

Resolving Natural Resource Disputes: A Historical, Analytical, and Prescriptive Framework

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When newcomers first visit the upper Klamath Basin, they are most often struck by its apparent emptiness—a sprawling lake rimmed by high escarpments, few buildings or even fences, and a highway that runs arrow-straight to the horizon. This first impression has some merit. Upper Klamath Lake has the largest surface area of any lake in Oregon, varying seasonally from 60,000 to 90,000 acres. The upper basin is part of a watershed that covers about 16,000 square miles, an area larger than Massachusetts and New Jersey combined. It stretches from the high desert northeast of Crater Lake National Park in Oregon to the Pacific Ocean just north of Redwood National Park in northern California. Beyond a scattering of small towns, humans are not a prominent feature of the landscape—rural population densities average less than five persons per square mile.

*This article is adapted from the authors' recent book *The Western Confluence: A Guide to Governing Natural Resources* (Island Press, 2004). McKinney is the director of the Public Policy Research Institute at The University of Montana. Harmon is a senior associate at the institute and a free-lance writer.*

The people who do live here, however, see a relatively crowded landscape, one rich in resources—water, arable land, fish, timber, and hydro-power—and cluttered with competing demands for those resources, entangled laws, and cultures (Old West vs. New West, commodity production vs. conservation, and non-tribal vs. tribal) in conflict. Competition is perhaps fiercest for the basin's water supply—a limited resource stretched to meet a diversifying and growing demand.

As with most lakes in the basin, Upper Klamath Lake has shrunk about 30 percent since the late 1800s due to diking and draining to create more arable land. Wetlands in the basin are now 20 percent of their historical size. Through a network of headgates, canals, and ditches, the U.S. Bureau of Reclamation (USBR) manages the Klamath Project in the upper basin, providing irrigation water to about 1,400 farms. Annual on-farm crop revenues exceed \$100 million.

Many smaller lakes and reservoirs are scattered across Klamath county in Oregon and Modoc and Siskiyou counties in northern California. Together, these waters are the lifeblood of the basin's economy and environment, sustaining nearly 150,000 people, 540,000 acres of irrigated land, hydroelectric power generation, a complex of six

national wildlife refuges, the largest seasonal gathering of bald eagles in the lower 48 states, more than 80 percent of the seasonal habitat for Pacific Flyway waterfowl, and four fish species listed as threatened or endangered under the Endangered Species Act.

Even with the dams and natural lakes and wetlands, the basin has little capacity to store surplus water in wet years for later use. The water that comes in is used, evaporates, or flows out. There is little margin for drought, and great potential for conflict among those who claim a stake in Klamath waters.

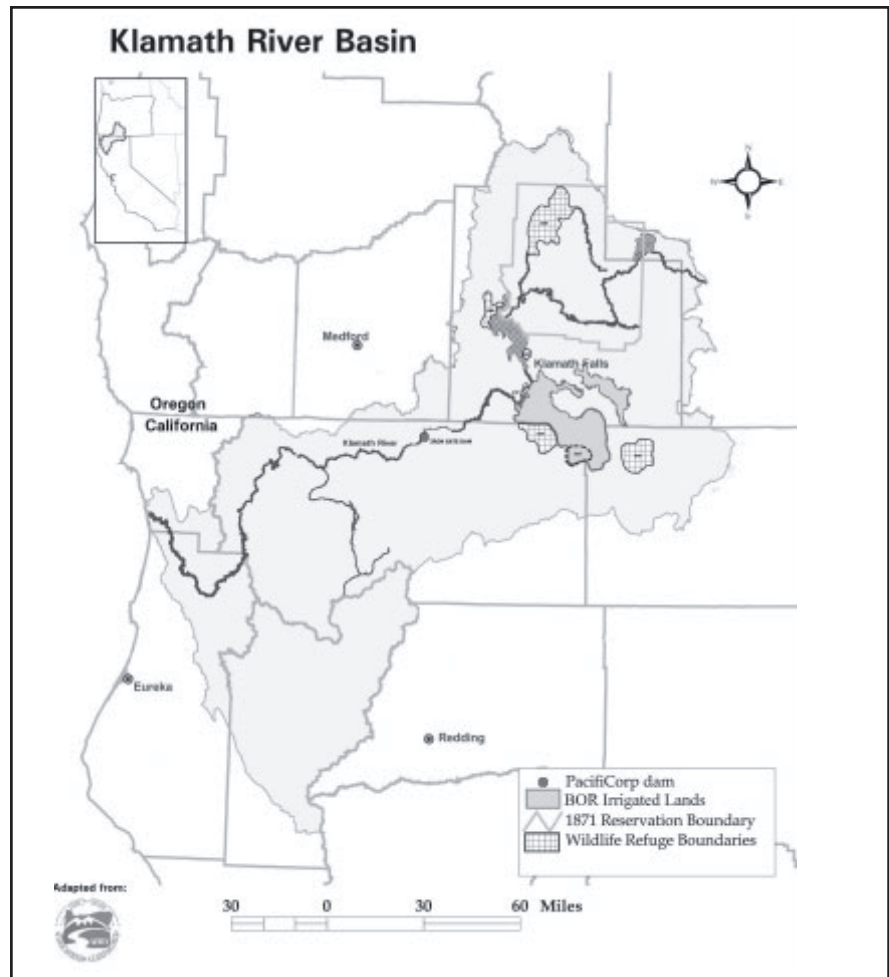
A Collision of Interests

The Klamath Tribes—the Klamath, Modoc, and Yahooskin—say the Creator placed them in the upper basin when the world was first being populated. Anthropologists estimate the Klamath people have lived here for at least 14,000 years. Either way, say the tribes, they were the basin's first human inhabitants, and their continuous presence testifies to the success of their relationship with the land, waters, and other resources of the basin.

For generations, the Klamath people sustained themselves on wild foods in the basin, surviving winters on reserves stored from the previous fall. Those re-

serves dwindled toward spring, and the spawning runs of the c'wam (TCH-wam) or Lost River sucker and qapdo (KUP-doh) or shortnose sucker every March were celebrated—as they still are today—as a sacred gift from the Creator, a bounty of food in a season of need. For most of the 20th century, the suckers were a popular and important food fish for native and non-tribal people alike.

In an 1864 treaty, the tribes ceded 20 million acres (an area the size of Maine) to the U.S. government, reserving a tribal homeland of 2 million acres and the right to continue to fish, hunt, trap, and gather food. For the next 90 years, the tribes prospered alongside non-tribal newcomers through a commercial fishery based in part on suckers, ranching, freight hauling, and sustained-yield logging of the largest remaining stand of ponderosa pine in the West. By 1950, the Klamath Tribes were one of the most economically successful in the nation. Then in 1954, under a misguided policy to assimilate tribes into mainstream society, Congress dissolved the Klamath Tribes and paid individuals for their shares of the remaining tribal lands, which then became national forest and wildlife refuge. Despite its severe terms, the Termination Act protected tribal water rights, asserting that “nothing in this [Act] shall abrogate any water rights of the tribe and its members.” Nevertheless, the Klamath, Modoc, and Yahooskin fell into poverty, and outsiders contested tribal rights to fish, hunt, and use the basin’s waters. Late in the 20th century, an enlightened Congress reversed its stance on assimilation policies and restored federal recognition to the Klamath Tribes. Although the Klamath Restoration Act of 1986 did not return any tribal lands, it affirmed once again the tribes’ water rights. Twice during the drought in 2001, irrigators in the Klamath Project went to court challenging the U.S. Department of the Interior’s legal au-



thority to reduce the project’s water allocation for the sake of tribal c’wam and qapdo fisheries and other endangered species. In both cases, federal courts ruled that tribal rights were senior and held precedence over any rights claimed by the irrigators.

The earliest European claims on Klamath waters came from homesteaders, who began staking them in earnest not long after the Treaty of 1864. Completion of the Klamath Project in 1907 (the second-oldest USBR project in the country) ensured water for farmers attracted to the area by the government’s offer of free, recently reclaimed, irrigable land. After World War I, the government gave preference to veterans over other homestead applicants, awarding groups of homesteads in the basin five times between

1922 and 1937. The program continued after World War II with three lottery-style drawings awarding more than 200 homesteads between 1946 and 1949. To “prove up” and gain clear title, winners had to farm the land for five years. The farmers who succeeded relied on the dependable delivery of water from the Klamath Project and subsequent reclamation and irrigation projects.

While basin irrigators now work to protect their water right claims in the Oregon adjudication process, a few have considered selling out. Without assurances of water, they say, they cannot get buyer contracts for their crops, and they have worked too hard for too long to farm on speculation.

The farmers rely on the U.S. Bureau of Reclamation to manage the Klamath

waterworks for the benefit of irrigation. USBR was a newborn agency when it began building the Klamath Basin Project in 1905. Nearly 100 years later, its role in the basin has not substantially changed, though project management is vastly more complicated today because many more interests and agencies have a stake in or jurisdiction over resources within the project boundaries. Accordingly, USBR has tried to protect the water supply it manages for project irrigators, while accommodating, when feasible, fish and wildlife, tribal, hydropower, and other demands for water.

But the USBR often finds itself in conflict with another federal agency, the U.S. Fish and Wildlife Service, which manages the six Wildlife Refuges in the Klamath Basin. In 1908, shortly after the initial Klamath Reclamation Project was completed, President Theodore Roosevelt designated Lower Klamath Lake and surrounding marshes as the nation's first wildlife refuge for waterfowl. USBR continued to drain wetlands and open them to agricultural development and settlement. After a century of such development, less than 25 percent of the historic wetlands remain, much of it held in six National Wildlife Refuges: Lower Klamath, Tule Lake, and Clear Lake refuges in California; and Bear Valley, Upper Klamath, and Klamath Marsh refuges in southern Oregon. Most of these refuges rely on a complex system of ditches, gates, and other "plumbing" for their water supply, which in some cases comes primarily from irrigation return flows.

The mission of the National Wildlife Refuge System is "to administer a national network of land and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." Refuges in the Klamath Basin protect a variety of

habitats and serve as a migratory stop-over for about 80 percent of the Pacific Flyway waterfowl. Peak concentrations in the fall total more than 1 million birds. Agricultural and water programs in the basin are coordinated under an agreement between the U.S. Fish and Wildlife Service and USBR. The U.S. Fish and Wildlife Service also is the federal agency responsible for listing species under the Endangered Species Act.

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According to the Klamath Basin Wildlife Refuge office in Klamath Falls, managers currently are faced with three major concerns. First, the Klamath Basin has lost 80 percent of its original wetlands, a significant loss of habitat for a wide range of migratory and resident waterfowl, fish, and other species. Second, water quality in the basin has been degraded by agricultural and timber practices. And third, during drought years, water quan-

tity is insufficient to balance wildlife needs with basin agricultural demands. Some feel that water in the basin is simply over allocated—that there is not enough water to satisfy fish and wildlife needs and agricultural demand. Refuge managers are watching the ongoing water rights adjudication process in Oregon, with the refuges caught between senior rights for irrigation and a court-ordered priority to leave water in the system for fish protected under the Endangered Species Act. The adjudication process also must consider tribal water rights, which may gain legal seniority as the earliest water rights in the basin.

Drought Brings the Klamath to the Brink

Despite occasional dry years and intensifying discord among irrigators, the tribes, and wildlife management agencies, basin residents saw little incentive to engage in preemptive drought planning. In fact, after decades of antagonism, the different factions in the basin apparently preferred to plan through litigation, filing no fewer than 15 water-related lawsuits during the 1990s. The stage was set—awaiting a drier than usual year—for a major battle over water in the Klamath Basin.

From 1995 through 1998, the basin enjoyed the wettest consecutive four years ever recorded. But in 2001, precipitation in the basin reached only 55 percent of average, and April snowpack (the most critical indicator of total local snow accumulation) was a mere 21 percent of normal. Spring runoff never came, and Upper Klamath Lake began to shrink. On March 27, 2001, Governor Kitzhaber declared a state of drought emergency in Klamath county. He requested a coordinated response from state and federal agencies and urged all interests in the basin work cooperatively to "share the shortage," seeking to balance the demands of the

basin's irrigators, wildlife refuges, fish protected under the Endangered Species Act, and tribal water rights. Unfortunately, the rules in place for allocating resources did not encourage such sharing.

That same month, the U.S. Fish and Wildlife Service (USFWS) released its biological opinion on shortnose and Lost River suckers, endangered fish native to Upper Klamath Lake. To help sucker populations recover, the USFWS said, USBR would have to increase Upper Klamath Lake levels above the previous year. The National Marine Fisheries Service then recommended in its own biological opinion that USBR spill more lake water to increase flows in the lower Klamath River to protect habitat for threatened coho salmon. As the drought worsened, the two wildlife agencies told USBR to stop all water deliveries to basin irrigators and wildlife refuges.

Farmers also demanded their allocations. When a federal judge ruled against them, farmers drove out to the ditches and forced open headgates. They also lobbied decision makers at every level, from county officials and local state legislators all the way up to President Bush. They circulated a petition asking government officials to allow full delivery of water for irrigation, cede the Klamath Project to the state of Oregon, and strip all funding for enforcement of the Endangered Species Act. In August 2001, a convoy of supporters from across the West rallied in front of the county courthouse in Klamath Falls to protest the ban on irrigation flows, and farmers told the story of their plight to newspaper and television reporters, hoping to garner widespread public support. Farmers and refuge managers hoped USBR would ignore the order. Then they asked local political leaders to appeal for a review of the biological reports. The appeal eventually reached Vice-President Dick Cheney, who asked 80 federal biologists to review the deci-

sion. Based on that review, and taking advantage of welcome spring rains, Cheney authorized the release of 75,000 acre-feet of water to farmers east of Klamath Falls. The majority of farmers within the federal Klamath Project (and the wildlife refuges), however, remained without water. After 94 years of receiving water from USBR ditches, some 200,000 acres of cropland were doomed to go dry.

The farmers refused to accept the decision. They filed suit in federal court against the three agencies, claiming that shutting off their water was a

The [water allocation] dispute is about the strategies we use to govern natural resources—in this case, first in time, first in right, scientific management, and the public trust doctrine.

breach of the USBR Project trust agreement. The judge upheld the agencies' decision, however, and on April 4, 2001, ruled that USBR would violate the Endangered Species Act if it delivered any additional water.

Angry farmers organized protests on the streets of Klamath Falls, denouncing the suckers as trash fish and calling for repeal of the Endangered Species Act. Then on July 4, 2001, protesters forced open irrigation headgates. USBR responded by posting armed federal guards to keep the headgates closed, spending \$900,000 through the summer to enforce the closure. Also in July, three local men were arrested and charged with felony intimidation after they drove through a

small tribal town yelling "Sucker lovers come out and fight!" and blasting signs and buildings with a shotgun, at one point asking a group of children if they were Indians and then shooting over their heads. In August, a convoy of more than 100 trucks from around the West rolled into Klamath Falls for a rally in front of the county courthouse to show support for area farmers.

Also in August, a conservation group filed suit to force USBR to deliver water to a wildlife refuge to sustain waterfowl migration, a significant food source for bald eagles. The responsible federal agencies met in Sacramento to develop long-range plans for improving water management in the Klamath Basin. At the same time, a federal judge in Eugene, Oregon, mediated a dialogue among farmers, salmon fishermen, conservationists, and government agencies to seek mutually satisfying solutions. An outgrowth of an ongoing dispute resolution effort coordinated by the Oregon Department of Water Resources, parties were ordered by federal court to engage in the mediation in response to a lawsuit brought by Klamath Basin irrigation districts against USBR. After the mediation failed, the original dispute resolution working group resumed its monthly meetings but has yet to produce any solutions. Despite exploring many avenues for resolving the problem, the irrigation headgates remained closed as the drought continued through the summer. Economic losses in the basin were estimated at over \$250 million.

In early 2002, USBR released its proposed 10-year operations plan for the Klamath Project and an assessment of the plan's impacts on fish and wildlife in the basin. Just three months later, the National Marine Fisheries Service and USFWS published their separate biological opinions, concluding that USBR's proposed operations would jeopardize the coho and sucker populations and "result in an increased risk to the continued existence" of these

threatened and endangered species. USBR immediately agreed to comply with the wildlife agencies' recommendations, but also criticized their research and questioned the validity of USFWS and Marine Fisheries Service data and conclusions. The USBR Regional Director fired off memoranda to both wildlife agencies citing a report on the Klamath situation drafted by the National Research Council (NRC). "We believe that the NRC Report," he wrote, "which has received extensive peer review through an established process in the science community, represents the best available science."

During the 2002 irrigation season, USBR delivered the full allocation of water to basin irrigators, reducing flows in the Klamath River. To address concerns about suckers and salmon, USBR worked with project irrigators to set aside an additional 20,000 acre-feet of water in USBR's water bank. In cooperation with basin tribes, this water was managed over the summer to provide flows intended to protect coho salmon populations. But in September, California state biologists discovered more than 33,000 dead salmon and steelhead in the lower Klamath River. As of this writing, USFWS and the Marine Fisheries Service deny that the decision to send water through irrigation canals rather than down the river was responsible for the death of the fish, but they still are investigating the fish kill. Many fisheries advocates, however, blame USBR's operation of the Klamath Project. In January 2002, the California Department of Fish and Game submitted a report to the federal government claiming that low flows in the Klamath River trapped salmon and exposed them to disease. It emphasizes that there is a substantial risk for future fish kills in the river.

Understanding Conflict in the Klamath

On the surface, much of the conflict

in the Klamath centers on water, intensifying in dry years. But to see the Klamath basin conflict solely as a "water war" seriously understates the nature and scope of the dispute. In fact, the conflict in this situation stems from four forces that shape nearly every western resource dispute:

(1) Competing demands for a limited resource. Everyone wants a share of the water, but in dry years there is not enough to go around. Some say the Klamath basin has been over-allocated—we have given rights to more water than exists. The same holds true in many places throughout the West.

(2) Confusion and conflicting interpretations regarding complex information. The hydrology and ecology of the Klamath basin are complex, intertwined systems, and even the experts disagree in their interpretations of studies and information. Perhaps the clearest example of this is the dispute over how much water is needed to sustain the various fisheries in the basin—each agency's biologists favor their own data, draw their own conclusions, and distrust the others' interpretations.

(3) Overlapping decision-making authority among government agencies with often contradictory missions and legal mandates. At least three federal agencies have jurisdiction over water use in the Klamath. USBR is legally bound to support project farms and agriculture. The National Marine Fisheries Service must protect the salmon that spawn in the lower river. And USFWS juggles internally conflicting mandates—one arm dedicated to managing the upper basin wildlife refuges, and another arm protecting endangered species, including downstream fish that sometimes need the water being held for other species in the refuges.

(4) The confluence of often incompatible strategies, ones deeply embedded in the history and cultures of the West, for resolving natural resource disputes. In one piece of the Klamath situation, the dispute between irriga-

tors and fishery advocates may center on who gets water, but it also pits 100 year-old water rights against scientific expertise, and a broader sense of the public good. In short, this dispute is about the strategies we use to govern natural resources—in this case, first in time, first in right, scientific management, and the public trust doctrine.

Further crisis in the Klamath was forestalled when winter snowpack and overall precipitation returned to higher levels, but the 2001 drought refuses to fade in the memories of the Klamath Basin residents and resource managers who lived through it. The dispute continues—in contested claims in the ongoing Oregon water rights adjudication process, in debates over new scientific data, in media headlines, and between neighbors in the basin. To date, attempts to resolve the Klamath situation—relying on existing laws, scientific expertise, citizen petition, litigation, and even collaboration—have not comprehensively addressed the four issues described above.

Today, many of the diverse interests within the Klamath basin have set aside—at least for the moment—trying to resolve any particular dispute and are rebuilding relationships and a sense of trust and community. This process is more than a feel-good exercise. It recognizes that no one interest—and no single decision-making approach—can address the multiplicity of societal, legal, economic, and environmental demands being placed on the system. To at once achieve livable communities, vibrant economies, and a healthy landscape, the diversity of interests realize they must work together through public processes that are inclusive, informed, and deliberative.

The Western Confluence

The Klamath Basin situation is a dramatic illustration of the type of disputes common throughout the West at the beginning of the 21st century. A

quick scan of any local newspaper or one of the West's regional news media, such as *High County News* or *Headwaters News*, provides a bird's-eye view of an endless parade of disputes similar in tone to the Klamath debate. Despite the variety of natural resource issues, and the vastness of the West, these disputes tend to share a number of common characteristics as explained above and summarized in Table 1.

Table 1: Common Characteristics of Western Resource Disputes

Multiple Parties

- Clash of values
- Competing interests
- Complicated relationships
- Varying types and levels of power

Complex Information

- Lack of information
- Misinformation
- Different views on what information are relevant
- Different procedures to collect and assess data
- Different interpretations of data
- Different levels of comfort with risk and uncertainty

A Briar Path of Policies and Institutions

- Multiple jurisdictions
- Competing missions and mandates
- Lack of meaningful public participation
- Multiple opportunities for appeal
- A fundamental question of who should decide

This framework provides one way to analyze western resource disputes, identify the source of disagreements, and understand the behavior of the disputing parties. It helps to explain the chronic nature of disputes, their durability, and suggests what needs to change in order to arrive at more sustainable solutions.

The Confluence of Strategies—An Historical and Analytical Framework

To cope with this stream of disputes, westerners have developed a number of strategies over the years. Table 2 suggests that, during the past 150 years, four dominant models have emerged for resolving western resource disputes: (1) privatize natural resources and allow the market to resolve disputes over competing uses; (2) delegate decisions to scientific and technical experts; (3) provide multiple opportunities for citizens to participate in decisions and resolve disputes; and (4) devolve the authority for decision-making and dispute

resolution from one level to another. In most cases, more than one strategy has emerged within each model.

The West's hardscrabble landscape has taught us to never throw anything away, so the old strategies were never retired—each new strategy was simply

added to the rest. Most of these strategies are now deeply embedded in western policies and institutions, and all of them are still in play, providing various mechanisms for public decision-making and dispute resolution. To one degree or another, each also either encourages or restricts citizen participation in the decision-making process. In short, the various strategies that have emerged over the last 150 years offer different—sometimes competing—approaches to governance and who decides how western resources should be used.

Despite this apparent wealth of ways to resolve conflict, the West is still locked in a tug of war over natural resource issues. In fact, the problem-solving strategies have themselves become a source of conflict. When irrigators and fisheries advocates fight over water, for example, they also pit the doctrine of “first in time, first in right” against the “best available science.” If they disagree over whether the water should stay in the stream or be sprayed on the crops, they also cannot agree on which method to use to resolve the dispute.

To effectively resolve disputes over

Table 2: The Evolution of Strategies to Resolve Western Resource Disputes

| Model | Date | Strategy |
|---------------|--------------|--|
| Privatization | 1855 | First in time, first in right |
| | 1980s | Free Market Environmentalism |
| Delegation | 1900 | Scientific Expertise |
| Participation | 1900 | Citizen (Ballot) Initiatives |
| | 1969 | Public Participation |
| | 1970 | Public Interest Litigation |
| Devolution | 1973 | Negotiation, Mediation, and Consensus Building |
| | 1979 | Sagebrush Rebellion |
| | 1990 | Citizen-driven Collaboration |
| | 1991 | Country Supremacy Movement |
| Confluence | 21st century | All of the Above |

the West's natural resources, we must first understand the array of available strategies, how they evolved over the last 150 years, and how they continue to shape the legal, institutional, and cultural fabric of natural resource decision making. In the course of western settlement and development, each strategy emerged in response to the shortcomings of the preceding approaches to decision-making and dispute resolution, and incorporated the best ideas at the time. While each strategy began at a different time and place in the history of western resource policy, they have braided together at the beginning of the 21st century, creating a roiling, often turbid confluence of strategies. This metaphor of "confluence" can help us understand the interaction of the dominant strategies available to resolve natural resource disputes in the West. Imagine tracing a river to its source—to know it in all its complexity—by exploring each of its tributaries to their many different beginnings.

A Confluence of Interests— A Prescriptive Framework

The confluence analogy helps us understand the past and present, but also gives us a vision for the future. Our basic proposition and prescriptive framework is that the best way to sustain communities and landscapes in the West—that is, to promote livable communities, vibrant economies, and healthy landscapes—is to create forums where people with diverse viewpoints or interests can work together on common problems. As a dispute resolution strategy, such a process might take the form of negotiation, collaboration, or consensus building.

Regardless of the label, or the particular procedures and tactics used, interest-based strategies are more effective when they are inclusive, informed,

and deliberative. Inclusive participation includes making an effort to meaningfully engage all viewpoints and interests, including unaffiliated citizens and national interests. It also suggests that participants are empowered by the presumption that their input and advice will be considered by the decision makers and will influence the outcome. An informed process is one where there is an equal opportunity to share views

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and information. The process fosters mutual learning, common understanding, and consideration of a variety of options. It enables participants to jointly develop and rely on the best available information, regardless of the source. A deliberative dialogue occurs when people listen to each other, consider the rationale or reason for competing viewpoints (which is to say, the interests that underlie the positions), and seek solutions that integrate as many interests as possible. Such pro-

cesses hold the most promise for a livable, sustainable West.

The validity of this proposition and prescriptive framework is a matter of historic record. Interest-based problem solving represents the most recent response to the limitations of all the other decision-making and dispute resolution strategies that have emerged during the past 150 years. While it is not a panacea, it does provide a vision for improving the other strategies and charting new ways to engage citizens and leaders in the process of shaping public policy to sustain the communities and landscapes of the West. Integrating interests also tends to be less costly than determining who is right, which in turn is less costly than determining who is more powerful. Integrating interests is not always better than focusing on rights and power, but it does tend to result in greater satisfaction with outcomes, less recurrence of disputes, less strain on relationships, and lower transaction costs. To paraphrase Aldo Leopold's land ethic, interest-based approaches to governing natural resources are an historical imperative and strategic advantage.

Assuming that the different approaches to decision-making and dispute resolution will continue to be around for the foreseeable future, the values of interest-based problem solving can be integrated into the various dispute resolution strategies. Just as dispute resolution strategies must be tailored to the situation, so to must efforts to integrate interest-based problem solving. No single model of governance is likely to effectively resolve the myriad of natural resource disputes in the West. Over time, through a process of experimentation and learning, the best ideas and approaches will emerge, and the people who engage in this process will jointly develop the theory and practice of adaptive governance.