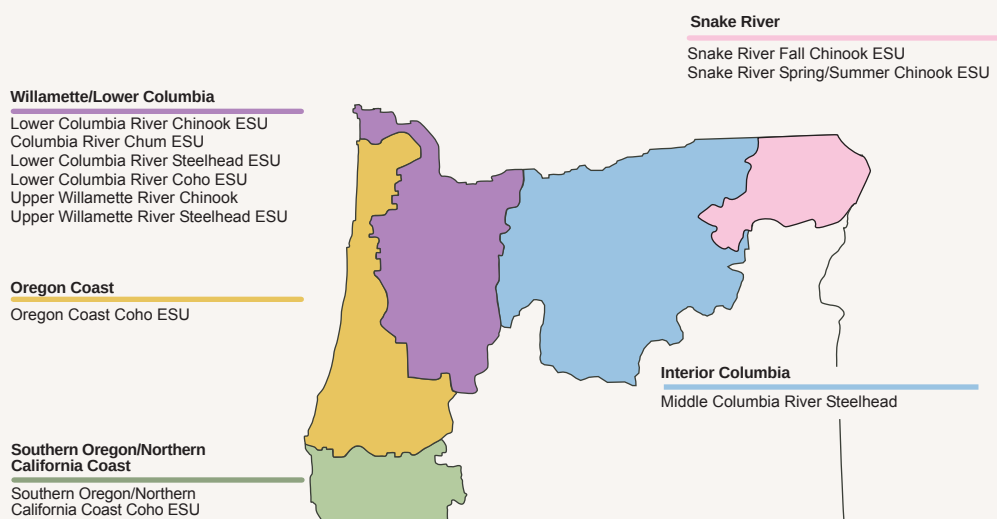
Conservation and Recovery Planning

Recovery plans are required for species listed under the federal Endangered Species Act (ESA). In Oregon, state agencies are participating with NMFS to develop plans consistent with ESA requirements and the requirements of Oregon's Native Fish Conservation Policy.

- A draft Coastal Coho Conservation Plan has been completed. While coho are not listed under the ESA at this time, the plan identifies measures to be taken to increase the viability and the abundance of each population in the future.

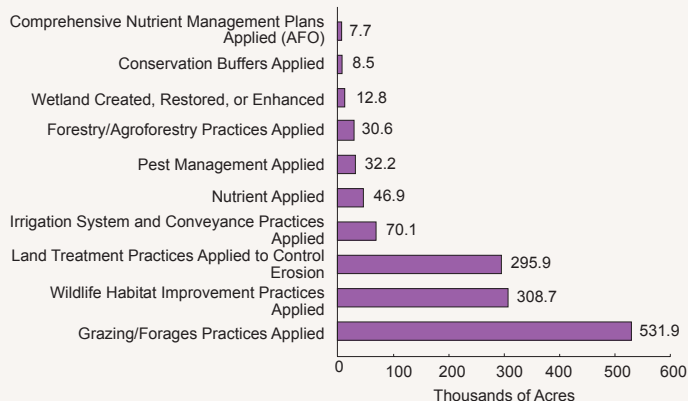
- The Mid-Columbia River Steelhead Recovery Plan will be available in early 2007.

- Additional plans for the Upper Willamette, Lower Columbia, Southern Oregon-Northern California, and Snake River ESUs will be developed in 2007 and 2008 with local stakeholders to ensure that management measures are embedded in the affected communities.

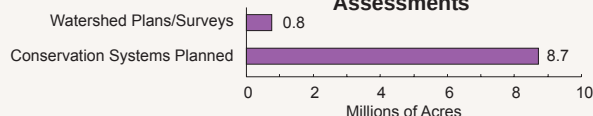


Federal Investments

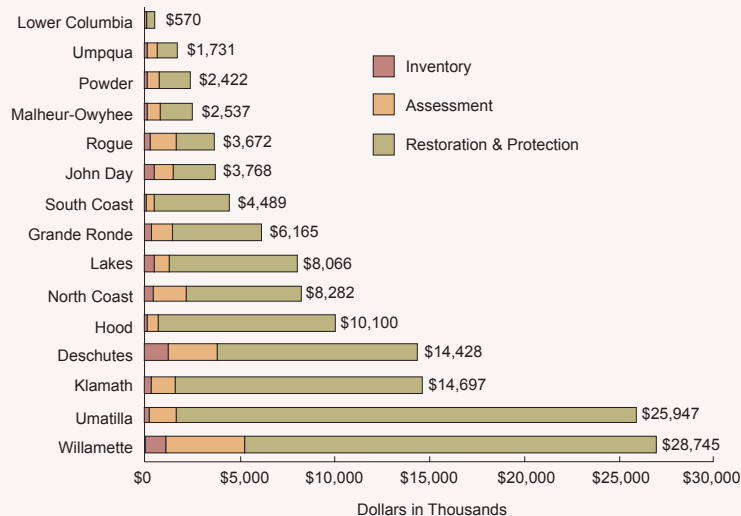
Natural Resources Conservation Service and Partner Land Treatment Accomplishments, July 2004 - June 2006



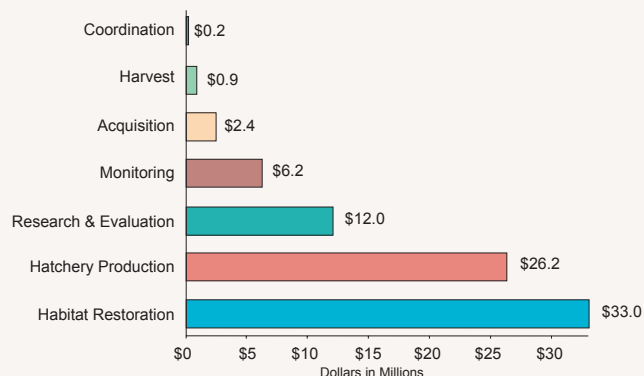
Assessments



Natural Resources Conservation Service Funding By Basin, July 2004 - June 2006

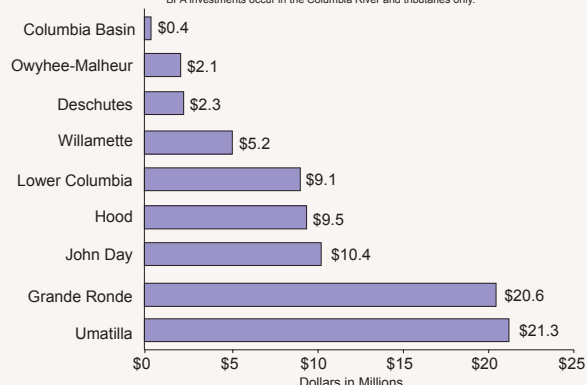


Bonneville Power Administration Investment by Category 2003-2005



Bonneville Power Administration Investment by Basin 2003-2005

* An additional \$104 million was spent Columbia Basin-wide some of which is applicable to Oregon. BPA investments occur in the Columbia River and tributaries only.



**NOAA National Marine Fisheries Service, “2006 Report to Congress:
Pacific Coastal Salmon Recovery Fund FY 2000-2005”**

Executive Summary

This 2006 Annual Report to Congress on the Pacific Coastal Salmon Recovery Fund (PCSRF) provides information on PCSRF accomplishments from FY 2000 through FY 2005. Additionally, it describes development of a Performance Reporting Framework and progress in meeting the salmon and steelhead restoration and conservation goals outlined in the Framework. This Report provides a summary of projects based on the efforts of states and tribes in salmon restoration and conservation using the PCSRF funds. This Report also provides an update on the status of Endangered Species Act (ESA) listed salmon and steelhead and the development of recovery plans.

The PCSRF was established by Congress in fiscal year 2000 to contribute to the restoration and conservation of Pacific salmon populations and their habitat. The Administration continues to support the PCSRF program. From 2000 to 2005 the President has requested \$570M for the PCSRF program and Congress has appropriated \$525M. Congressional appropriations for the PCSRF are provided to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) for allocation to the states of Washington, Oregon, California, Idaho, and Alaska, and the Pacific Coast and Columbia River tribes. The states and tribal commissions distribute their funds in accordance with memoranda of understanding with NMFS for salmon recovery and conservation projects to local governments, individual tribes, public partnerships, watershed councils, soil and water conservation districts, and other organizations and entities. The PCSRF has played an important role in leveraging additional funding and in-kind contributions (e.g., volunteer participation in salmon recovery from local and private sources), with most states providing significant amounts of matching funds.

The states and tribes are investing in priority activities to address conservation needs and identified factors limiting salmon recovery. They have used PCSRF funding to protect and restore salmon habitat; conduct watershed



assessments to determine factors limiting salmon productivity; develop plans to address limiting factors; develop resource management plans; conduct salmon enhancement and supplementation activities; monitor and evaluate recovery actions and outcomes; and conduct research and monitoring on salmon populations. Over 5,700 PCSRF projects have been funded to date, with habitat restoration projects (over 3,000) accounting for the largest number, followed by over 1,300 watershed/species assessments and subbasin planning projects.

States and tribes working with NMFS recently developed a Performance Reporting Framework to report progress on six major goals. Three of these goals are achievable in the short-term (< 5 years), including: enhanced availability and quality of habitat, improved management practices, and major habitat limiting factors addressed for ESA-listed salmon. Two of the goals are mid-term (5-15 years) and include improved status of ESA-listed salmon (e.g., naturally spawning populations increased) and maintained healthy salmon populations. The goal

that will be addressed in the longer term (>15 years) is the overall sustainability of Pacific salmon. For each of these goals, performance indicators have been identified and are described and quantified within this Report. For example, toward the goal of increased availability and quality of habitat, nearly 2,000 acres of wetlands have been created and more than 14,000 acres treated. Cumulatively, including riparian, estuarine, wetland, and upland efforts, nearly 290,000 acres of habitat have been treated and restored. Increases in population numbers have been shown in 16 of the Pacific salmon Evolutionarily Significant Units (ESUs) and steelhead Distinct Population Segments (DPSs).

Pacific salmon ESUs and steelhead DPSs have been grouped into geographic recovery domains. These provide a regional approach to identify the recovery needs and implement the actions necessary for multiple ESUs in an area. The development of recovery plans varies across the region, with five draft interim regional recov-

ery plans, one final interim plan, and two proposed ESA recovery plans currently available. Major factors limiting recovery for each ESU and DPS and activities underway to address recovery needs in the domains are described in this Report. Based on the Performance Reporting Framework, nearly 60 percent of PCSRF project activities within the recovery domains are addressing habitat limiting factors.

The PCSRF is making important contributions to systematic and cumulative efforts to improve the quality of salmon habitat, increase knowledge about salmon and steelhead life cycles and requirements, and prioritize conservation and recovery actions. While the PCSRF projects are improving the quality of salmon habitat in streams and watersheds across the region and there are signs of increased salmon abundance in some areas, continued commitment and collaboration are needed to achieve the common goal of full recovery and sustainability of Pacific salmon and steelhead populations.

Chapter 1: Introduction

Background

The Pacific Coastal Salmon Recovery Fund (PCSRF) supports the restoration and conservation of Pacific salmon and their habitat in Washington, Oregon, California, Alaska, and Idaho. The PCSRF was established by Congress in response to the listings of Pacific salmon and steelhead¹ populations under the Endangered Species Act (ESA) in the 1990s, and the impacts of the 1999 Pacific Salmon Treaty Agreement between the United States and Canada. Since FY 2000, the PCSRF has supported state, local, and tribal efforts to restore and protect salmon habitat critical to the various stages of the salmon lifecycle. Additionally, the PCSRF is used to conduct watershed assessments; develop recovery and restoration plans at a variety of scales; enhance salmon populations; educate constituencies; and conduct research to monitor, evaluate, and support salmon restoration and conservation efforts. The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) oversees the administration of the PCSRF and distributes the Congressional appropriations to states and

tribes in the Pacific Coast region. Congressional appropriations for FY 2000–2006 are shown in Exhibit 1-1.² Idaho was added to the PCSRF program in FY 2004.

Salmon Restoration and Conservation

Pacific salmon and steelhead are anadromous fish that spawn and rear in freshwater but spend much of their adult life in the ocean (see the salmon life cycle diagram on the inside front cover of this Report). Their habitat ranges from the inland watersheds draining into the region's rivers and streams, through coastal estuaries, to the Pacific Ocean. Salmon return to spawn in their birth

¹ Throughout this Report, unless otherwise specified, the word "salmon" is generally used to also refer to steelhead.

² Authorization for appropriations through FY 2003 was provided in the FY 2001 Appropriations Act (P.L. 106-553). Congress authorized the FY 2004 appropriation in P.L. 108-199 and the FY 2005 appropriation in P.L. 108-447. The amounts in Exhibit 1-1 are after rescissions and other reductions.

Exhibit 1-1: Congressional Appropriation of PCSRF Funds (in millions)

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Washington	\$18.0	\$30.2	\$34.0	\$27.8	\$26.0	\$24.6	\$24.7
Alaska	\$14.0	\$19.5	\$27.0	\$21.9	\$20.6	\$23.2*	\$21.7
California	\$9.0	\$15.1	\$17.0	\$13.9	\$13.0	\$12.8	\$6.4
Oregon	\$9.0	\$15.1	\$17.0	\$13.9	\$13.0	\$12.8	\$6.4
Idaho	•	•	•	•	\$4.9	\$4.4	\$2.2
Pacific Coastal Tribes	\$6.0	\$7.4	\$11.0	\$8.9	\$8.4	\$7.9	\$3.9
Columbia River Tribes	\$2.0	\$2.5	\$4.0	\$3.0	\$3.1	\$2.5	\$1.2
Total	\$58.0	\$89.8	\$110.0	\$89.4	\$89.0	\$88.2*	\$66.5

* Does not include \$500K (pre-rescission) that Congress transferred to a vessel buy-back program.

stream leading to genetically distinct populations that have evolved over time based on geography and other factors. These population groups are referred to as Evolutionarily Significant Units (ESUs) for salmon and Distinct Population Segments (DPSs) for steelhead. There are 37 salmon ESUs and 15 steelhead DPSs (52 total) within the Pacific Coast region (not including Alaska). Of these, 16 ESUs and 10 DPSs are currently listed as threatened or endangered under the ESA. The ESUs and DPSs are organized into seven recovery domains. A map showing the recovery domains and ESA-listed ESUs/DPSs can be found on the inside back cover of this Report.

Many human-caused and natural factors have contributed to the decline of salmon over the past century. Activities such as urban development, logging, grazing, hydro-power, and agriculture can alter important spawning and rearing habitat. Past harvest and hatchery practices have also affected salmon abundance and left populations more susceptible to fluctuations in the natural environment, such as changing ocean conditions, predators, droughts, fires, and floods. Many of these activities and conditions continue to threaten salmon and their habitat, even as programs such as the PCSRF seek to restore endangered and threatened salmon and prevent other salmon populations from becoming threatened with extinction.

The actual benefits of restoration activities can take years to realize due to the significant time lag between investment and project activity, activity and physical habitat changes, and habitat changes and biological response. This time lag makes it all the more important to ensure that funds used for salmon restoration and conservation address the highest priority needs and that the results of recovery actions are monitored and evaluated over time. Accordingly, the PCSRF supports watershed assessments and recovery planning efforts to identify the key factors that limit salmon recovery (limiting factors) for different ESUs and DPSs and to identify and prioritize recovery actions based on those limiting factors. The PCSRF also provides resources for projects that monitor the health and status of watersheds and salmon stocks, providing information needed to evaluate whether habitat restoration projects and recovery actions are appropriate and effective.

PCSRF Performance Goals and Measures

The overall purpose of the PCSRF is to contribute to the restoration and conservation of salmon and steelhead populations. Over the last several years, NMFS and its state and

tribal partners have worked together to identify short-, mid-, and long-term goals and performance indicators that can be used to assess progress being made toward those goals. For more information on goals, see the *Pacific Coastal Salmon Recovery Fund Performance Goals, Measures and Reporting Framework* at <http://www.nwr.noaa.gov/Salmon-Recovery-Planning/PCSRF/upload/PCSRF-Perf-Framework.pdf>. The goals of the PCSRF are as follows:

Short-Term

- » Enhance the availability and quality of habitat
- » Improve management practices
- » Address major habitat limiting factors for ESA-listed salmon and steelhead

Mid-Term

- » Maintain healthy salmon populations
- » Improve the status of ESA-listed salmon

Long-Term

- » Ensure overall sustainability of naturally-spawning Pacific salmon.

NMFS and the states and tribes have developed a Performance Reporting Framework that provides an evolving mechanism to track progress. Development of the indicators in the Framework focused on the specific investments being made with the PCSRF, recognizing that there are other variables that affect salmon recovery. Other variables include biological constraints inherent in the salmon lifecycle and factors such as climate and ocean conditions. The Performance Reporting Framework (Exhibit 1-2) outlines the “inputs” into the program (e.g., funding, in-kind contributions), “outputs” (e.g., number of projects, number of acres/miles treated), and “outcomes” (e.g., improved habitat, fish populations). The PCSRF tracks and reports on performance at two different spatial scales—region-wide and recovery domain level. Indicators that provide measures of progress relative to outputs and outcomes are identified in the following sections and chapters.

Exhibit 1-2: Performance Reporting Framework

Inputs	Reporting Categories	Outputs	PCSRF Goals (Outcomes)		
			Short-Term (<5 years)	Mid-Term (5-15 years)	Long-Term (>15 years)
PCSRF funding to state and tribal governments through grants and contracts	» Habitat Restoration » Habitat Protections » Habitat Access » Water Quality » Water Quantity » Hatcheries/Enhancement » Harvest Management » Watershed/Species » Planning and Assessment » Recovery Plan Development and Implementation » Research, Monitoring and Evaluation » Outreach, Education and Technical Assistance	» Instream habitat projects » Wetland habitat projects » Estuarine habitat projects » Land acquisition projects » Riparian habitat projects » Upland habitat projects » Fish passage projects » Hatchery fish enhancement projects » Watershed/species planning and assessment projects » Research, monitoring, and evaluation projects	Enhanced availability and quality of habitat	Improved status of ESA-listed salmon (naturally spawning populations increased)	Overall sustainability of Pacific salmon
			Improved management practices		
			Habitat limiting factors addressed for ESA-listed salmon	Maintained healthy salmon populations	
State direct match resources					
State, tribal, and other indirect contributions					

Distribution of Funding for Salmon Restoration and Conservation

NMFS administers the PCSRF program and shares implementation with the states and tribes in the Pacific Coast region. Congressionally appropriated PCSRF funds are distributed by NMFS to the states and tribes, who subsequently distribute them to various partners to carry out activities that address the PCSRF goals. Final recipients of the PCSRF and matching state funds include state, local, and tribal governments; private landowners; conservation districts; local watershed groups; and many other organizations. NMFS has established memoranda of understanding (MOUs) with the states of Washington, Oregon, California, Alaska, and Idaho as well as three tribal commissions on behalf of 28 tribes³. The MOUs establish criteria and processes for funding priority projects.

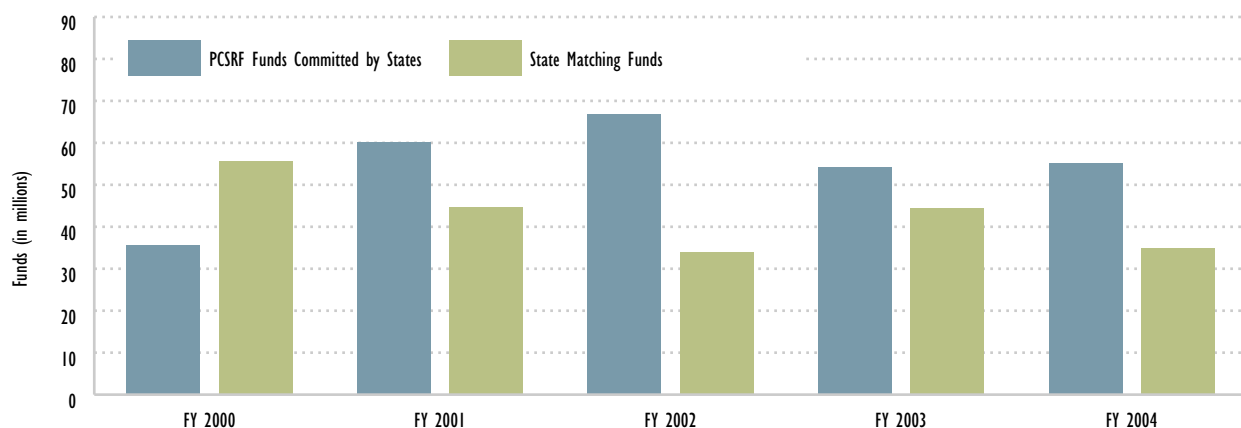
States provide funds to match the PCSRF distributions through their grant distribution processes. Tribes are not required to provide matching funds. The PCSRF and

state matching funds are, in turn, supplemented by private and local contributions at the project level, including additional resources, volunteer time, and other in-kind donations. Local support for salmon restoration and conservation activities that has occurred as a result of the implementation of collaborative PCSRF projects is difficult to quantify. Exhibit 1-3 shows the total amounts of PCSRF and state matching funds for salmon recovery (not including local and sponsor match) by fiscal year.

The PCSRF funds were awarded to the states and tribes as appropriations became available, which typically occurred well after the October 1 start of the federal fiscal year. States and tribes must submit grant applications to NMFS each year, and those grant awards are followed by state and tribal processes for screening and selecting priority projects and distributing the funds. Washington, Oregon, California, and Idaho each conduct a competitive grant process, which normally takes 4 to 12 months to complete. Many of the PCSRF funds are committed to projects in the year following the availability of appropriations due to these competitive funding cycles. Actual project completion can take several additional years because of construction windows, the seasonal nature of salmon work, permitting delays, and processes required to issue contracts for the work to be done. Evaluating progress toward the PCSRF goals of improved habitat and sustainable salmon requires multiple years of monitoring. The PCSRF grantees must target 10 percent of funds for monitoring and evaluation to ensure the program's ability to measure desired outcomes. Since the FY 2003 funding cycle, NMFS has required the PCSRF grantees to report information and metrics on project activities into a common database using a consistent set of performance indi-

³ The Northwest Indian Fisheries Commission (NWIFC) on behalf of 20 western Washington treaty tribes, the Klamath River Inter-Tribal Fish and Water Commission (KRITFWC) on behalf of the four Klamath River basin tribes, and the Columbia River Inter-Tribal Fish Commission (CRITFC) on behalf of four Columbia River basin treaty tribes. The first two Tribal Commissions are discussed as "Pacific Coastal" tribes in this Report.

Exhibit I-3: PCSRF and State Matching Funds Committed for Salmon Recovery in Washington, Oregon, and California, FY 2000-2004*



* FY 2004 includes Idaho.

cators (see <http://webapps.nwfsc.noaa.gov/pcsrp>). This database is now the source of information that is used in the Performance Reporting Framework to track progress toward the PCSRF goals.

The state processes for allocating the PCSRF and state matching funds complement existing state procedures and processes. These processes include rigorous reviews of the scientific and technical merit of proposals, public and stakeholder input, and mechanisms to ensure that selected projects include measures to provide for performance reporting and accountability in the use of public funds.

Report Organization

The remainder of this Report is organized into four chapters. Chapter 2 summarizes region-wide progress toward the PCSRF goals. The discussion focuses on outputs in the Performance Reporting Framework. Chapter 3 presents the most current information available about the status of ESA-listed salmon populations in Washington, Oregon, California, and Idaho and highlights progress toward the goals in each of the recovery domains. Much of the information presented in Chapter 3 represents outcomes that are derived primarily from sources outside of the PCSRF program. Chapter 4 describes the program's accomplishments at the state and tribal level. Chapter 5 offers concluding remarks about the PCSRF contributions to salmon restoration and conservation.



Appendices

Appendix A. References

Literature Cited and Additional References

- Avruch, Kevin. *Culture and Conflict Resolution*. Washington DC: United States Institute of Peace. 1998.
- Barkai, John. "Teaching Negotiation and ADR: The Savvy Samurai Meets the Devil." *Nebraska Law Review* 75, (1996): 704-751.
- Beach, L., J. Hamner, J. Hewitt, E. Kaufman, A. Kurki, J. Oppenheimer, and A. Wolf. *Transboundary Freshwater Dispute Resolution: Theory, Practice and Annotated References*. Tokyo and New York: United Nations University Press. 2000.
- Beer, Jennifer and Eileen Stief. *The Mediator's Handbook*. Gabriola Island, BC: New Society Publishers. 1997.
- Blumenthal, Dana and Jean-Luc Jannink. "A Classification of Collaborative Management Methods." *Conservation Ecology* 4, no. 2 (2000): 13. Accessed online September 19, 2011, <http://www.consecol.org/vol4/iss2/art13/>.
- Bormann, B.T., J.R. Martin, F.H. Wagner, G. Wood, J. Alegria, P.G. Cunningham, M.H. Brookes, P. Friesema, J. Berg, and J. Henshaw. "Adaptive Management." in *Ecological Stewardship: A Common Reference for Ecosystem Management*, ed. Johnson, N.C., A.J. Malk, W. Sexton, and R. Szaro (Oxford, UK: Elsevier Science Ltd., 1999), 505-534
- Bureau of Reclamation. *A Guide to Effective Solutions: Decision Process Guidebook*. Denver: U.S. Department of the Interior, Bureau of Reclamation. 2002.
- Cardwell, H., S. Langsdale, and K. Stephenson. *The Shared Vision Planning Primer: How to Incorporate Computer Aided Dispute Resolution in Water Resources Planning*. U.S. Army Corps of Engineers Institute for Water Resources Report 2008-R-2. 2009.
- Conflict Prevention and Resolution in Water Systems*. Ed. Aaron Wolf. Cheltenham, UK: Edward Elgar, 2001.
- Delli Priscoli, Jerome. *Collaboration, Participation and Alternative Dispute Resolution; Process Concepts for the (World) Bank's Role in Water Resources*. Draft. 1992.
- Priscoli, Jerome, and Aaron Wolf. *Managing and Transforming Water*. New York, NY: Cambridge University Press, 2009.
- Faure, Guy and Jeffery Rubin and *Culture and Negotiation: The Resolution of Water Disputes*. London: Sage Publications. 1993.

Feitelson, Eran and Marwan Haddad. "Identification of Joint Management Structures for Shared Aquifers." World Bank Technical Paper #415: Washington, DC. 1998.

Fisher, Roger and Elizabeth Kopelman and Andrea Schneider. *Beyond Machiavelli: Tools for Coping With Conflict*. New York, NY: Penguin Books. 1994.

Fisher, Roger and William Ury and *Getting to Yes: Negotiating Agreement Without Giving In*. New York: Penguin Books. 1981.

Getches, David *Water Law in a Nutshell*. St. Paul, MN: West Publishing Company. 1997.

Holling, C.S. *Adaptive Environmental Assessment and Management*. New York: John Wiley & Sons. 1978.

Isaacs, William *Dialogue: The Art Of Thinking Together*. New York: DoubleDay. 1999.

Jønrh-Clausen, Torkil. *Integrated Water Resources Management (IWRM) and Water Efficiency Plans by 2005: Why, What and How?*. Stockholm, Sweden: Global Water Partnership. 2004. Available at: http://hqweb.unep.org/civil_society/GCSF8/pdfs/IWRM_water_efficiency.pdf

Kaufman, Edy. Innovative Problem-Solving Workshops. in *Second Track/Citizen's Diplomacy: Concepts and Techniques for Conflict Transformation.*, Ed. John Davies, Lanham: Rowman and Littlefield. 2002.

Kitzhaber, John. Personal interview. 3 Aug. 2004.

Kitzhaber, John. "Enlibra II." Environmental Summit on the West II. Salt Lake City, UT. 15 May. 2002.

Kitzhaber, John. "Western Governors' Association Enlibra Speech." Western Governors' Association Meeting. Denver, CO. 4 Dec. 1998.

Kliot, Nurit, Deborah Shmueli, and Uri Shamir. *Institutional Frameworks for the Management of Transboundary Water Resources*. Haifa, Israel: Water Research Institute. 1997. (Two volumes).

Kubly, D. and D.R. Clark. *An Adaptive Management Workshop Manual to Assist in the Prevention, Management, and Resolution of Water Resource Conflicts*. Salt Lake City: Bureau of Reclamation. 2012.

- LaBaron, Michelle. "Communication Tools for Understanding Cultural Differences." *Beyond Intractability*. June 2003.
<http://www.beyondintractability.org/bi-essay/communication-tools>
- Lederach, John P. *Preparing for Peace: Conflict Transformation Across Cultures*. Syracuse: Syracuse University Press. 1995.
- Lederach, John *The Little Book of Conflict Transformation*. Intercourse, PA: Good Books. 2003.
- Lee, Kai *Compass and Gyroscope: Integrating Science And Politics For The Environment*. Washington, DC: Island Press. 1995.
- Madigan, Denise and Gerard McMahon and Lawrence Susskind and Stephanie Rolley. *New Approaches to Resolving Local Public Disputes*. Washington, DC: National Institute for Dispute Resolution. 1990.
- Maslow, A.H. *Motivation and Personality*. New York, NY: Columbia University Press. 1990.
- Milich, Lenard and Robert G. Varady. "Openness, Sustainability, and Public Participation: New Designs for Transboundary River Basin Institutions." *The Journal of Environment and Development* 8, no.3 (1999): 258-306.
- Moore, Christopher *The Mediation Process: Practical Strategies for Resolving Conflict*. San Francisco, CA: Jossey-Bass. 2003.
- Murray, C. and D.R. Marmorek. "Adaptive Management: A Spoonful of Rigour Helps the Uncertainty Go Down." *Proceedings of the 16th International Conference, Society for Ecological Restoration, Victoria, Canada, August 24-26, 2004*.
- NOAA National Marine Fisheries Service. "2006 Report to Congress: Pacific Coastal Salmon Recovery Fund FY 2000-2005," NOAA National Marine Fisheries Service. 2006.
- Nyberg, Brian. "An Introductory Guide to Adaptive Management for Project Leaders and Participants." Vancouver, British Columbia: British Columbia Forest Service. 1999.
- Oregon Watershed Enhancement Board. "The Oregon Plan for Salmon and Watersheds: 2005-2007 Biennial Report," Salem, OR: Oregon Watershed Enhancement Board, 2006.
- Oregon Department of Land Conservation and Development. *Collaborative Approaches to Decision Making and Conflict Resolution for Natural Resource*

and Land Use Issues, Salem, OR: Oregon Department of Land Conservation and Development, 1996.

Peterson, Brooks *Cultural Intelligence: A Guide to Working with People from Other Cultures*. Yarmouth, ME: Nicholas Brealey Publishing. 2004.

Reflections on Water: New Approaches to Transboundary Conflicts and Cooperation. Eds. Blatter, Joachim and Helen Ingram . Cambridge, MA: MIT Press. 2001.

Rosenberg, Marshall *Nonviolent Communication: A Language of Life*. Encinitas, CA: Puddledancer Press. 2005.

Rothman, Jay. *Resolving Identity-Based Conflicts in Nations, Organizations, and Communities*. San Francisco, CA: Jossey-Bass. 1997.

Rothman, Jay. "Pre-Negotiation in Water Disputes: Where Culture is Core." *Cultural Survival Quarterly* 19, no.3 (1995): 19-22.

Rothman, Jay. "Supplementing Tradition: A Theoretical and Practical Typology for International Conflict Management." *Negotiation Journal* 5, no. 3 (1989): 265-277.

Sadoff, Claudia W. and David Grey. "Cooperation on International Rivers: A Continuum for Securing and Sharing Benefits." *Water International* 30, no. 4 (2005): 420-427.

Sadoff, Claudia W. and David Grey. "Beyond the river: the benefits of cooperation on international rivers." *Water Policy* 4, no. 5 (2002): 389-404.

Schoenhaus, Robert *Conflict management training: Advancing best practices*. Washington, DC: United States Institute of Peace. 2001.

Senge, Peter, and C. Otto Scharmer, and Joseph Jaworski, and Betty Flowers. "Seeing from the Whole," *Presence: Human Purpose and the Field of the Future*. New York, NY: Crown Business, 2004.

Senge, Peter, and C. Otto Scharmer, and Joseph Jaworski, and Betty Flowers. "Awakening faith in an alternative future." *Reflections* 5, no. 7 (2004): 1-16.

Stewart, John and Milt Thomas. *Dialogic Listening: Sculpting Mutual Meanings*. in *Bridges Not Walls: A Book About Interpersonal Communication*, edited by John . Stewart, New York: McGraw-Hill. 1995.

The Oquirrh Institute. Introduction and Overview: Chapter 1. in *The Enlibra Toolkit: Principles and Tools for Environmental Management*. Salt Lake City, UT: The Oquirrh Institute, 2003.

The Rocky Mountain Climate Organization. "Less Snow, Less Water: Climate Disruption in the West," Louisville, CO: The Rocky Mountain Climate Organization, 2005. Available at: http://www.tribesandclimatechange.org/docs/tribes_242.pdf.

The Utton Transboundary Resources Center. "Crossing Cultural Boundaries for Sustainable Solutions." *Lewis and Clark Law Review* (2005).

Walkerden, Greg "Adaptive Management Planning Projects as Conflict Resolution Processes." *Ecology and Society* 11, no. 1 (2005): 48. Accessed online September 12, 2011, <http://www.ecologyandsociety.org/vol11/iss1/art48/>.

Walters, C. *Adaptive Management of Renewable Resources*. New York: Macmillan Publishing Company. 1986.

Weeks, Dudley *The Eight Essential Steps to Conflict Resolution: Preserving Relationships at Work, at Home, and in the Community*. New York, NY: JP Tarcher. 1992.

Wells, Gail "Repairing the Commons." *Oregon's Agricultural Progress* 2006: 62-65.

Western Governors' Association. "Regional and National Policies Regarding Global Climate Change," Denver, CO: Western Governors' Association, n.d.. Available at: http://www.tribesandclimatechange.org/docs/tribes_254.pdf

Western Governors' Association. "Policy Resolution 07-3: Negotiated Indian Water Rights Settlements," Denver, CO: Western Governors' Association, 2007. Available at: <http://www.westgov.org/wga/publicat/Water06.pdf>

Western Governors' Association. "Policy Resolution 07-4: "Watershed Restoration Through Partnerships," Denver, CO: Western Governors' Association, 2007.

Western Governors' Association. "Water Needs and Strategies for a Sustainable Future," Denver, CO: Western Governors' Association, 2006. Available at: <http://www.westgov.org/wga/policy/07/indian-water-rights.doc>

Western Governors' Association. "Policy Resolution 05-25: Watershed Restoration Through Partnerships," Denver, CO: Western Governors' Association, 2005.

Western Governors' Association. "Policy Resolution 02-07: Principles for Environmental Management in the West," Denver, CO: Western Governors' Association, 2002.

Wikipedia. "Maslow's Hierarchy Of Needs," Wikipedia. 2007.

Wilkinson, Charles. "Water in the West." *Open Spaces: Views from the Northwest* 1, no. 3 (1998): 72-85.

Williams, B.K., and E.D. Brown. Adaptive Management: The U.S. Department of the Interior Applications Guide. Washington, DC: U.S. Department of the Interior. 2012. Accessed online September 10, 2012:
<http://www.usgs.gov/sdc/doc/DOI-Adaptive-Management-Applications-Guide-27.pdf>.

Williams, Byron K., Robert C. Szaro, and Carl D. Shapiro. "Adaptive Management: the U.S. Department of the Interior Technical Guide." Washington, D.C.: Adaptive Management Working Group, U.S. Department of the Interior. 2009. Accessed online August 20, 2012:
<http://www.doi.gov/initiatives/AdaptiveManagement/documents.html>

Wolf, Aaron. "Criteria for Equitable Allocations: The Heart of International Water Conflict." *Natural Resources Forum* 23, no. 1 (1999): 3-30.

Wondolleck, J., and S. Yaffe. *Making Collaboration Work: Lessons from Innovation in Natural Resource Management*. Washington, D.C.: Island Press. 2000.

Appendix B. Full-Sized Overheads

Contents:

- Ov-0.1: Four Stages of Water Conflict Transformation (Figure 2)
- Ov-0.2: A New View of Conflict
- Ov-0.3: Old/Young Woman
- Ov-0.4: Styles of Conflict Management (Figure 2)
- Ov-I.1: The IWRM “Comb” (Figure 3)
- Ov-II.1: Map of the Sandus River Basin (Map 1)
(With Jurisdiction Boundaries)
- Ov-II.2: Map of the Sandus River Basin (Map 2)
(Without Jurisdiction Boundaries)
- Ov-II.3: Maslow’s Hierarchy of Needs

OVERHEAD (OV-0.1)

Type of Process/ Negotiation Stage⁷²	Focus of Process	Collaborative and transformational skills⁷³	Context, Geographic Scope, or Framing for Outcomes
Adversarial	Rights	Trust-building; deepening understanding of conflict	State, federal, tribal land and water laws; Priority, jurisdiction & supremacy/sovereignty of rights
Reflexive	Needs and Interests	Skills-building in listening for and identifying positions, needs and interests	 Watersheds/Basins
Integrative	Benefits/Values/ Reframing	Consensus-building: Relationship-building	 “Problem- shed”/“Benefit-shed”
Action	Governance in relationship to dynamic systems: equity	Capacity-building; community-building	 Networked systems across state, region and/or country

Figure 2: Four Stages of Water Conflict Transformation

⁷² These stages build primarily on the work of Jay Rothman, who initially described his stages as ARI – Adversarial, Reflexive, and Integrative (Rothman 1989). When ARI become ARIA, adding Action, Rothman’s terminology (1997) also evolved to Antagonism, Resonance, Invention, and Action. We retain the former terms, feeling they are more descriptive for our purposes.

⁷³ Expanded from and including Kaufman (2002), who ties each set of dynamics specifically to Rothman’s ARIA model in great detail, based on his extensive work conducting “Innovative Problem Solving Workshops” for “partners in conflict” around the world.

OVERHEAD (OV-0.2)**A New View of Conflict**

<i>From perceiving conflict as always being...</i>	<i>To perceiving conflict as often being...</i>
A disruption of order, a negative experience, an error or mistake in a relationship	An outgrowth of diversity that might hold possibilities for mutual growth and for improving the relationship
A battle between incompatible self-interests or desires	One part of a relationship, a part that involves needs, values, perceptions, power, goals, feelings, and so on, not just interests or desires
An isolated event we allow to define the entire relationship	Occurrences that punctuate a long- term relationship and that can help clarify it
A struggle only between right and wrong, good and evil	A confrontation between differences in certain aspects of a relationship, but not to the exclusion of other aspects that are still there to build on

Overhead (Ov-0.2): A New View of Conflict

OVERHEAD (OV-0.3)



Overhead Ov-0.3: Old/Young Woman

OVERHEAD (OV-0.4)

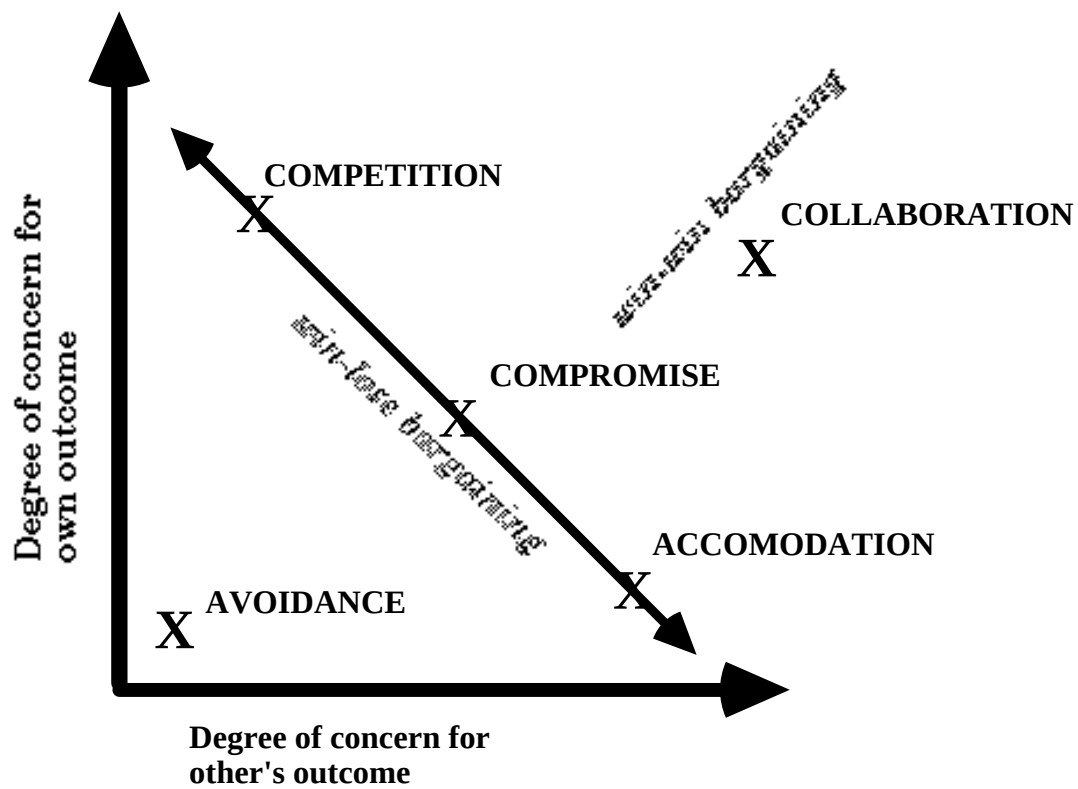
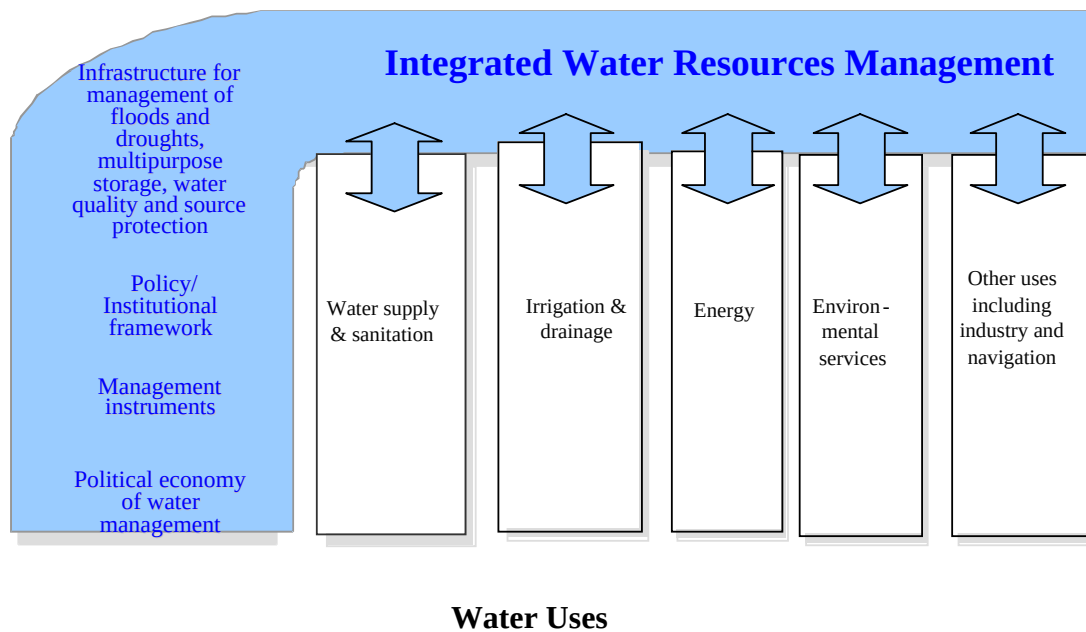


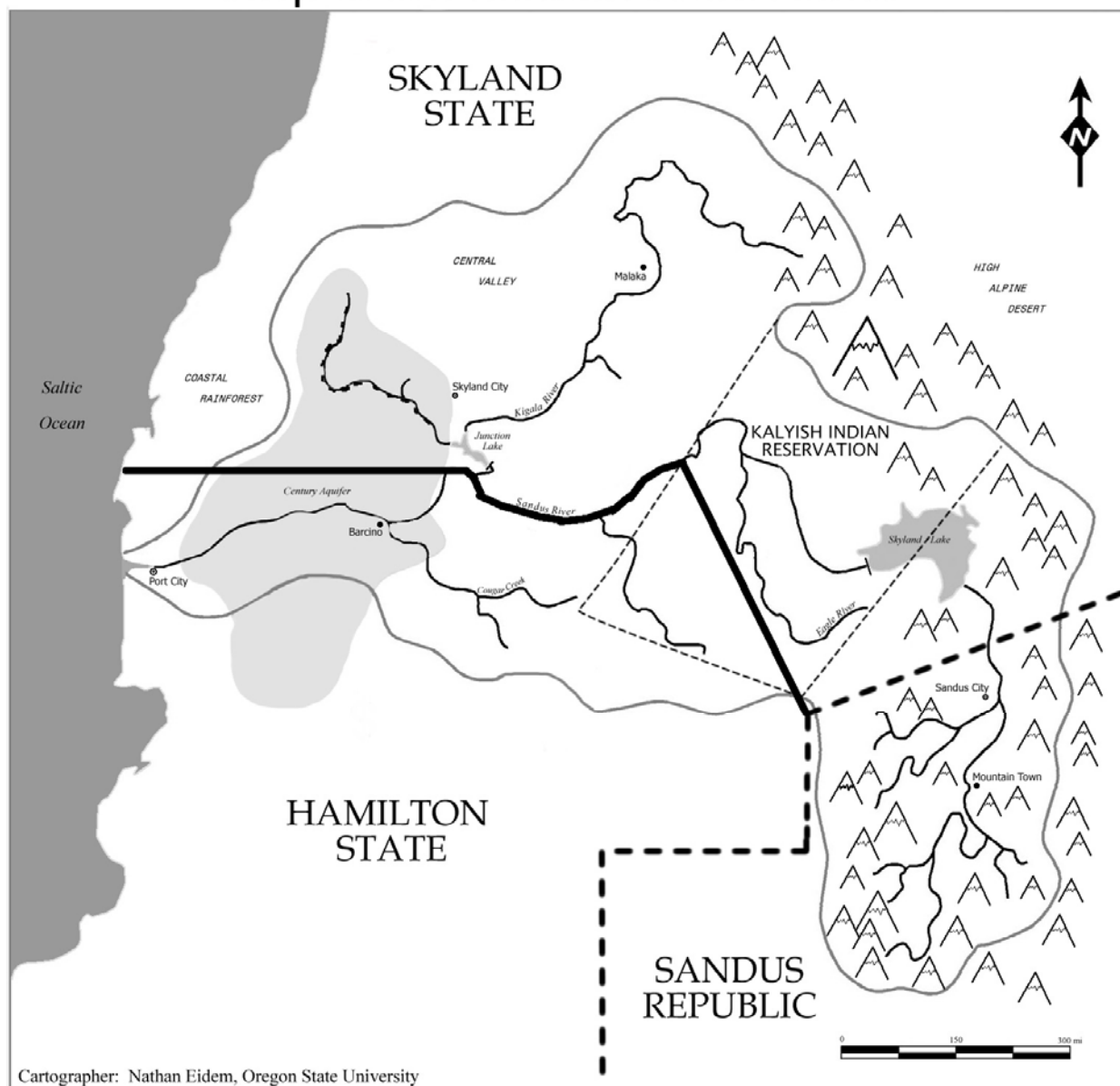
Figure 3: Styles of Conflict Management

OVERHEAD (OV-I.1)

**Figure 4: The IWRM “Comb”
Overhead (I.1)**

OVERHEAD (OV-II.1)

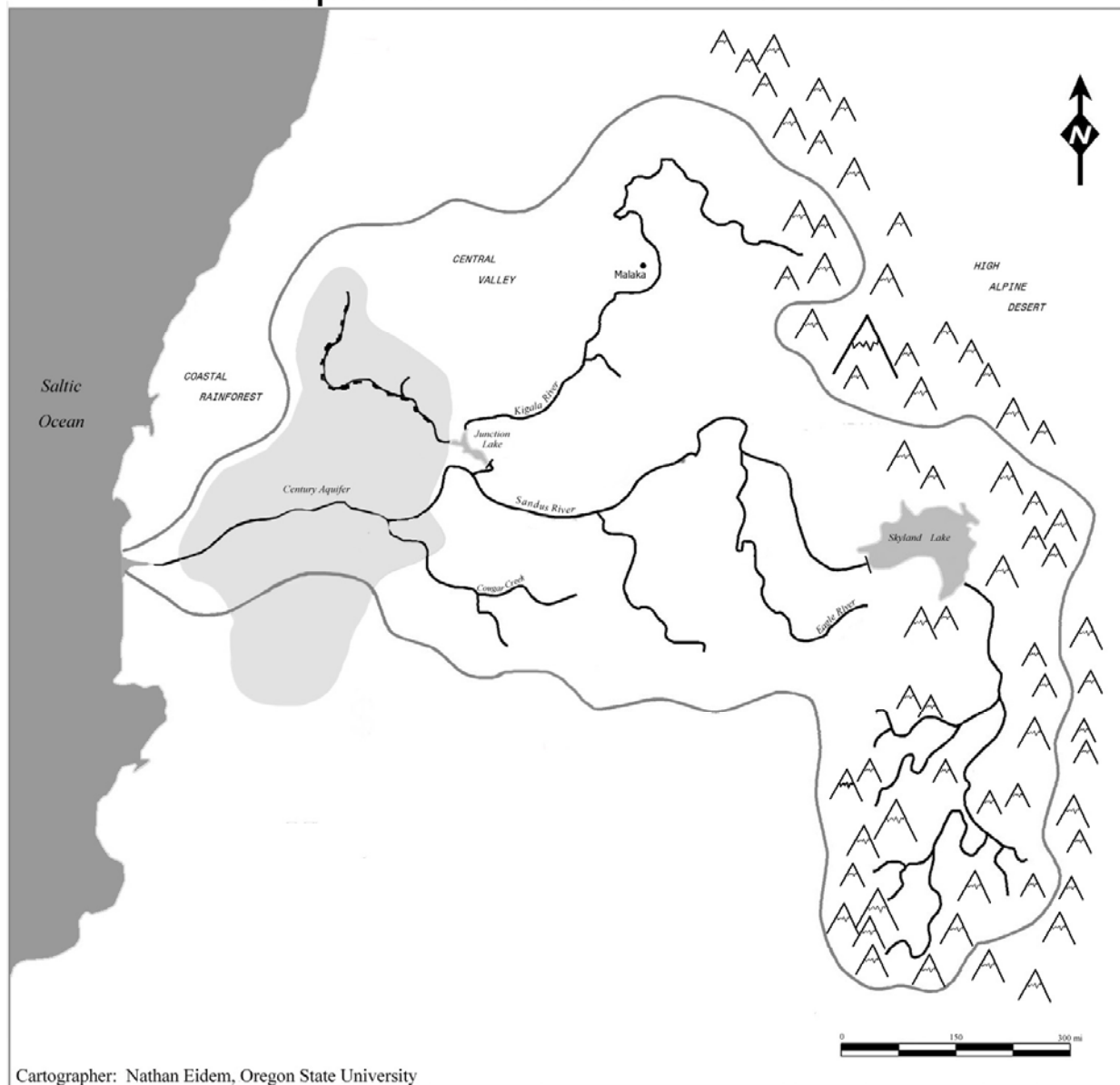
Map of the Sandus River Basin



Map 1: Map of the Sandus River Basin with Jurisdiction Boundaries

OVERHEAD (OV-II.2)

Map of the Sandus River Basin

**Map 2: Map of the Sandus River Basin without Jurisdiction Boundaries**

OVERHEAD (OV-II.3)

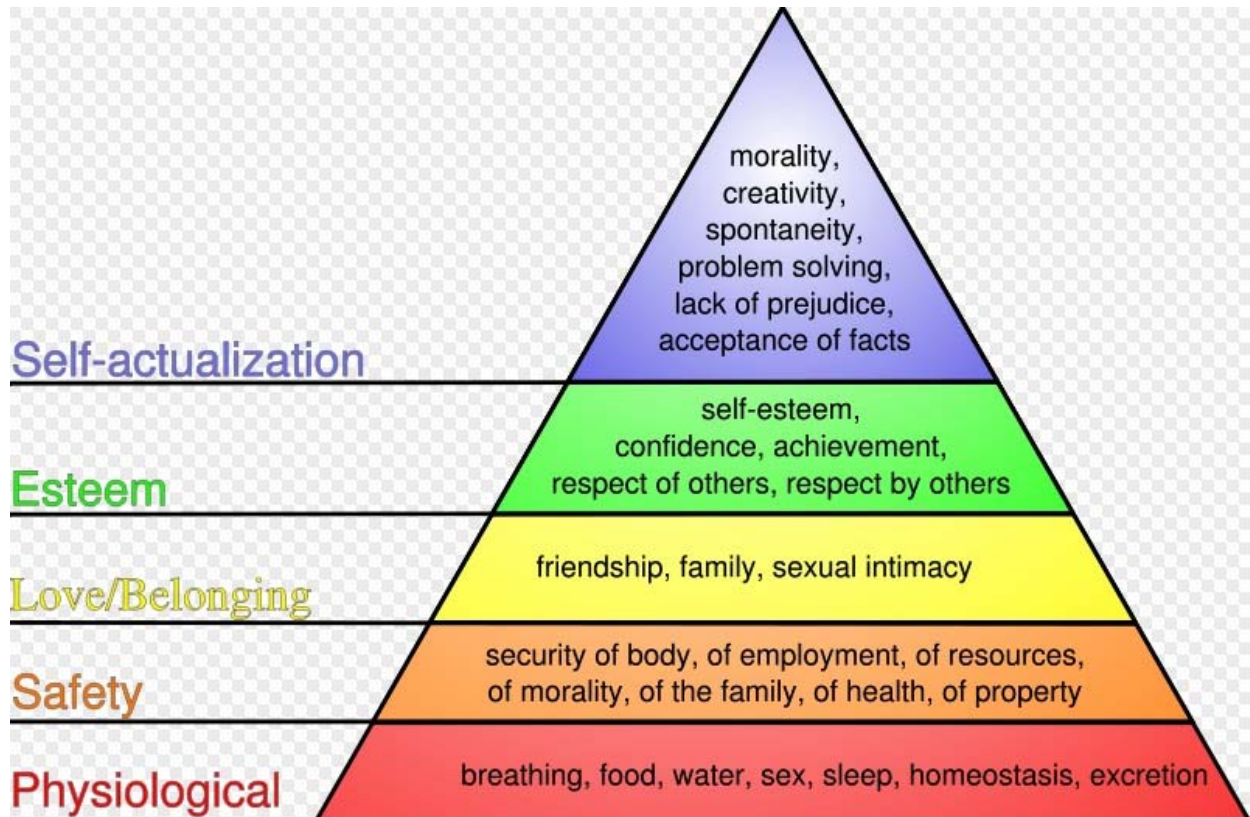


Figure 6: Maslow's Hierarchy of Needs (Source: Wikipedia)

Appendix C. Non-Sandus Basin Handouts

Contents:

- H-I.2.1: Instructions for Small Groups
- H-I.2.2: Negotiation Planning Chart
- H-1.2.3: Chart Definitions and Explanations
- H-IV.4: One-Minute Evaluation

Instructions for Small Group Tasks⁷⁴**HANDOUT (H-I.2.1)**

1. Using the Yellow Post-its, identify parties that may become involved in the discussion-negotiations over Sandus River Basin. These Parties may be individuals, organizations, or agencies in any of the jurisdictions/NGO community within the basin, or from anywhere else.

Post your results at the appropriate places on the walls. You should aim for at least 20 such parties.

2. Using the Blue Post-Its, identify “Issues” that are likely to be raised and/or addressed within and/or among these parties now and in the near future.

Post your results at the appropriate places on the walls. You should aim for at least 10 such issues.

3. Choose at least three key Parties and Issues, and identify at least five key Positions for each Party as it considers those issues.

Write those Positions on the Green Post-Its and post them at the appropriate places on the walls.

It may help to fill out the following type of form, expanded out for however many parties are identified:⁷⁵

⁷⁴ This exercise is based on one developed by CMI Washington/Carolina.

⁷⁵ Adapted from Barkai, 704-751.

Negotiation Planning Chart

HANDOUT (H-I.2.2)

Fill in the name of the party and then blocks with information you know. You will need three of these charts (one for each key party, as noted in the instructions).

Party: _____

People	Relationship	Issues	Positions	Interest	Options
Who:	Past:	1.	Estimated initial position:	1.	1.
Negotiation Styles:	Current:	2.	Estimated bottomline position:	2.	2.
				3.	3.
	Desired:	3.	Estimated BATNA:	4.	4.
				5.	5.
				6.	6.

Chart Definitions and Explanations

HANDOUT (H-I.2.3)

People: What are the past histories and present feelings of the people involved in this negotiation? What are their goals and objectives? Who is more powerful and what is the source of that power? What influences can they bring to bear on this negotiation? What do you know about their negotiating style?

Relationship: Do the negotiators or their constituents have any history together? What was that prior relationship like? How are they getting along now during the negotiation? Do they have a good relationship? Is it strained? Have they just met for the first time? Will the parties have a continuing relationship or will this be a "one-shot" negotiation? Even if the parties are not likely to work together in the future, will reputations be made in this negotiation that will follow the negotiators in the community?

Issues: The issues involved in the negotiation are the topics to be negotiated. They are also the questions and concerns that each party raises during the negotiation. It is usually very helpful to frame the issues as questions to be answered rather than statements that are made.

Positions: The positions in the negotiation are the solutions that each person has in mind. Positions are the "What" that the negotiators want. Many different positions are considered during a negotiation including, the opening position (demand), a fall back position, a bottom line, and a BATNA (Best Alternative to a Negotiated Agreement).

Interests: Interests are the basic needs that negotiators seek to be met in any agreement. If you know the interests, you know "why" the negotiators take the positions they do during the negotiations. Maslow's hierarchy of needs is helpful here.

Options: Options are the full range of possibilities on which the parties might conceivably reach agreement. Options are, or might be, put "on the table." An agreement is better if it is the best of many options, especially if it exploits all potential mutual gain in the situation.

BATNA: Alternatives are the walk-away possibilities that each party has *if an agreement is not reached*. In general, neither party should agree to something that is worse than its "**BATNA**" – its **B**est **A**lternative **t**o a **N**egotiated **A**greement – "away from the table".



One-Minute Evaluation

HANDOUT (H-IV.4)

Please answer the following questions. Your responses will help the instructor/facilitator to improve how he/she conducts future workshops.

1. What worked well during this course?

2. What aspects needed work?

3. What specific improvements would you make?

4. What grade (A-F) would you give the course? The instructor?

Many thanks!

Appendix D. Sandus Basin Exercise: Overview & Maps

Contents:

- Exercise Overview
- Map 1: Sandus River Basin
(With Jurisdiction Boundaries)
- Map 2: Sandus River Basin Mean Annual Precipitation
- Map 3: Sandus River Basin
(Without jurisdiction boundaries)
- Map 4: Sandus River Basin Basket of Benefits
(Without jurisdiction boundaries)
- Map 5: Sandus River Basin Basket of Benefits
(With jurisdiction boundaries)

SHARING WATER, SHARING BENEFITS

Stacy Polkowske
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Simulation Exercise

Introduction

This simulation exercise has been used in several contexts with adjustments to meet different circumstances. The following important notes apply to the scenario:

1. This scenario is entirely fictitious, as are the jurisdictions it portrays. Some attempt has been made, however, to mirror the major issues related to western waters in order for the exercise to be useful.
2. The data are approximate and should be used as a guideline only. Where there is insufficient data this should be intelligently made up.
3. Maps of the Sandus River Basin should be read with the scenario profiles. These can be found in Appendix G.

Regional Overview

The region of interest makes up the western portion of the continent. There are three major climate types that span across the region in a west-east direction. The high alpine desert in the east receives 5-10 inches of rainfall per year, the rainfall in the Central Valley ranges from 25-45 inches per year, while the coastal rainforest in the west experiences a steady 50-60 inches of rain per year. Much of the area experiences no precipitation every summer. The mountainous region in the east has large amounts of water storage in the form of glaciers and snow. The major geographic features of the region are:

- **Sandus River** - This large river drains 260,000 square miles, is ~1300 miles in length and empties into the Saltic Ocean. The Sandus River has an annual flow rate between 100,000 cubic-feet per second (cfs) to 270,000 cfs, depending on the water year and an average discharge of 129 million acre feet per year.
- **Central Valley** – The valley stretches in a northeast-southwest direction across the watershed. It receives abundant rainfall in the winter and experiences drought conditions in the summer. The fertile soils and excellent growing conditions have made the valley the agricultural hub of the region. The Kigala River, the largest tributary of the Sandus River, runs southwest through the valley.
- **Sandus Alps** – This mountain range, located in Sandus Republic, has historically had enormous water storage as snow (average of 410 inches of snowfall per year) and glaciers. The Alps are the primary headwaters of the Sandus River.

- **Century Aquifer** – A large aquifer spanning the western portion of the watershed and crosses the Skyland-Hamilton state border. It is an important source of irrigation and drinking water for the surrounding area. Due to over exploitation over the past 50 years, levels are declining. Several areas have recently been designated as “critical.”
- **Junction Lake** – A high use reservoir for water recreation and fishing, located at the confluence of the Coast Fork and Kigala rivers. The dam below Junction Lake produces hydro-electric power, water storage and flood control. There are fish ladders for migrating anadromous fish.
- **Skyland Lake** – This is a large reservoir located in the southeastern corner of Skyland State. The Kalayish Indian Reservation boundary bisects the lake. The Skyland Lake dam provides flood control, water storage and hydro-electric power for much of the region. There are no fish ladders at this dam.

Two species of anadromous fish, the Blue Finn and the Sparkle Finn, were listed under the Endangered Species Act (ESA) ten years ago. Migrating fish have passage up the Sandus River until their spawning grounds below Skyland Lake Dam. The Eagle River is a major Finn spawning area. Finn stocks also migrate up the Kigala River to their spawning grounds in the northern tributaries of the Central Valley. The Sandus River is navigable to vessels entering from the Saltic Ocean to the border of Sandus Republic, where a steep escarpment prohibits further passage.

The annual flow of the Sandus Basin as it reaches Port City is nearly eight times that of the Colorado River. Nearly 70% of the electricity in the region is produced by hydropower from the Sandus River Basin. Hydroelectric generation and flood control have been dominant priorities in the management of the river historically. In the past, irrigation, navigation and recreation have been able to take place within the context of meeting these needs. However, tremendous growth in the basin and the flow needs of the listed finn have resulted in greater uncertainty about traditional uses, as well as how to meet these needs and uses.

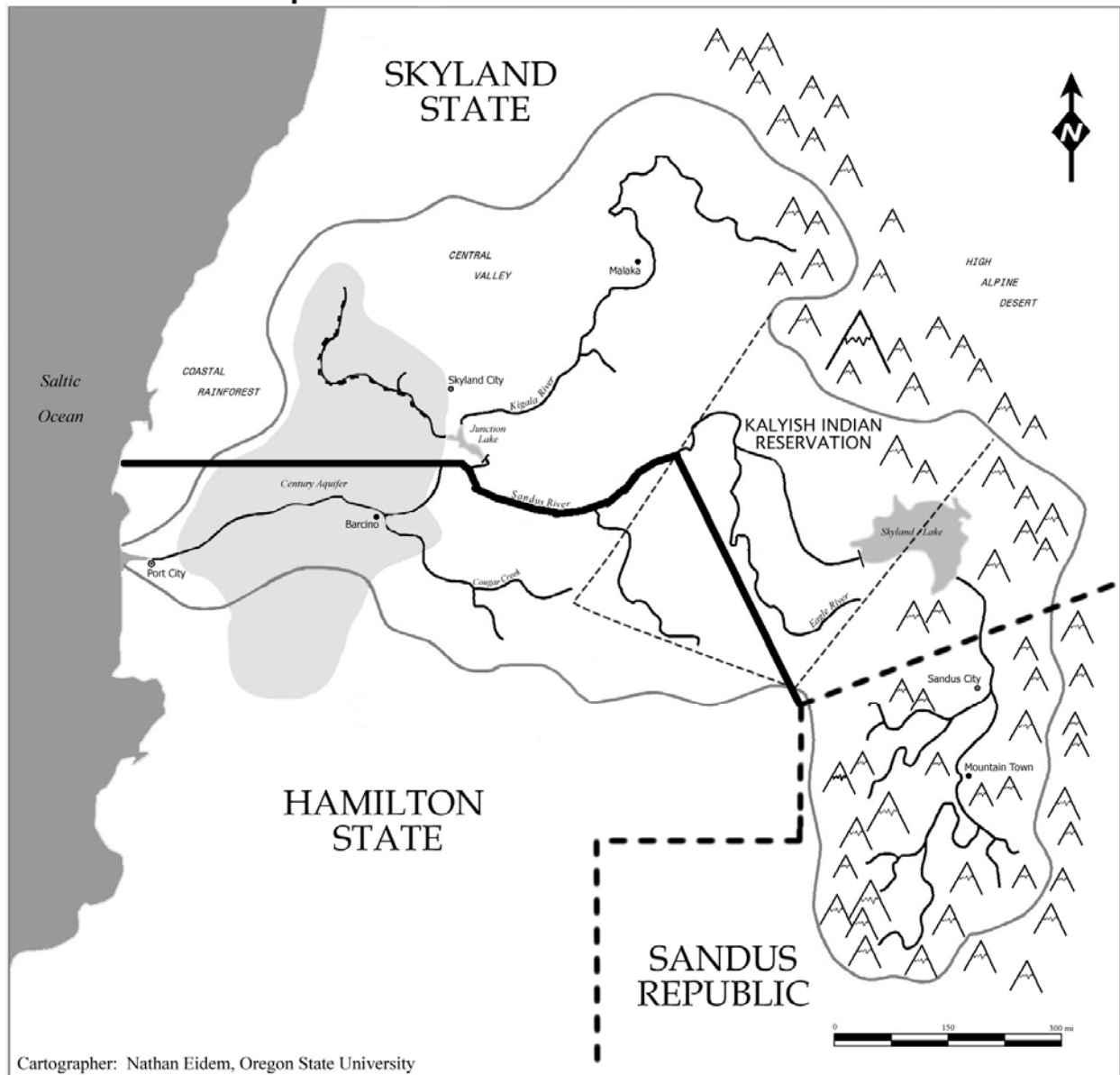
There is no scientific consensus on which environmental factors pose the greatest threat to finn, but scientific evidence does show that when extremely low flows or excessively high water temperatures occur, pronounced changes in their migratory behavior and lower survival rates can be expected. In proximity of the dams on the Sandus River, the river's velocity slows and much of its natural variability is smoothed out. Although water levels and velocity still fluctuate considerably on a daily, seasonal, and yearly basis, these effects of dams appear to confuse natural signals to the finn regarding migration and movement in the river system – either on their way out to the Saltic Ocean, or on their upriver return to tributaries in the uplands across the Basin. It is believed that this is effecting survival rates of finn.

Irrigation accounts for over 80 percent of water withdrawals in the Basin. There are areas and stretches of river that are much more affected by irrigation than others. Some smaller tributaries dry up in the late summer in parts of Skyland State where there are irrigation withdrawals. Some of these tributaries are spawning grounds for finn, which need flows year-round. Even on major

tributaries to the Sandus River, there are new needs. Oceana Federal Government has been purchasing and leasing water each year from Skyland irrigators in the last 3 years in order to augment flows for finn in the Kigala River.

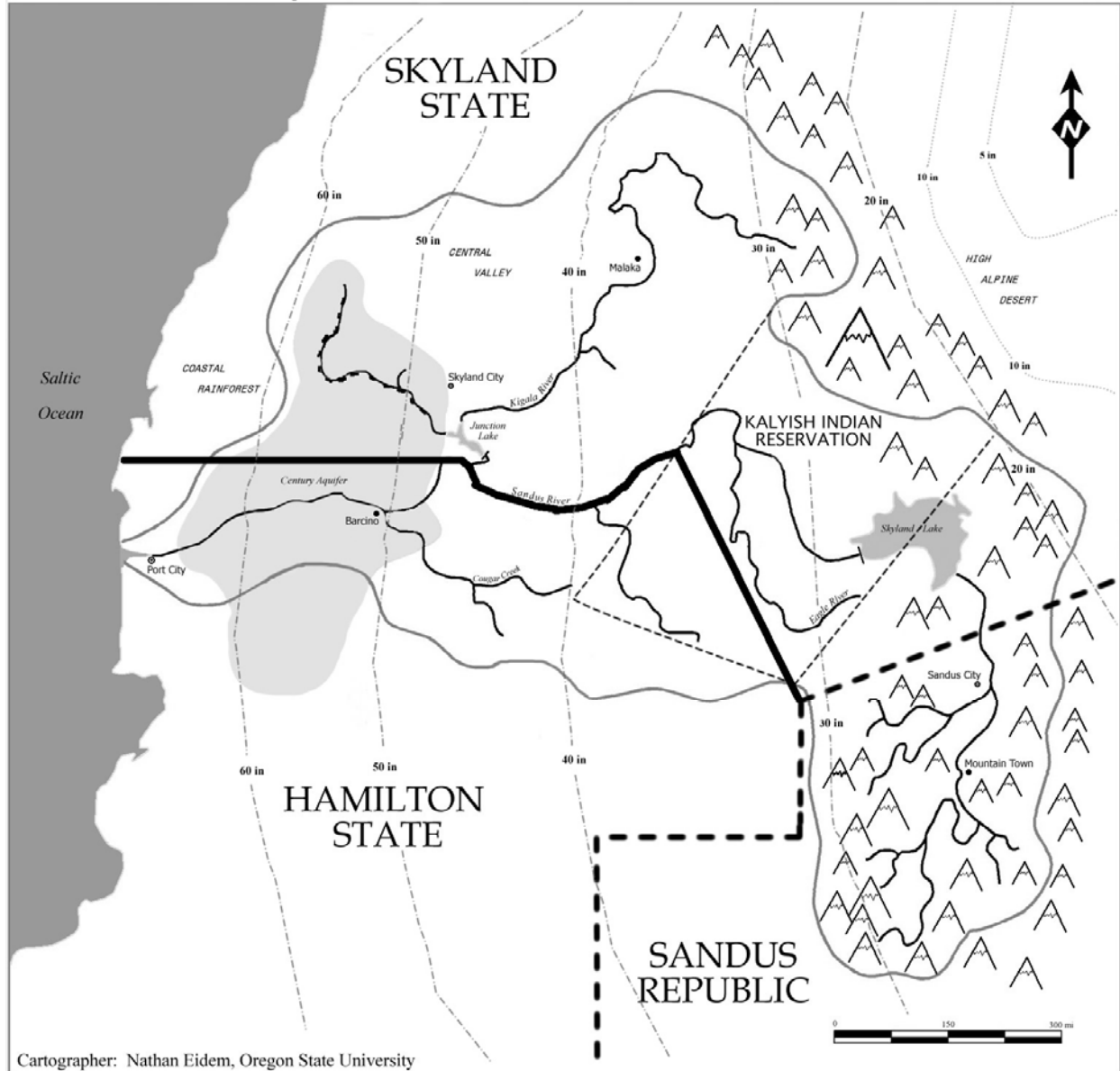
Hamilton State and Skyland State were recently advised by an independent science panel that if they want to issue additional permits for water to be diverted from the Sandus River for farm irrigation, it should do so only under the condition that withdrawals can be stopped if river flows become critically low for the endangered finn. Finn are at greater risk during periods of low flows and high water temperatures -- conditions that are most likely to occur during the summer months when demand for water by farmers is greatest.

Map of the Sandus River Basin



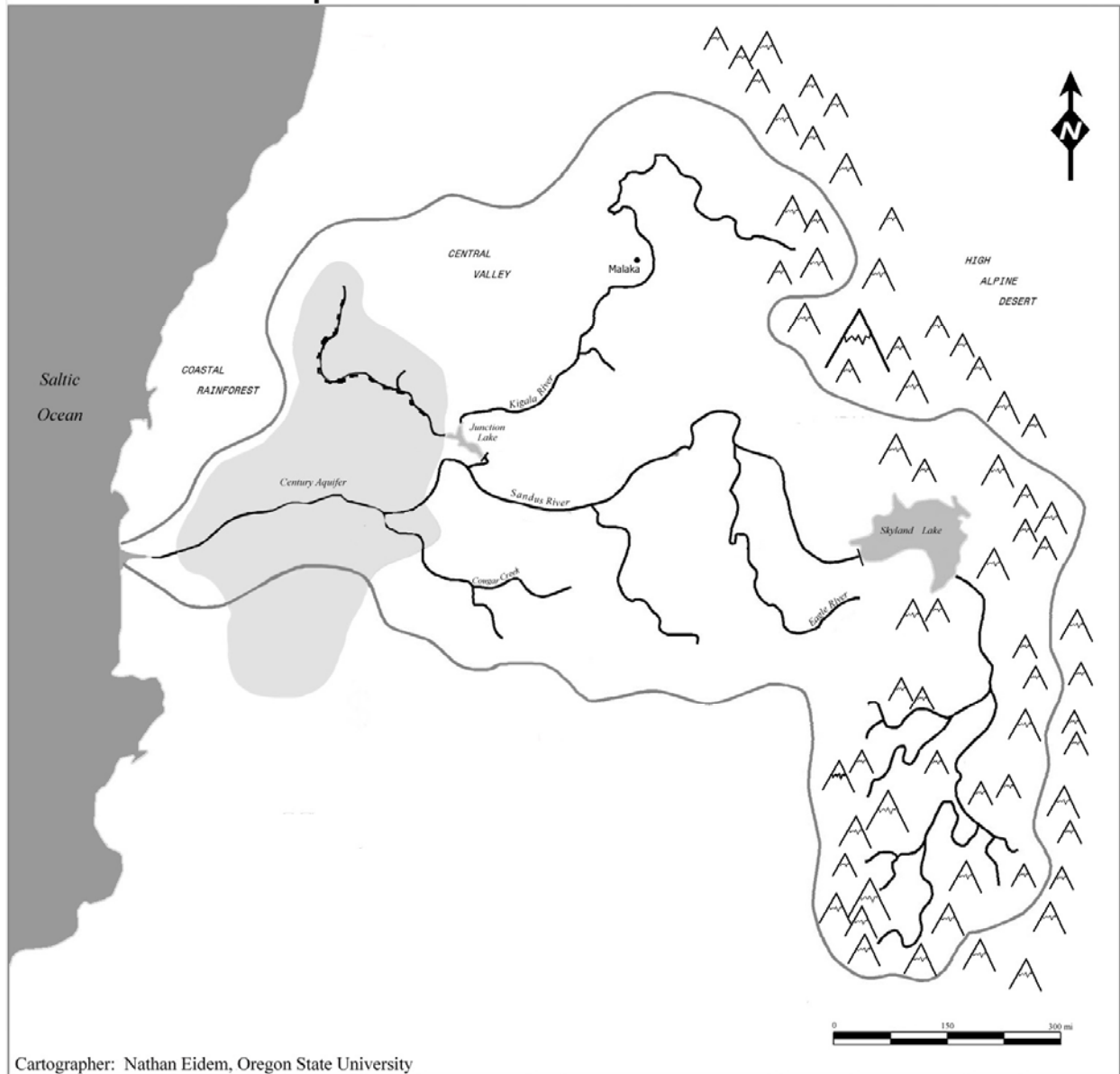
Map 1: Sandus River Basin with Jurisdiction Boundaries

Map of the Sandus River Basin



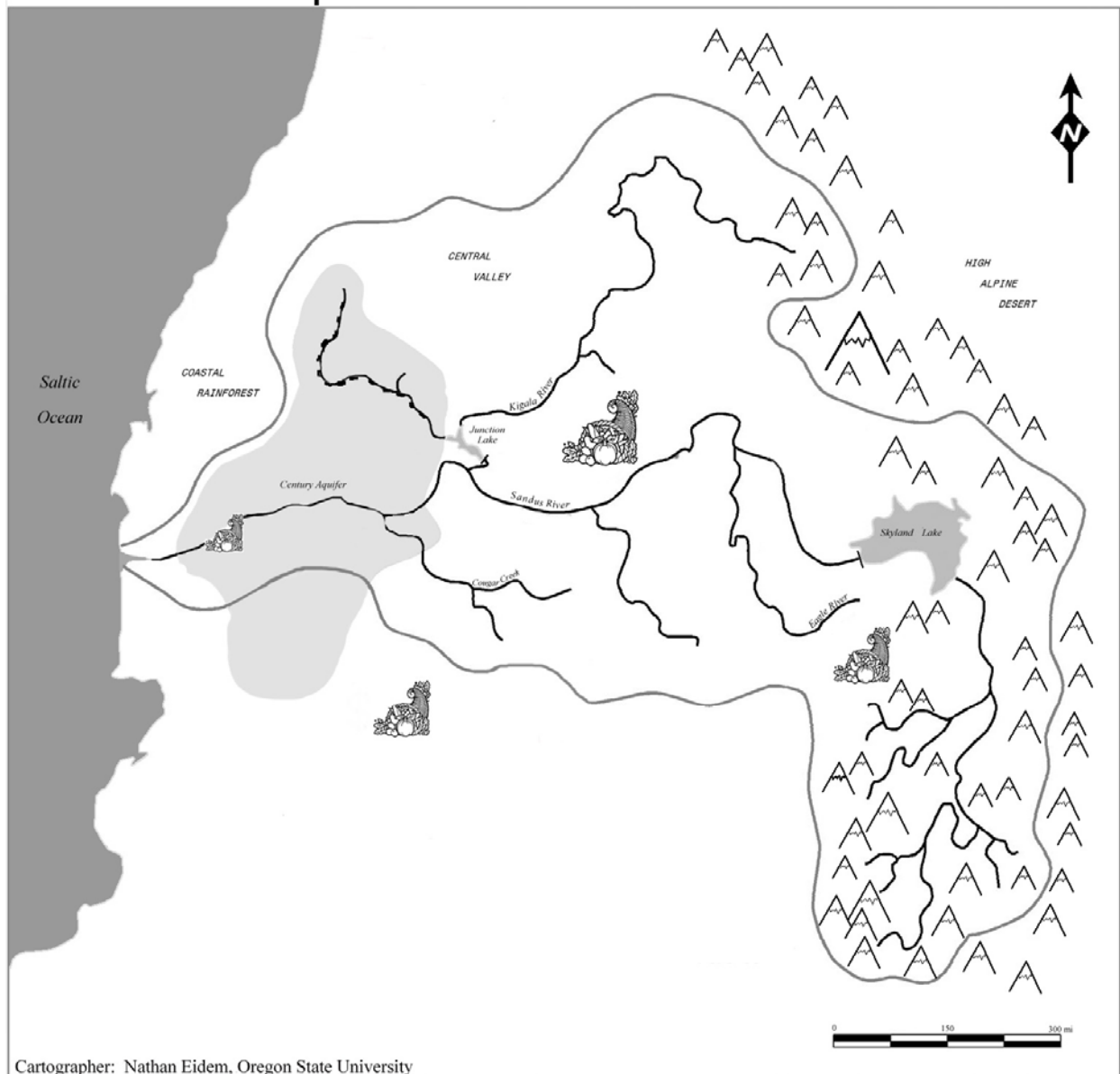
Map 2: Sandus River Basin Mean Annual Precipitation

Map of the Sandus River Basin



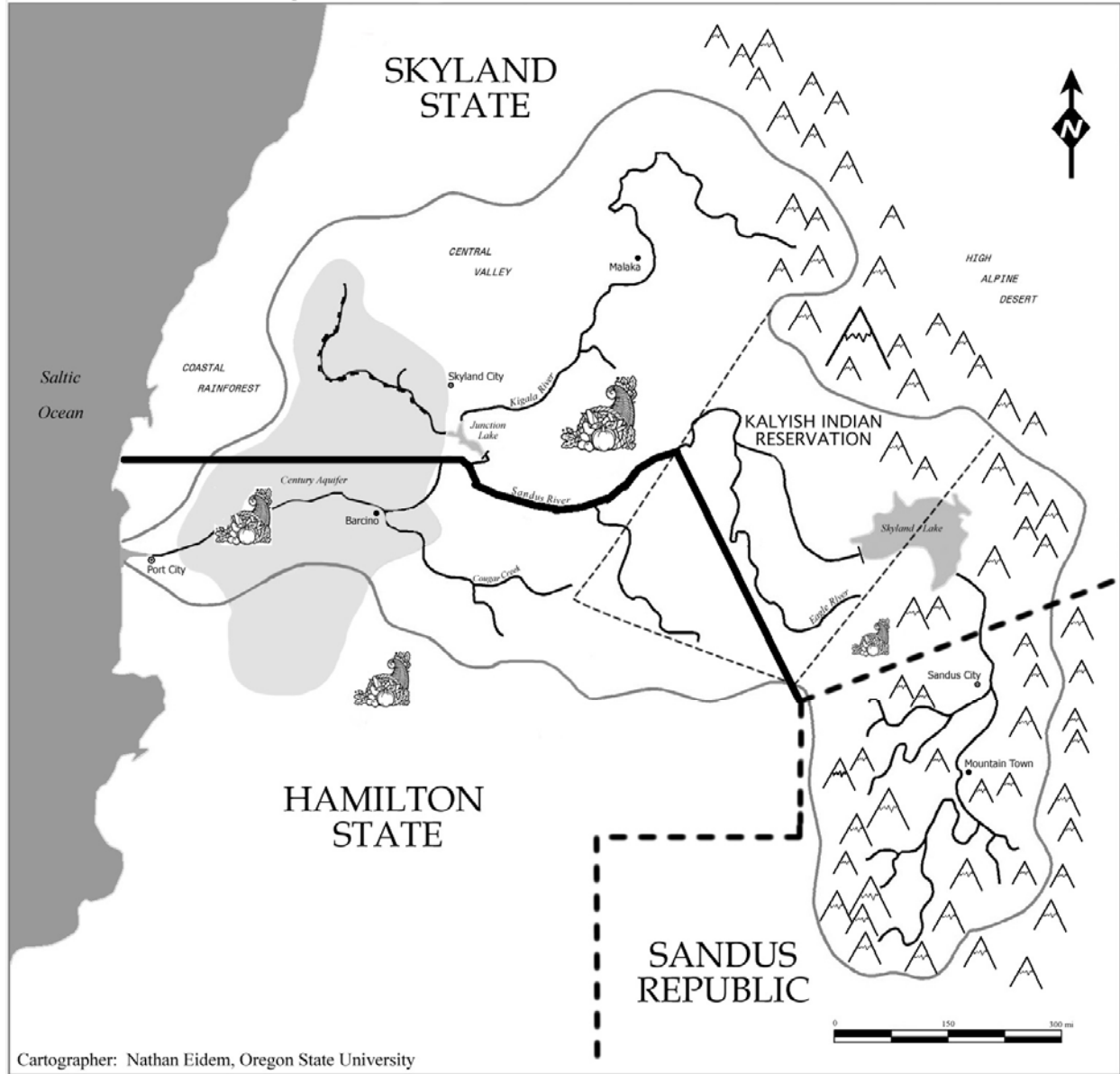
Map 3: Sandus River Basin (no jurisdiction boundaries)

Map of the Sandus River Basin



**Map 4: Sandus River Basin with Baskets of Benefits
(Without jurisdiction boundaries)**

Map of the Sandus River Basin



**Map 5: Sandus River Basin with Baskets of Benefits
(with jurisdiction boundaries)**