

A Policy Assessment of the 2001 Klamath Reclamation Project Water Allocation Decisions

George Woodward and Jeff Romm

Prior to 2001, the Bureau of Reclamation (BOR) had provided water first and without fail to farmers for almost a century, insulating Klamath Reclamation Project growers from climatic variability, competing federal commitments, and the effects on others of agricultural water diversions. In 2001, climatic, ecological, and institutional circumstances aligned to place greater emphasis on the needs of endangered species and, less directly but more fundamentally, on water regimes that sustain the treaty-assured natural resource basis of tribal livelihoods and traditions. In effect, federal law determined the allocation of water in the Upper Klamath Basin in 2001, a process that, in the absence of federal preemption,¹ is decided by state law.

The abruptness and magnitude of the resulting irrigation curtailment signified a major reordering of *de facto* priorities for water allocation in the Upper Klamath Basin. In the process, farmers, farmworkers, and farm communities suffered real and immediate losses unprecedented in prior applications of the Endangered Species Act (ESA). The loss of irrigation water immediately reduced productivity, jobs, income, the value of farm assets, community and regional economies and services, and family and social stability. It also raised questions about the acceptable level of private burden for satisfaction of a public purpose.

Although such real and abrupt losses were unprecedented under the ESA, they were not unprecedented in the Klamath Basin. As the forces of Euro-American settlement and economic formation spread into the Basin in the 1800s, Native American tribes experienced immediate and drastic economic and social decline resulting from several developments, including:

- Initiation of the reservation system and loss of ancestral lands in the 1850s
- Development of widespread irrigated agriculture under the Reclamation Act of 1902²
- Termination of the Klamath Reservation in 1954, despite recognized capacities of the Klamath Tribes to succeed within it³
- Diversion of Trinity River waters, the main tributary of the Klamath River, to the Central Valley of California several decades later

¹The Endangered Species Act and federal Indian water rights are pertinent examples of forces behind federal preemption in the Klamath Basin.

²See Chapter 3 (“Legal Aspects”) for discussion of the Reclamation Act.

³During the period of the termination policy in the 1950s, almost 1.4 million acres were removed from tribal ownership by Congressional act. (See, for example, Prucha 1990.) Sixty-three percent of the total terminated acreage nationwide came from the Klamath Reservation, and more than 80 percent from the Klamath and Menominee reservations combined (Prucha 1984).

Over the course of 150 years, the Klamath, Hupa,⁴ Yurok, and Karuk tribes suffered massive declines in the natural resources on which they depended, despite federal treaty guarantees. In 2001, in the midst of a severe drought, irrigators faced a similarly drastic change, catalyzed by the ESA, despite almost a century of contractual assurance of water deliveries. Irrigation water contracts and tribal treaty guarantees collided within the legal framework of endangered species protection, which dominated both.

The 2001 irrigation curtailment fueled an ongoing national debate about the application of the ESA. In ESA conflicts elsewhere—the Central Valley and Delta of California, for example—the Department of the Interior⁵ developed elaborate alternatives to strict ESA compliance in order to reduce economic impacts and avert a political backlash against the law. In the Klamath Basin, in contrast, the long-simmering tensions around water allocation were left unattended as all sides sought relief in the courts rather than agreement with one another.

The cast of Klamath Basin interests is complex. At one level, it includes federal, state (California and Oregon), and tribal sovereignties. At another, it includes a range of federal agencies with apparently contradictory, or at least uncoordinated, missions and programs. At a third level are user groups representing the Basin’s farmers, environmentalists, fishers, tribes, and various regions. Within this complex setting and in a year of extreme drought, judicial enforcement of the ESA culminated in the abrupt and almost total cutoff of irrigation water on the Klamath Reclamation Project.⁶

In preparing this chapter, we began with two questions consistent with the intent of this report.

- Does the 2001 water allocation decision on the Klamath Reclamation Project change the framework of public policy?
- Does it stretch the policy envelope of acceptable events under the ESA, or is it consistent with the normal patterns of resolution for such issues?

We sought to answer these questions in several ways. We evaluated the decision in light of related judicial interpretations regarding tribal water rights, federal–state–tribal relations in water allocation, the Endangered Species Act, “takings” of private property for public purposes, and the specific qualities of these issues in the Klamath Basin. We then compared the institutional basis, i.e., the organized patterns of social relations, in the Klamath Basin with that of other river basins, to try to understand why problems that seem to have been solved elsewhere became a “train wreck” in the Klamath Basin.

As we proceeded, however, our question evolved from “What were the consequences?” toward an assessment of the lessons the situation provided about future opportunities. In other words:

- Why did this crisis happen?
- What changes are necessary to prevent a similar crisis from happening again?

These questions fed a growing sense of humility toward the complexity of the Klamath situation. In effect, the events of 2001 brought to a flashpoint historic tensions between federal, state, and tribal governments; competing federal missions; and strongly polarized interests of farm communities, tribes, environmentalists, and fishers—with the powerful water interests of California as a backdrop.

⁴Hupa refers to the people; Hoopa (a word invented by the federal government) refers to the reservation. We have chosen to use Hupa throughout this chapter except where Hoopa is part of a quotation.

⁵Many agencies (both state and federal) and several Cabinet-level departments respond to the challenges in the Bay-Delta.

⁶The water supply options available to Project farmers vary by location within the Project, with respect to Upper Klamath Lake, Gerber and Clear Lake reservoirs, and the availability of groundwater. Irrigation technology and crop type also affect the ability of farmers to respond to nondelivery of Project water. In 2001, farmers located in areas served by Gerber and Clear Lake reservoirs obtained about 70,000 acre-feet of water from the Project. Late in the season, approximately 75,000 additional acre-feet were released from Upper Klamath Lake to Project irrigators.

We are policy analysts, not lawyers, representatives, or administrators. Although we have strong working ties within the Klamath Basin, we are not residents of the Basin. What we can offer, at best, is one way to frame the situation, which may lead to greater understanding of its policy implications. Some may agree with our approach and findings; others will not. In both instances, however, we believe that understanding can increase. Our purpose is not to prescribe, but to support the kinds of debates and developments that will prevent similar crises for any of the Basin's residents in the future.

Our approach, we hope, is straightforward. We define three fundamental tiers of relationship in the Klamath Basin: intergovernmental, inter-agency, and among communities of interest. We then seek to understand the context and nature of relationships within and between these categories to see whether and why the outcomes of the 2001 water allocation decision pressed against the boundaries of "normal" and to explore ways in which better results might be achieved in the future.

This chapter has three sections. First, we review the legal context within which the decision occurred, approaching this formidable task not as legal scholars, but as policy analysts. Then, we review the institutional context of the Basin—the organized patterns of relationships among jurisdictions, agencies, and interest groups—through which the ESA achieved such unmoderated force when compared with its application elsewhere. Finally, we present for discussion various issues raised by the events of 2001 and suggestions for strengthening institutional relationships.

Legal context of the 2001 Klamath Project Operations Plan

The legal context of water allocation in the Klamath Basin involves various competing mandates and processes that as yet have had only judicial avenues for resolution. Of particular relevance for the 2001 Klamath Project Operations Plan (KPOP) are the following:

- Federal treaties with the Klamath Basin tribes, beginning in the 1850s
- Patterns of relative authority between state water law systems and federal water rights from the 1870s to the present
- Federal reclamation and energy laws (starting with the Reclamation Act of 1902)
- Federal environmental laws, including the Endangered Species Act (beginning with the National Environmental Policy Act of 1969 and its process requirements)

These families of law support distinctive agencies and modes of control that operate with virtual autonomy in the context of the Klamath Basin. Issues of sovereignty, economic opportunity, and environmental sustainability in the Basin continue to reside in the courts, without Executive vehicles for coordination at the federal level or in federal–state–tribal relations.

Tribal rights

Four federally recognized Indian tribes reside in the Klamath Basin. Three are in the Lower Basin in California. The Hupa Reservation is located at the juncture of the Trinity and Klamath rivers. The Yurok Reservation is west of the Hupa near the mouth of the Klamath River. The Karuk Reservation is upstream of the Hupa on the Klamath. The Klamath Tribes are located far upstream and several hundred miles away in Oregon, above the Klamath Reclamation Project. The Project straddles the California–Oregon border.

Three of these tribes have treaty-based rights.⁷ This means that their resource rights are defined by the timing and terms of the original treaties they possess as sovereigns. Treaty rights do not depend on the existence of reservations, but are tied to the tribal groups whose ancestors signed the treaties. When applied to water, they create a federal reserved right that is tied to the water needs of entitlements specified in the treaty (for example, the right to a hunting and fishing lifestyle). Another class of federal right, the implied reserved right, is attached to a tribe's reservation and is a right to water necessary to satisfy the purposes for which the reservation was created.⁸ Under prevailing judicial interpretation, the Klamath Basin tribes with treaty-based reserved water rights are entitled to sufficient water to sustain a moderate livelihood in the manner they have enjoyed—hunting, fishing, and foraging—“since time immemorial,” whether or not the tribes have a reservation.

The Upper Klamath Basin tribes

The Upper Basin tribes entered into a treaty with the United States in 1864. They relinquished aboriginal claim to about 12 million acres of land in exchange for a reservation of approximately 768,000 acres above Upper Klamath Lake.⁹ The treaty specifically protected the Indians' existing right to pursue their traditional culture and means of livelihood, while encouraging them to develop agriculture. Under prevailing judicial interpretation,¹⁰ the tribes possess a treaty-based reserved right for sufficient water to protect their culture and livelihood. This is not a grant of rights to the Indians, nor merely an implied right deriving from the purpose of the Klamath Reservation (as is the right to water for a reservation's agricultural purpose), but rather a reservation of rights already possessed.

In 1887, Congress passed the General Allotment Act, which changed the nature of land ownership within the Reservation. Instead of allowing only communal ownership, the Act also permitted individual ownership. Approximately

25 percent of the original Klamath Reservation went into individual Indian ownership, and many of these allotments passed into non-Indian hands.

The Klamath Reservation was terminated in 1954 under the Klamath Termination Act.¹¹ Before and after termination, the United States purchased most of the Reservation for inclusion in national forests and wildlife refuges. The balance was placed in a private trust for the remaining tribal members. In 1973, the United States condemned most of the remaining land held in trust, eliminating tribal title. The Klamath Tribes lost federal recognition at the same time, later to have it restored under the Klamath Restoration Act of 1986.¹²

This brief discussion begins to illuminate the complexity of relations among federal, state, and tribal sovereigns in the Klamath Basin. For example:

- Treaties between the U.S. and the tribes assure the protection of natural resources the tribes need to sustain their cultures and

⁷In *Parravano v. Masten*, 70 F.3d 539 (1995 U.S. App 9th), the court addressed the alleged distinction between rights created by treaty and those created by executive order. It found that “tribal rights derived from executive order are treated the same as treaty rights” and explicitly rejected the distinction. The Yurok and Hupa rights derive from executive orders in 1876 and 1891. The District Court determined that these executive orders and the 1988 Hoopa–Yurok Settlement Act, 25 U.S.C. § 1300i, vested the Hupa Valley and Yurok tribes with federally reserved fishing rights. The *Parravano* appellate court affirmed the District Court.

⁸*Winters*, 207 U.S. 564 (1908); *Arizona v. California*, 373 U.S. 546, 83 S.Ct. 1468, 10 L.Ed.2d [**23] 542 (1963); *United States v. New Mexico*, 438 U.S. 696 (1978)

⁹Treaty between the United States of America and the Klamath and Modoc tribes and Yahooskin Band of Snake Indians, October 14, 1864, 16 Stat. 707

¹⁰*U.S. v. Adair* (U.S. District Court 478 F. Supp. 336 (*Adair I*), on appeal 723 F.2d 1394 (*Adair II*), and most recently 2002 U.S. Dist. LEXIS 3397 (*Adair III*) for the Klamath, and *Parravano v. Masten* 70 F.3d 539 (1995 U.S. App 9th) for the Hupa and Yurok

¹¹Approximately 80 reservations were terminated during the era of the termination policy, although two of them—the Klamath and the Menominee—were considered at the time to have been very successful in economic and governance terms.

¹²Pub. L. No. 99-398, 100 Stat. 849

traditional livelihoods. These rights are tied to the tribe rather than to a piece of land, and they date to the origins of tribal occupation.

- Federal reserved water rights are tied to the purposes for which Congress reserves a piece of land from the public domain. An example is the right to use water for agricultural purposes on the former Klamath Reservation.
- Despite the prevalence of federal control of land and water rights in the West, actual water allocation among claimants generally is the prerogative of state law.¹³ Under both Oregon and California law, the priority of a claim depends, among other things, upon the date of initial use (and, for federal lands, upon the date of reservation from the public domain). California and Oregon apply additional considerations when adjudicating the equitable distribution of a stream's flow among various right holders.

***U.S. v. Adair* (1979, on appeal 1983, and continuing jurisdiction review 2002)**

In *U.S. v. Adair*, the federal government and the Klamath Tribes sought a District Court declaration that “since 1864 no one has been entitled to divert or appropriate water from the [Williamson] River, if the diversion or appropriation would threaten the Marsh and forests” on and adjacent to Upper Klamath Lake. The Williamson River is one of the upstream tributaries to Upper Klamath Lake. Ben Adair et al. (private landowners) and the State of Oregon were the defendants in this case. The questions raised in the case fell within three basic categories:

- Were water rights reserved for the use of Klamath Reservation lands in the 1864 treaty?
- Did such rights pass to the government and to private persons who subsequently took fee title to Reservation lands?

- What priorities should be accorded the water rights of each of the present owners and users of former Reservation land?¹⁴

The court did not decide any question concerning the quantification of water rights, leaving this matter for the Oregon adjudication process under state law (see Chapter 3, “Legal Aspects”). It found that the exclusive fishing and gathering rights secured by the 1864 treaty to the Indians were “not a grant of rights to the Indians, but a reservation of rights already possessed,”¹⁵ and that these rights survived the termination of the Reservation in 1954.¹⁶

Judge Solomon declared, “When, by treaty, the Government withdraws land from the public domain and reserves it for a federal purpose, the Government impliedly reserves appurtenant unappropriated water to the extent needed to fulfill the purposes of the reservation.”¹⁷ The Judge reasoned that the Indians were entitled to whatever water was necessary to maintain their hunting and fishing rights and that the priority date of the Indian water rights was “time immemorial.” This priority date establishes the Tribes as the senior right holders in the Upper Basin.¹⁸

¹³In *United States v. New Mexico*, 438 U.S. 696 (1978), the Supreme Court wrote that “... [where] Congress has expressly addressed the question of whether federal entities must abide by state water law, it has almost invariably deferred to the state law. See *California v. United States*, ante, at 653–670, 678–679. Where water is necessary to fulfill the very purposes for which a federal reservation was created, it is reasonable to conclude, even in the face of Congress’ express deference to state water law in other areas, that the United States intended to reserve the necessary water. Where water is only valuable for a secondary use of the reservation, however, there arises the contrary inference that Congress intended, consistent with its other views, that the United States would acquire water in the same manner as any other public or private appropriator.”

¹⁴In addition, the District Court explicitly addressed the question of federal jurisdiction in the determination of water rights. We discuss this topic in greater detail later in this chapter.

¹⁵Citing *United States v. Winans*, 198 U.S. 371, 25 S.Ct. 662, 49 L.Ed. 1089 (1905).

¹⁶Citing *Kimball v. Callahan*, 590 F.2d. 768 (9th Cir. 1979).

¹⁷Citing *Winters*, 207 U.S. 564 (1908); *Cappaert*, 426 U.S. 128, 138 (1976); *Arizona v. California*, 373 U.S. 546, 83 S.Ct. 1468, 10 L.Ed.2d [**23] 542 (1963); *United States v. Powers*, 305 U.S. 527, 59 S.Ct. 344, 83 L.Ed. 330 (1939).

¹⁸Note that some parties prefer a more narrow reading of *Adair* that confines the reserved water rights to the “litigation area.”

The *Adair* court established the basis for setting priorities among tribal and other federal water rights. Since *Winters* (1908), the Supreme Court has held that the reserved water for Indian reservations has priority relative to appropriations made under state law after the date of reservation.

The District Court explicitly addressed the question of whether federal or state courts are the appropriate forum for addressing matters related to federal or tribal water rights. In *Colorado River Water Conservation District v. United States* (1976),¹⁹ the Supreme Court found that the McCarran Amendment (1952)²⁰ allows concurrent state and federal jurisdiction over various aspects of water rights disputes. It also found that the state's jurisdiction extends to federal reserved water rights, including Indian water rights, because the McCarran Amendment expressed a "clear Federal policy" to avoid "piecemeal adjudication of water rights in a river system" where a comprehensive state system for adjudication of water rights is available.

In *Adair*, Judge Solomon found that it was appropriate and necessary for the federal court to determine the rights of the Indians under federal law, although the actual allocation of water among various right holders falls under state jurisdiction. The key distinction is between a federal court's capacity to determine what groups hold federal water rights (and the relative priorities of those rights) versus the jurisdiction of state courts over actual allocation of water among claimants.

The *Adair* court retained continuing jurisdiction²¹ in anticipation of the need for future supervision of the distribution of water consistent with the opinion.

Both sides appealed the *Adair* decision in what is known as *Adair II*. The State of Oregon and individual defendants argued that the District Court should have dismissed the federal suit and had erroneously awarded water rights to the Tribes and to the United States as the Tribes' successor, a process that should fall under the jurisdiction of state law. The United States and

the Tribes argued that the District Court erroneously awarded water rights to non-Indian successors of Indian landowners.

In 1983, the U.S. Court of Appeals affirmed the District Court's *Adair I* determinations, with one exception—the lower court's decision not to separately declare the federal government's water rights.²² The appellate court also interpreted the District Court's statement of the tribal entitlement to water as confirming the amount necessary to support the Tribes' hunting and

¹⁹424 U.S. 800, 96 S.Ct. 1236

²⁰In full, the Amendment states that:

(a) Consent is given to join the United States as a defendant in any suit (1) for the adjudication of rights to the use of water of a river system or other source, or (2) for the administration of such rights, where it appears that the United States is the owner of or is in the process of acquiring water rights by appropriation under State law, by purchase, by exchange, or otherwise, and the United States is a necessary party to such suit. The United States, when a party to any such suit, shall (1) be deemed to have waived any right to plead that the State laws are inapplicable or that the United States is not amenable thereto by reason of its sovereignty, and (2) shall be subject to the judgments, orders, and decrees of the court having jurisdiction, and may obtain review thereof, in the same manner and to the same extent as a private individual under like circumstances: Provided, That no judgment for costs shall be entered against the United States in any such suit.

(b) Summons or other process in any such suit shall be served upon the Attorney General or his designated representative.

(c) Nothing in this section shall be construed as authorizing the joinder of the United States in any suit or controversy in the Supreme Court of the United States involving the right of States to the use of the water of any interstate stream (43 U.S.C. § 666 (1976)).

²¹Jurisdiction was retained for a period of 5 years from the date of final judgment on appeal.

²²The appeals court modified the initial judgment to incorporate a declaration of the government's water rights. The court specified the federal government's appurtenant water rights as the same as other non-Indian successors and the quantity and priority of their reserved water rights as consistent with the purposes and dates of the reservation. The court declared that "actual quantification of the rights to the use of waters of the Williamson River and its tributaries within the litigation area will be left for judicial determination, consistent with the decree in this action, by the State of Oregon under the provisions of 43 U.S.C. § 666 [the McCarran Amendment]." The McCarran Amendment waives the United States' sovereign immunity for the limited purpose of allowing the government to be joined as a defendant in a state adjudication of water rights (see footnote 20).

fishing rights as “currently exercised to maintain the livelihood of the Tribe members, not as these rights once were exercised.” This language became the focus of the District Court’s next *Adair* opinion (*Adair III*) in 2002. The appellate court also found that, although the Klamath Tribes once had exclusive access to the region’s natural resources, their water right was limited to the amount necessary to “provide the Indians with a livelihood—that is to say, a moderate living.”²³

In *Adair III*, the District Court: (1) confirmed that the Tribes’ reserved rights extend to gathering, and (2) rejected any argument that would have the practical effect of setting the Tribes’ reserved water right at a level that does not support productive habitat.²⁴ Because diversion of water is not required to support fish and game, the water right reserved to further the Tribes’ hunting and fishing purposes is “unusual in that it is basically non-consumptive.... Rather, the entitlement consists of the right to prevent other appropriators from depleting the streams [sic] waters below a protected level in any area where the non-consumptive right applies.”²⁵

As defined by the *Adair* courts, treaty rights apply only to members of the Tribes and cannot be transferred to nontribal successors. Specifically, the United States and individual non-Indian successors did not acquire water rights of the same type that tribal members possess when they acquired reservation lands. Rather, they acquired water rights consistent with the purposes of their own reservation of the land (in the case of the federal government) or individual land uses (in the case of private landowners), with priority dates based on the date when the reservation was created.²⁶

The progress of the *Adair* cases reflects a continuity of judgment over the past 25 years. The courts have consistently affirmed that the Klamath Tribes are senior right holders, that their priority dates to “time immemorial,” and that tribal water rights are subject to state adjudication for quantities, although no adjudication may result in amounts below the minimum “necessary to support productive habitat.”

The downstream tribes

In 1855, the President, by executive proclamation, established the Klamath Reservation (now the Yurok Reservation) in California. The Hupa Valley Reservation was formally set aside for Indian purposes by executive order in 1876. (An 1891 executive order “extended the Hoopa Valley Reservation to include the old Klamath Reservation and the strip of land connecting the two reservations.”)²⁷ The executive orders establishing the downstream reservations also reserved rights to an in-stream flow of water sufficient to protect the tribes’ rights to take fish within their reservations. The Yurok and Hupa Valley tribes’ fishing rights entitle them to take fish for ceremonial, subsistence, and commercial purposes.²⁸

The 1988 Hoopa Yurok Settlement Act (HYSA)²⁹ reaffirmed these rights and partitioned the Reservation into the present Hupa Valley and Yurok reservations, declaring the assets of each reservation held in trust by the United States for the benefit of the respective tribes.³⁰ “As with the Klamath Tribes, the Yurok and Hoopa Tribes’ water rights include the right to prevent other appropriators from depleting the streams’ waters

²³Quoting from *Arizona v. California*, 373 U.S. 546, 83 S.Ct. 1468 (1963).

²⁴In addressing an attempt by some defendants to interpret the appellate court’s “as currently exercised” language as the definitive measure for quantifying the tribal water right, the court stated that the quantification standard must focus on fulfilling the purpose of the reservation. The court established the minimum level of the tribal water right as that which is “necessary to support productive habitat.” “A stream without water cannot be reconciled with the purpose of the tribal right which is to ‘guarantee continuity of the Indians’ hunting and gathering lifestyle.’”

²⁵Quoting from *Adair II*.

²⁶Here the *Adair II* court cites *Colville Confederated Tribes v. Walton*, 647 F.2d 42 (9th Cir. 1981).

²⁷See *Mattz v. Arnett*, 412 U.S. 481, 493–494, 37 L.Ed.2d 92, 93 S.Ct. 2245 & app. (1973).

²⁸*United States v. Eberhardt*, 789 F.2d 1353, 1359 (9th Cir. 1986)

²⁹25 U.S.C. § 1300i et seq.

³⁰25 U.S.C. § 1300i-l(b)

below a protected level.”³¹ The Karuk claim an unextinguished aboriginal fishing right and are seeking federal clarification of this right.³²

Federal–state–tribal relations

The State of Oregon has been in the process of adjudicating the allocation of water in the Upper Klamath Basin since 1976 (see Chapter 3, “Legal Aspects”). Nonetheless, despite general judicial and Congressional deference to state law in water allocation, federal ESA and treaty responsibilities led the federal government to, in effect, reallocate Klamath River and Upper Klamath Lake water in 2001. Tribally commissioned studies of fish populations helped to construct the legal and scientific basis for this action.

Unanswered at this time is how the exact quantification of water rights in the Klamath Basin will occur.³³ Although the courts have located quantification clearly within state jurisdiction, the quantity and timing of in-stream water required to support game and fish now are the subject of federal agency-managed inquiry under the ESA. Tribal claims fortify this process. Federal deference to state water law, combined with federal responsibilities to the tribes and under the ESA, creates an unresolved ambiguity. Affected agricultural interests have sought review of relevant federal decision-making and its underlying science, the current *de facto* determinants of Upper Klamath Basin water allocation. Where states show the capacity and willingness to respect and settle tribal claims,³⁴ opportunities for cooperative outcomes tend to increase.

The Endangered Species Act

Congress enacted the ESA in 1973 “to provide a program for the conservation of ... endangered and threatened species.”³⁵ The Act requires federal agencies to avoid causing jeopardy to any such species through actions that affect the viability of the species or its habitat. In the drought year of 2001, avoidance of jeopardy for Upper Klamath Lake suckers and Klamath River coho salmon required a major federal reallocation of water from agriculture to habitat

protection. The cost fell heavily on farmers, farmworkers, and farm communities.

Although the Project uses, on average, only one-third of the available flow into Upper Klamath Lake, and a far smaller portion of the Klamath River system’s total discharge, it was required to respond to a basinwide problem that was only partially of its own creation. Many factors outside the Project have contributed to the decline in fish populations. Among them are:

- Upstream land-use practices that increase nutrient runoff and stimulate algal blooms in Upper Klamath Lake
- Development and diversion of water resources in downstream tributaries that decrease spawning habitat and diminish water quality and quantity
- Overfishing
- Hydroelectric facilities that block natural fish migration
- Logging practices along the length of the Klamath River
- Road-caused erosion and water redistribution
- Sediment from construction and fire sites

³¹Solicitor Opinion, 1995, citing Joint Board of Control, 832 F.2d at 1131–1132; *Adair*, 723 F.2d at 1411; and also *Kittitas Reclamation District*, 763 F.2d at 1033.

³²Although the Karuk were not included in *Parravano*, their proximity to and apparent similarity with the Hupa and Yurok tribes suggest that their rights are of similar origin.

³³Note that the Lower Basin Yurok, Karuk, and Hupa tribes are not party to Oregon’s Upper Basin adjudication because their reservations are in California, a vivid example of the jurisdictional fragmentation common in the Klamath Basin.

³⁴See Thorsen (1986) and Sly (1988) for discussion of negotiated settlements between states and tribes over the extent of reserved rights. The State of Montana has been particularly active in the use of such settlements, which typically involve various types and amounts of federal contribution to help resolve remaining issues.

³⁵16 U.S.C. § 1531(b). The purposes of the ESA are “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve [these] purposes....” *Id.* § 2(b).

Although the ESA has not been applied to many of these activities, the Bureau of Reclamation is forbidden from inflicting further jeopardy on a listed species through its actions.³⁶ Thus, in 2001, the ESA seemed to become the dominant water policy in the Upper Klamath Basin, and its federal processes controlled water allocation decisions. Several court cases help us to understand the legal sources of this power.

TVA v. Hill (1978)

In this case, the U.S. Supreme Court examined the legislative background of the ESA in great detail and established Congress' clear and unambiguous intent that species preservation is among the "highest priorities." The Court determined that the ESA requires federal agencies to avoid jeopardy "whatever the cost."

The case involved the nearly complete Tellico Dam in Tennessee and a small, endangered fish, the snail darter. The snail darter's habitat would be destroyed if the reservoir behind the nearly complete dam was filled. The Secretary of the Interior declared the affected section of the Little Tennessee River "critical habitat," and environmental groups sued to halt dam construction. The Supreme Court affirmed the Court of Appeals injunction to halt all activities that would destroy or modify critical habitat, even though Congress had appropriated, and the TVA had expended, about \$100 million on dam construction.

The underlying situation in the TVA case was analogous to that in the Upper Klamath Basin, but there are two major differences. First, the Klamath situation involved existing beneficiaries (irrigators) who depended on water deliveries that had been reliable for a century, while the Tellico Dam had not begun to yield tangible benefits or dependence upon them. Second, the costs resulting from the Court's decision in *TVA* never were placed solely on local communities, but were absorbed nationally,³⁷ while the costs in the Upper Klamath Basin initially fell entirely on the agricultural population in and around the Project. (Taxpayers subsequently have paid more than \$30 million of

the cost in the form of federal and state transfer payments to Project irrigators and landowners, as well as various community assistance programs.) This differential distribution of burden reflects a substantial shift of ESA applications from situations with lighter consequences or wider sharing of burden (e.g., the Tellico Dam) toward one with greater consequences and narrower placement of burden (the Upper Klamath Basin in 2001).

Klamath Water Users Association v. Patterson (1998)

This case, too, was driven by ESA compliance and impacts of water operations on endangered species. The BOR proposed operation of the Klamath Reclamation Project in a way that would have resulted in flows of 1,000 cubic feet per second (cfs) from the Link River Dam, the flow-controlling structure at the outlet of Upper Klamath Lake. However, this level of flow would have violated the Federal Energy Regulatory Commission (FERC) license of PacifiCorp, the private operator of the dam, which specified a flow of 1,300 cfs in September. The two parties resolved the discrepancy in flow standards by making the BOR's recommended flow contingent on concurrence by FERC. The Klamath Water Users Association (KWUA) sought a temporary restraining order, arguing that the redistribution of flows would damage their interests and that they were, therefore, entitled to third-party beneficiary status.

³⁶16 U.S.C.A. § 1536 (2) states: "[each] Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an 'agency action') is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available."

³⁷After the *TVA* decision, Congress exempted the TVA project, the snail darter was successfully relocated, and the Tellico Dam was completed.

Project irrigators had water delivery contracts with the BOR (known as “repayment contracts”). Judge Michael R. Hogan’s opinion stated that the “vast majority”³⁸ of these contracts provided that in the event of “drought, canal breaks, inaccuracy in distribution, or other causes, there may occur at times a shortage in the water supply provided for herein for lands of the [Reclamation] District and, while the United States will use all reasonable means to guard against such shortages, in no event shall any liability accrue against the United States ... for any damages, direct or indirect, arising therefrom....”³⁹

This case illuminates the complexities of water contracts and the conditionality of their benefits—i.e., their dependence on water availability, other water claims, and federal regulations not specified in the contract. Judge Hogan decided that PacifiCorp and members of the KWUA had separate contractual arrangements with the BOR—the former for dam operations, the latter for irrigation water. Although PacifiCorp and the KWUA relied on the same flow and contracted with the same agency, distinct contracts and conditions governed the relationship in each case. Thus, the KWUA was not a third-party beneficiary under PacifiCorp’s contract with the BOR and could not legally influence or otherwise seek to modify the relationship between them. Judge Hogan further stated that the KWUA members’ contract rights were subordinate to senior tribal rights and to the claims of subsequent legislation such as the ESA.

The KWUA appealed the decision in *Klamath Water Users Assoc. v. Patterson* (1999). Judge A. Wallace Tashima found that federal law controlled the interpretation of the contracts in this situation. Looking to *Kennewick I.D. v. U.S.*⁴⁰ for guidance, he declared that a contract must be read as a whole and that its terms are to be given their ordinary meaning (i.e., what a contract says in plain language is preferable to other ambiguous meanings). The appeals court distinguished between intended and incidental beneficiaries and affirmed the District Court

finding, including the BOR’s responsibility to “divert the water and resources needed to fulfill the Tribes’ rights [that] take precedence over any alleged rights of the irrigators.”

Pacific Coast Federation of Fishermen’s Ass’n v. Bureau of Reclamation (2001)

In May 2000, various conservation and fishing interests filed a lawsuit challenging the BOR’s 2000 KPOP. They alleged that the BOR violated the ESA in 2000 by releasing water for irrigation and water flows in the Klamath River prior to required consultation with the National Marine Fisheries Service (NMFS) regarding the Project’s effects on coho salmon. Judge Sandra Brown Armstrong agreed. In a ruling on April 3, 2001, she enjoined the BOR from sending irrigation deliveries to the Project when the Klamath River at Iron Gate Dam dropped below certain minimum flows.

The specified minimum flows were those recommended in a study commissioned by the Department of the Interior and the Bureau of Indian Affairs, known as the Hardy Phase I report after Dr. Thomas Hardy, the leader of the scientific team.⁴¹ These flow standards would hold until the BOR completed a plan and consultation with the NMFS to guide operations in the new water year (2001). The BOR’s consultation with the NMFS required either a formal “no jeopardy” finding by the NMFS or its written concurrence that the 2001 KPOP was unlikely to adversely affect coho salmon.

Judge Armstrong’s decision in *Pacific Coast Federation* sheds additional light on the complex interactions among various water contracts and

³⁸*Klamath v. Patterson*, 15 F. Supp. 2d 990; 1998 U.S. Dist. LEXIS 1884

³⁹Declaration of Karl Wirkus [# 163] Ex. B, pp. 12–13. Cited in *Klamath v. Patterson* (1998), affirmed in *Klamath v. Patterson*, 204 F.3d at 1213 (9th Cir. 1999).

⁴⁰880 F.2d 1018, 1032 (9th Cir. 1999)

⁴¹Prepared by the Institute for Natural Systems Engineering (INSE), Utah Water Research Laboratory, Utah State University. The report sometimes is referred to as the INSE report.

laws within a legally established hierarchy of federal responsibility. It stated:

“[T]he Secretary of the Interior, through the Bureau of Reclamation, must manage and operate the Klamath Project pursuant to various legal responsibilities. Pursuant to the Reclamation Act of 1902 the Bureau of Reclamation has entered into contracts with various water districts and individual water users to supply water, subject to availability, for irrigation purposes. Two national wildlife refuges, the Lower Klamath and Tule Lake national wildlife refuges, also are dependent on the operations of Klamath Project and have Federal reserved water rights to the amount of water, unreserved at the time of creation of the refuges, necessary to fulfill the primary purpose of the refuges. In addition, the Secretary of the Interior has recognized that a number of Oregon tribes, including the Klamath, Yurok and Hoopa valley tribes, hold fishing and water treaty rights in the [Klamath] basin. The Bureau of Reclamation has an obligation to protect tribal trust resources, including the Klamath River coho salmon. It also has an obligation under the ESA not to engage in any action that is likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such a species” [citations omitted].

The 2001 KPOP

The Armstrong decision set the stage for the 2001 KPOP, and the Klamath conflict came to a head in the 3 days following the decision. The BOR had initiated formal ESA consultations in early 2001 by forwarding Biological Assessments of the effects of Project operations on suckers and coho salmon to the USFWS and the NMFS. Both agencies had found that Project

operations likely would jeopardize the species under their purview, suckers and coho salmon, respectively. The USFWS proposed a Reasonable and Prudent Alternative (RPA) for a minimum elevation of Upper Klamath Lake to improve water quality, increase habitat for juvenile and adult suckers, and provide greater access to spawning areas (see Chapter 5, “Suckers”). The NMFS RPA proposed a range of minimum in-stream flows to increase riparian habitat for coho salmon in the Klamath River below Iron Gate Dam from April through September 2001, as well as to assist migrating salmon smolts in the spring (see Chapter 6, “Coho Salmon”). Upon review of these draft Biological Opinions, the BOR informed the USFWS and the NMFS that the forecasted water supplies for 2001 were insufficient to meet the needs of both RPAs.

On April 6, 2001, the USFWS and the NMFS released their final Biological Opinions. They adjusted the minimum Upper Klamath Lake elevations and Klamath River flows to reflect the reduced water availability in the 2001 water year. On the same day, the BOR issued its 2001 KPOP. The Plan incorporated the conclusions contained in the Biological Opinions and implemented the RPAs. So little water remained that most Project lands received no water deliveries in 2001.

Basin water users filed a procedural challenge to the 2001 KPOP in the U.S. District Court for the District of Oregon.⁴² Stephen Kandra, David Catka, Klamath Irrigation District, Tulelake Irrigation District, Klamath Water Users, et al. sought injunctive relief from implementation of the plan, claiming that it breached their contracts and was “arbitrary and capricious” under the Administrative Procedures Act (APA).

The National Environmental Policy Act of 1969⁴³ requires federal agencies to issue an Environmental Impact Statement (EIS) if they undertake a “major federal action.” Kandra et al.

⁴²*Kandra et al. v. U.S.*, 145 F. Supp. 2d 1192 (2001)

⁴³42 U.S.C.A. §§ 4321–4361

asserted that the operational changes in the 2001 KPOP constituted such an action. The court disagreed. If it were to find otherwise, it noted, federal agencies would be constantly preparing EISs. Additionally, even if an EIS were required, the BOR would not be able to obtain the required information (stream flow forecasts from the Natural Resources Conservation Service, Biological Opinions from the NMFS and the USFWS) in time to prepare an EIS before the irrigation season.

“As an initial matter, plaintiffs’ characterization of Reclamation’s duty to protect ESA species and tribal resources as a ‘change in operations’ implemented in response to various ‘demands’ is inaccurate. Reclamation has responsibilities under the ESA as a Federal agency. These responsibilities include taking control of the [Project] when necessary to meet the requirements of the ESA, requirements that override the water rights of the Irrigators.”⁴⁴

Similarly, the United States, as trustee for the Tribes, is obligated to protect the Tribes’ rights and resources. Water rights for the Klamath Tribes “carry a priority date of time immemorial.”⁴⁵ These rights “take precedence over any alleged rights of the Irrigators.”⁴⁶ The BOR, therefore, has a responsibility to divert the water and resources needed to fulfill the Tribes’ rights. As such, its “change in operation” was mandated by law, and the requirements of NEPA did not apply.⁴⁷

Judge Ann Aiken wrote that, as in *TVA v. Hill*, “the ESA requires an agency to avoid jeopardy [to an endangered] species, ‘whatever the cost.’” In this case, that meant reallocating water for fish habitat. Her opinion identified the endangered shortnose and Lost River suckers and threatened coho salmon and bald eagles as species for which the Bureau of Reclamation is accountable. It also identified the BOR’s responsibilities to the Klamath, Hupa, Yurok, and Karuk tribes. It recognized the need for a long-term operations plan and chastised the BOR for not completing one.

While Judge Aiken acknowledged that undisputed economic hardship would occur as a result of the 2001 KPOP, she stated:

“Threats to the continued existence of endangered and threatened species constitute ultimate harm. Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities, thereby adopting a policy which it described as ‘institutionalized caution.’⁴⁸ As recognized by the District Court and the Ninth Circuit, the plaintiffs’ contract rights to irrigation water are subservient to ESA and tribal trust requirements (see *Patterson*). Therefore, plaintiffs could not assert breach of contract based on the BOR’s allocation of water to protect suckers and coho salmon.”

Kandra et al. also argued that the NMFS and the USFWS selectively reported information in the Biological Opinions and ignored other relevant scientific evidence. They would have had the court substitute its analysis of the relevant science for that of the expert agencies. Under the Administrative Procedures Act, however, an agency decision must be upheld unless it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”⁴⁹ The court is not empowered to substitute its judgment for that of the agency.⁵⁰

“When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original

⁴⁴*Patterson*, 204 F.3d at 1213

⁴⁵*Adair*, 723 F.2d at 1414

⁴⁶*Patterson*, 204 F.3d at 1214

⁴⁷*National Wildlife Federation v. Espy*, 45 F.3d 1337, 1343 (9th Cir. 1995)

⁴⁸*Tennessee Valley Authority v. Hill*

⁴⁹5 U.S.C. § 706

⁵⁰*Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416, 28 L.Ed.2d 136, 91 S.Ct. 814 (1971)

matter, a court might find contrary views more persuasive.⁵¹ In other words, a court may reverse the agency’s decision as arbitrary or capricious only if the agency relied on factors Congress did not intend it to consider, entirely failed to consider an important aspect of the problem, offered an explanation that ran counter to the evidence before the agency, or offered one so implausible that it could not be ascribed to a difference in view or the product of agency expertise.”⁵²

Absent a showing that the NMFS or the USFWS failed to consider relevant, available, scientific data, plaintiffs were unlikely to prevail on this claim. Even if they could have succeeded on the merits of their ESA claims, the ESA explicitly prohibits the relief they sought—an injunction against implementation of the KPOP.

The *Kandra et al.* decision relied on *TVA* and was consistent in favoring protection of endangered species over other interests. Unlike the Klamath situation, however, *TVA* did not involve an existing set of beneficiaries who had immediate need of, and reason to expect, deliveries of water. Although these circumstances do not affect the legal construction, legitimacy, or implications of the court’s verdict, the social effects in the Upper Klamath Basin are considerably more immediate and certain than in previous instances. In this way, the underlying circumstances of the *Kandra* case may be understood to expand the range of acceptable economic consequences of the ESA. We also note that similar effects have been avoided in other basins with equivalent stakes through efforts to find compromise solutions. (See “Cohesion and coordination,” later in this chapter.)

Differential application of the ESA

The financial stakes in the Klamath Basin are modest when compared with those in other basins that confront ESA issues, such as the Columbia and Sacramento-San Joaquin. In those cases, similar sets of federal and state agencies faced conflicts like those in the Klamath Basin.

However, those basins have integrated systems of hydroelectric plants, water storage and conveyance structures for agricultural and municipal use, and navigation enhancements that directly serve tens of millions of people. The costs of rigid ESA compliance in those circumstances would be magnitudes greater than those incurred in the Klamath Basin. To date, those basins have avoided rigid ESA compliance through a variety of alternative arrangements.

Takings

“[T]he Fifth Amendment is violated when land-use regulation ‘does not substantially advance legitimate state interests or denies an owner economically viable use of his land.’”⁵³ This situation is termed a “taking.” The courts have found takings to be a compensable action: the government must compensate property owners if it denies them the use of their property. Here we examine the defining Supreme Court takings case, *Lucas*, and a recent Court of Federal Claims trial that shares characteristics with the situation in the Upper Klamath Basin, the *Tulare* case.

Lucas v. South Carolina Coastal Council (1992)

This is a (if not the) leading takings case. It involved a beachfront property owner with “investment-backed expectations” who was prohibited from developing his property by subsequent state legislation. In defining the boundaries of the Beachfront Management Act, South Carolina imposed the burden of preventing dune erosion on a subset of property owners of which Lucas was a member. The principal question posed was whether the owner had been deprived of all economically beneficial use of the land (bundle of rights) as a consequence of regulation. (Even where that is the case, however, it is argued that if “background principles” are in existence that preclude nuisance or other

⁵¹*Marsh v. Oregon Natural Resources Council*, 490 U.S. at 378

⁵²*Western Radio Service Co. v. Espy*, 79 F.3d 896, 900 (9th Cir. 1996) (citing *Dioxin/Organochlorine Center v. Clarke*, 57 F.3d 1517, 1521 (9th Cir. 1995))

⁵³Justice Scalia quoting from *Agins*, 447 U.S. at 260 in the *Lucas* opinion.

undesirable uses of a property, the state may prohibit those uses without compensation. In other words, those uses were not part of the title to begin with, and the owner always was prohibited from them.)

In *Lucas*, the Supreme Court found that the lower court had used the wrong standard in determining whether the state beachfront management statute effected a taking of Lucas' property. The Court sent the case back to the lower court for proceedings "not inconsistent" with the Supreme Court's verdict, where the state's action was held to be a taking.⁵⁴

The principle of disproportionate burden is implied in the Supreme Court's verdict, although it is not the focus. In the Upper Klamath Basin situation, however, this is a key argument. The jurisdiction of the BOR is a subset of burdened *property* users within a larger group of users in the Basin. We emphasize property, because the repayment contracts under which water is provided to Klamath Project irrigators contain "hold harmless" clauses, which specifically state that interruptions in water delivery for a variety of reasons are not a breach of contract.⁵⁵ This fact makes Project irrigators' takings claim more difficult to argue, since the claim would be based not on an alleged breach of contract, but on an alleged taking of their right to economically beneficial use of property. Such a claim evidently is not beyond reach, as the next case, *Tulare*, demonstrates.

Tulare v. U.S. (2001)

This trial concerned two species of fish that the USFWS and the NMFS determined to be in jeopardy of extinction, the delta smelt and the winter-run chinook salmon, respectively. The agencies' efforts to protect the fish by restricting water outflows in California's primary water distribution system, the Bay-Delta, brought the ESA into conflict with California's century-old regime of private water rights. Judge John P. Wiese wrote that "[t]he intersection of those concerns, and the proper balance between them, lie at the heart of this litigation." Note that this case is controversial, and the decision may yet be appealed and overturned.

In this case, water contractors chose not to rely on arguments based on their water contracts, which contained specific exclusions. Instead, they made the claim against the regulatory agencies (the NMFS and the USFWS) that issued Biological Opinions requiring the contracting agency (the California State Water Project) to leave water in the watercourse for species and habitat protection. The water contractors claimed that they were deprived of water as a result of these regulatory actions.

In his discussion of the case, Judge Wiese wrote that "[t]he Fifth Amendment to the United States Constitution concludes with the phrase: 'nor shall private property be taken for public use, without just compensation.'" The purpose of that clause is "to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole." At issue was not whether the federal government has the authority to protect the winter-run chinook salmon and delta smelt under the ESA, but whether it could impose the costs of their protection solely on plaintiffs.

The decision explained the difference between physical and regulatory takings. A physical taking occurs when the government's action amounts to a physical occupation or invasion of the property, including the functional equivalent of a "practical ouster of [the owner's] possession." By contrast, a regulatory taking arises "when the government's regulation restricts the use to which an owner may put his property." Judge Wiese found that the federal government's actions, through the USFWS and the NMFS, were a physical taking. He found that "the Federal government is certainly free to preserve the fish; it must simply pay for the water it takes to do so."

⁵⁴See Sax, J. 1993. "Property rights and the economy of nature—Understanding *Lucas v. South Carolina Coastal Council*," *Stanford Law Review*, Vol. 45, No. 5 (May):1433–1455, for an extended discussion of the significance of this decision.

⁵⁵See the discussion in the section entitled "*Klamath Water Users Association v. Patterson*," earlier in this chapter.

With this decision, Judge Wiese found irrelevant all recent state–federal agreements, such as those under the CALFED⁵⁶ umbrella, which emphasize the correlative nature of response to scarcity. In correlative responses, all parties absorb scarcity through mutually equitable adaptations to available supply.⁵⁷ Instead, the decision highlights a fundamental tension between dynamic ecosystems, sustainability, and evolving water policy on the one hand and water rights claims and “promissory assurances” written into contracts frozen in time on the other.

A takings claim has been filed in the Upper Klamath Basin in the Federal Claims court based on the reasoning that prevailed in *Tulare*. Following *Tulare*, filing suit against the USFWS and the NMFS is a charted course that the Klamath Water Users Association can and has readily adopted, with the same legal representation (Marzulla & Marzulla) that succeeded in *Tulare*.

Executive responses to judicial decisions

When courts rule against the federal government, the Administration and its agencies can choose how to respond. The option selected shapes policy direction and implementation.

For example, in *Alsea Valley Alliance v. Evans*,⁵⁸ District Court Judge Hogan held that the NMFS erred by not including hatchery-bred salmon in determining ESA listings.⁵⁹ The NMFS, having the choice to appeal or not, refrained from appealing the decision and instead chose to review its hatchery fish policy for the listed coho salmon, as well as for 20 other ESA listings that include hatchery-bred salmon. In the absence of an appeal, the argument that hatchery and wild stocks are no different goes unchallenged. Subsequent litigants, courts, and agencies facing species listings thus will be offered an untested precedent.

The Administration also may appeal too weakly to win a case. In *State of Idaho v. United States Forest Service* (2001),⁶⁰ for example, the Justice Department conceded that the Forest

Service’s roadless rule, which restricts access to designated areas within national forests, would cause logging and snowmobiling interests irreparable harm. With this statement, the Administration undermined any defense of the rule, while publicly announcing its support for it.

By choosing not to appeal or by offering a weak appeal, rather than an effective one, an Administration may advance the case that the costs of the ESA are disproportionate to the benefits it provides, or at least are allocated inequitably. Its choice may depend on the extent of the financial stakes in the particular case. No direct monetary damage has been alleged against the United States in the *Idaho* case, thus reducing the likelihood of interagency friction—between agencies with financial responsibility and those with substantive responsibility—over the Administration’s decision to present a weak defense. The *Tulare* case, on the other hand, involves monetary damages, so different parts of the Administration (the Department of Justice and the Department of Interior, for example) may have different views on the appropriate response. Although the penalty phase has not yet occurred in *Tulare*, newspaper reports cite estimates of up to \$15 million in compensation due to the plaintiff irrigators.

⁵⁶CALFED is a large-scale state–federal cooperative effort to resolve complex water problems in and around the California Bay-Delta. See further discussion under “Balance of responsibility and capacity,” later in this chapter.

⁵⁷Examples include the Bay-Delta accord in 1994 and the Framework for Action and Programmatic Record of Decision in 2000.

⁵⁸Case No. 99-6265-HO (D. Ore. September 10, 2001)

⁵⁹The court ruled that because the NMFS had not distinguished hatchery-spawned coho salmon and wild stocks as “distinct population segments” when it listed coho as endangered in 1998, it cannot develop ESA compliance strategies based on extinction threats for wild salmon runs alone. The NMFS must treat both hatchery stocks and wild stocks as a single resource under the ESA, despite the fundamental differences in spawning behavior caused by human intervention in hatchery operations.

⁶⁰Case No. CV01-11-N-EJL, District Court for the District of Idaho, April 2001

Issues raised by the 2001 KPOP

Our assessment of the legal context of the 2001 KPOP shows that the decisions leading up to the abrupt halt of irrigation supplies to Project irrigators from Upper Klamath Lake were consistent with existing law and did not set precedents of judicial interpretation. However, the consequences of these decisions seem to raise some issues to potentially precedent-setting levels. In particular, these issues relate to:

- The legitimate extent of private burden for a public purpose
- The appropriate balance between scientific uncertainty and socioeconomic burden
- The reasonable stress between administrative procedures and the natural and social processes in which they are used
- The acceptable tension between absolute water claims and dynamic natural and social systems
- The relationship between tribal treaty rights, state systems of water rights adjudication, and federal laws that effectively control water allocation in certain circumstances

These issues arose from an outcome that was more extreme than any previous application of the ESA. In other words, although the policy was consistent with prevailing law, its application may test the “whatever-the-cost” standard. When viewed in combination with the *Tulare* decision, the Upper Klamath Basin water allocation decisions of 2001 may lead “stakeholders,” legislators, agencies, and courts confronting claims in the Columbia, Sacramento-San Joaquin, and other river basins to weaken the ESA. Alternatively, these circumstances could motivate Klamath Basin interests to coalesce and build a social fabric that can shape how the ESA is implemented, and how the benefits and burdens of satisfying specific public interests are distributed, within a context of diverse and important basin interests. A later section of this chapter, “Strategies for change,” discusses that possibility.

Social and institutional fragmentation of a common river

Although the parts of a river basin are hydrologically interdependent, a basin rarely, if ever, displays social integration in the absence of major commitments to unify and coordinate activities affecting shared interests.⁶¹ Basins are divided among groups, agencies, and jurisdictions that respond to forces—markets, politics, culture, law, and administrative demands—originating elsewhere and unrelated to the basin in which they happen to converge. Policy impacts depend on how well the jurisdictions, agencies, and interest groups within a basin overcome their differences to advance a common vision and to distribute benefits and burdens so as to move actions toward the common good.

As the previous section shows, the ESA is a clear and strong policy. Congress and the courts have given priority to the protection of endangered species, “whatever the cost.” Court interpretations have given it dominance over tribal rights, and tribal rights over irrigators’ rights. But the actual consequences of a policy, as contrasted with its legal form, depend partly on the capacities and inclinations of the jurisdictions, agencies, and communities that implement the policy and/or respond to its implementation. A policy’s outcome depends on actions that intervene between the words setting forth the policy and the tangible effects of the policy. The motives, qualities, and strengths of these actions vary tremendously from place to place. Thus, a policy, although uniform in word for all, will result in very different tangible effects from place to place.

The strong consequences of the ESA in the Upper Klamath Basin reflected the Basin’s amorphous capacities to turn the law toward preferable ends, and perhaps toward easier and better fulfillment of the intent of the law. The

⁶¹Romm J. 1994. “Watersheds and social systems: Linking causes and consequences of watershed activities.” In D. Erman, ed. *Obstacles to Watershed Management* (Water Resources Center Report No. 81, University of California, Davis).

Klamath Basin is characterized by sharp social and jurisdictional divides. It is no different in this regard than any other basin. However, the Klamath has not yet developed a set of shared interests that could help to overcome divisions, as has occurred elsewhere. Moreover, changes in the relative powers among Basin interests—e.g., agricultural, tribal, and environmental—have left agencies with formal responsibility and authority (such as the Bureau of Reclamation) stranded on a foundation of eroding social power. The consequences are weak collective capacity for the Basin as a whole and distributions of authority and responsibility that are inconsistent with distributions of capacity for effective action. In these circumstances—social and institutional fragmentation and basinwide responsibility placed on an agency whose capacity is too narrow to satisfy this responsibility—a policy such as the ESA takes on the power of coordination by default.

In this section, we review the distribution of power and interest within the Klamath Basin and their relations with existing structures of authority. We draw comparisons with situations in which applications of the ESA have drawn forth outcomes different than those that have developed thus far in the Klamath. We also examine patterns of response in basins with analogous distributions of social power, but where compensating capacities have permitted some reasonable balance in the distribution of responsibility, benefits, and burdens of decisions. Our analysis suggests possible strategic directions for creating institutional relations that can prevent future crises and advance interests in the Klamath Basin as a whole.

The Klamath Basin

The social and jurisdictional fabric of the Klamath Basin is characterized by fragmentation. Divisions exist between the tribes and Euro-American settlers, between upstream and downstream populations, and between agricultural and environmental interests (see Chapter 9, “Communities”). They also exist among federal, state, and tribal forms of

sovereign power. Even among federal agencies, divisions are seen between older, propertied agencies (e.g., the BOR, Forest Service, and Bureau of Land Management) and ascending specialized, functional agencies (e.g., the NMFS, USFWS, and Environmental Protection Agency). The former hold upland territory, while the authority of the latter is penetrating swiftly upstream via specialized authorities for species, water quality, and habitat.⁶²

The division of the Basin between California and Oregon complicates the situation. The two states have, despite certain appearances of similarity, different systems of water law and administration, which must function within dramatically different political, demographic, and economic contexts. The Upper and Lower Basins have operated as virtually separate provinces, connected primarily by the shared flow of the river.⁶³

Each of the four major tribes represents a different group of Native American languages, ethnicities, and histories.⁶⁴ The Yurok Tribe is the westernmost extension of the Algonquin group, which also includes the Cree, Ojibwa, Cheyenne, and Blackfoot. The Hupa are part of the Athabaskan group, which ranges from the Navajo and Apache in the south to the Kweich’ in arctic Alaska and the Yukon. The Karuk are northernmost in a group that includes the Pomo, the Chumash of the Tehachapi region, the Yuma

⁶²Romm, J. 2000. “California forest policy must bend to the new social order.” *California Agriculture* (March):35–42.

⁶³The Trinity diversion, under BOR responsibility, has sent approximately 800,000 acre-feet per year into the Central Valley system. Administration promises in 2000 to almost halve the flows diverted from the Trinity-Klamath Basin seem to have stalled. The Hupa have sued for fulfillment of these promises.

⁶⁴See, for example, Heizer, R.E. and M.A. Whipple. 1971. *The California Indians: A Source Book*, 2nd ed. (University of California Press, Berkeley); Josephy, A. 1968. *The Indian Heritage of America* (Houghton Mifflin, Boston); Powers, S. 1877 (reprinted 1976). *Tribes of California* (University of California Press, Berkeley); Boaz, F. and J.W. Powell. 1966. *Handbook of American Indian Languages (1911) and Indian Linguistic Families of American North of Mexico (1891)* (University of Nebraska Press, Lincoln); Heizer, R., ed. 1978. *Handbook of North American Indians: California* (Smithsonian Institution, Washington, DC).

and Havasupai in the Colorado Basin, and various tribes in Mexico. The Klamath-Modoc are part of a group that includes the Nez Perce and Yakima northward and the Maidu and Miwok to the south.

The essential institutional quality of the Klamath River system is a fragmentation of interests and authorities without compensating relationships for conflict resolution and cooperation. Several aspects of this quality are readily visible. For example, the Klamath River's major tributary, the Trinity, has been managed primarily as an extension of the Central Valley and greater California water system. Thus, it is subjected to a different and external set of institutional and political dynamics that effectively isolates it from the Klamath. The tribes, although holding senior water rights, have until recently been largely isolated from decision processes about the river.

Other aspects of fragmentation are less obvious, but nonetheless significant. For example:

- Existing institutions for water allocation are both ambiguous and unbalanced in their distributions of *authority* (the formal responsibility to affect outcomes) and *power* (actual capacity to affect outcomes). Thus, the Bureau of Reclamation and the Project's irrigation districts have controlled the dominant levers of *authority* over Klamath River flows for almost a century, during which time the relative *powers* of tribal, environmental, and downstream interests have grown. The flip side of this situation is that the BOR and irrigation districts increasingly bear the responsibility and burden for satisfying others' increasingly powerful interests. The relationship between responsibility and capacity—or authority and power—in the Basin is unbalanced.
- With occasional exceptions, water allocation has been left to state law by the Constitution, the courts, and Congress. On the other hand, federal laws such as the Reclamation Act, the Termination Act, and the Endangered

Species Act have tended to override this deference, creating *de facto* allocation of water by federal agencies. Native American water rights have been particularly vulnerable to the ebbs and flows of federal water allocation because they have depended so much on federal policy and often have been acknowledged only residually in state water allocation regimes. The resulting instability and uncertainty in water allocation would decline dramatically if federal, state, and tribal governments worked to form and fulfill a compact tied to the specific conditions of sovereignty in the Klamath Basin.

State water regimes focus upon the equitable allocation of water among users. Federal influences on water allocation arise from responsibilities for satisfaction of a national purpose. Tribal rights, which are federally administered under treaty and trustee relationships with the tribes, involve actual *and prospective* uses that satisfy a reservation's purpose *and* treaty-assured water regimes that secure *environmental conditions* necessary to sustain traditional livelihoods and cultures. The differences of interest that exist within this state–Indian–federal triangle of relationships create inherent fault lines and have caused state attention to tribal rights to depend heavily on federal representation of those rights.

Sly (1988) offers a concise summary of the divides among the corners of this triangle:

“Both states and tribes are insecure about their sovereignty. From a state perspective, the history of western water rights and water development is a continuing effort to retain local control over the resource. Federal funds are welcome, but not federal control. Long and difficult struggles have been fought by western states to retain primacy over their water administration systems. Now the federal government is reducing its funding for water projects in the West—at the same time its regulatory presence is increasing.

Thus, states are very sensitive to a federal- or Indian-system of regulation undermining state administrative power.

“Tribes are also sensitive to the historical efforts of states to absorb Indian reservations within their borders. Tribal sovereignty and powers are a primary concern to many tribal members, and state efforts to assert jurisdiction over reservation lands are seen as a threat to the tribal prerogative of self-government” (p 11).

The Klamath River Basin Compact was established in 1957 in an attempt to rationalize these relationships in a manner that advanced collective vision and enterprise. Reflecting the concerns of the time, it set priorities among *actual uses* of water and a basis for joint activities among the federal government and the states of Oregon and California. Tribes were included only as users the federal government was obligated to protect. Reflecting the power structure of the time, irrigation was assigned priority above all uses except drinking water. Federal regulation of in-stream quality and flow and tribal assertions of sovereignty (the Klamath Reservation was in the process of being disbanded) had no foothold in the social concept of the Klamath Basin in the mid-1950s.

- The authority of state water law and process over water allocation has grown steadily relative to property-based federal water rights, such as those of the BOR. At the same time, however, federal control over the qualities and consequences of water flow (fish populations, habitat, and water quality) has grown even more rapidly, leading to increased federal control over flow regimes themselves. Among the consequences are unresolved disparities between formal responsibility and actual capacity to control water allocations—disparities that exist

between federal and state governments, among different federal agencies, and between the tribes and the states.

The ESA has great power in such a situation because it provides a source of cohesion and coordination where other sources are absent, and because it creates opportunities for influence by interests—tribes, environmentalists, and fishers—who lack formal authority commensurate with their capacity to control events. Below, we examine other situations in which the outcomes of the ESA have differed, apparently as a result of greater cohesion and coordination among interested parties.

Cohesion and coordination

Although no less divided than the Klamath Basin, systems with more cohesive relationships have bent the influence of the ESA to produce outcomes acceptable in their circumstances. In some cases, such as the Northwest Forest Plan to protect the spotted owl, federal funds and inter-agency coordination created incentives for the development of a collective interest and provided compensation for some associated losses. In other cases, such as the four-county Habitat Management Plan for the endangered gnatcatcher in southern California, local initiative, state brokerage, and federal interest provided impetus to a coalition of counties, real estate developers, environmentalists, and bankers, leading to patterns of urbanization that protected gnatcatcher habitat in financially viable ways.

In the Eel River Basin, a coalition of local environmental groups, the Round Valley tribes, fishers, and associated agencies (e.g., the NMFS, EPA, USFWS, and Bureau of Indian Affairs) has used the ESA to strengthen basinwide organization to promote return of Eel River water, now diverted to the Russian River, to the Eel Basin for salmon recovery and habitat restoration.⁶⁵

⁶⁵See Langridge, R. 2002 (forthcoming). “Changing legal regimes and the allocation of water between two California rivers.” *Natural Resources Journal*.

In the Bay-Delta system of California, the endangered delta smelt provoked applications of the ESA that, instead of systemic seizure, produced CALFED, a consensus-oriented process of coordinated planning, finance, and investment.⁶⁶ Although the ESA provided the needed motivation and opportunity to develop CALFED, it now has been absorbed largely within the CALFED process as one of many rules and targets the CALFED is intended to satisfy (e.g., stabilized water supplies; increased efficiency of water storage, distribution, and use; and augmentation of delta flows by 800,000 acre-feet to improve smelt habitat). CALFED also creates a mode of federal–state cooperation that implicitly expands joint administrative control of water allocation, thus creating a new layer of water distribution mechanisms in California.⁶⁷

A final example is the Tennessee Valley Authority,⁶⁸ which emerged predominantly through huge, New Deal infusions of federal money, capacity, power, and authority. These inputs compensated for the dearth of such resources in the seven basin states, and they were justified by satisfaction of a national purpose—the economic, social, and ecological development of perhaps the nation’s most impoverished region. TVA became the first major legal target of the ESA (*TVA v. Hill*), perhaps because it was so clearly a federal project and had the capacity to distribute its losses widely.

The consequences of the ESA depended in all of these situations on the social context in which it was or might have been applied, and on the extent to which institutions could be developed to address water allocation questions in ways that were consistent with the variety of interests and capacities involved. In some cases, such as the Eel, relatively local coalitions sufficed for the initial stages of basinwide connection. In others, such as the gnatcatcher habitat plan, relatively equally distributed authorities, powers, and financial stakes required

brokerage of various deals among the state, counties, and the private sector, thus leading to a collectively valuable regional arrangement. In CALFED, extensive federal engagement was essential in order to improve coordination among federal agencies, to dilute financial stresses that otherwise would overwhelm the potential for cohesive action, to establish reasonable federal parity with a strong state, and to solidify a system of joint federal–state responsibility and capacity for water allocation.

Balance of responsibility and capacity

As noted above, threats to endangered Klamath Basin fish derived from causes spread throughout the Basin, but the ESA placed the primary responsibility for protection on the Bureau of Reclamation. As a result, in 2001, the full burden initially fell solely on the Klamath Reclamation Project, its irrigators, farmworkers, and communities. In other words, there was a wide gulf between the dispersed causes of species endangerment and the concentrated responsibility for species protection.⁶⁹

⁶⁶See Connick, S. 2002 (forthcoming). “The Use of Collaborative Processes for Making Water Policy in California: The San Francisco Estuary Project, the CALFED Bay-Delta Program, and the Sacramento Water Forum” (Ph.D. dissertation) for an extensive discussion of the CALFED process.

⁶⁷California water law embodies a number of different water rights doctrines and distributive approaches. In one way or another, for example, it involves the riparian doctrine, the prior appropriations doctrine, and federal reserved water rights (treaty-based and reservation-based), as well as localized uses of the pueblo doctrine, implicit use of Mormon approaches to communal irrigation, administrative control and adjudication by the State Water Resources Control Board, and cooperative federal–state regulation of water quality and associated patterns of diversion, treatment, discharge, and land use.

⁶⁸See Selznick, P. 1949. *TVA and the Grass Roots: A Study in the Sociology of Formal Organization* (Harper Row, New York) and Lilienthal, D. 1944. *TVA: Democracy on the March* (Quadrangle Press, Chicago).

⁶⁹This situation would be described as “institutional failure” in resource economics, meaning that the boundaries and modes of exchange do not permit exchange that will overcome the disparity between those who cause and those who absorb the consequences of actions. See Chapter 19 (‘Water Allocation Alternatives’) and Chapter 20 (“Synthesis”) for a discussion of analogous circumstances within the Project.

Furthermore, the diversion of the Klamath River's main tributary, the Trinity, although also a federal action, was held apart from consideration of coho salmon habitat. In these circumstances, common cause between the people of the Project and those most affected by the Trinity diversion, e.g., the Hupa and Yurok tribes, might have been expected. As another example, the federal government might have felt that the costs of effective interagency coordination were justified by the public benefits of endangered species protection. In this case, it might have undertaken an approach similar to its efforts in the formation of CALFED under similar circumstances. Such actions did not occur, however, so the asymmetry between responsibility and capacity became a fundamental source of the strength of the ESA in the Basin.

Asymmetric patterns of responsibility and capacity exist elsewhere, and various institutional relationships have developed to compensate for them. We offer four examples, selected from far and wide for the clarity of their lessons about the relative distributions of power and authority. In the first, the dominant power is concentrated in the river delta (much as it once was concentrated in the Upper Klamath Basin), but it has gradually expanded its influence upstream and into the upland areas of the basin. The other three examples demonstrate organizational responses to basin relations in which the dominant power is located in the midreaches and upland sources of rivers. In these examples, as in the TVA case, national intervention has been required in order to achieve basinwide management of basinwide processes.

CALFED—California

CALFED has been discussed above. Here we return to it briefly as an example of a system built on delta-centered power. Agricultural, environmental, and urban interests had converged over time in response to the shared importance of the delta as the distributive core of California water. Catalyzed by impending applications of the ESA to delta species, CALFED gradually expanded its coordination, cooperation, and finance upstream from its core.

It now involves, for example, increasing commitments to watershed restoration. At some future time, if the Klamath Basin is a useful comparison, CALFED's capacity no longer will suffice for the new constituencies and issues its authority comes to incorporate. In response, the organization likely will be transformed or replaced, or its functions may become more limited and specialized.

The Ganges-Brahmaputra Basin— India, Nepal, and Bangladesh

The Ganges-Brahmaputra Basin⁷⁰ contains almost half a billion people in three nations—Nepal in the headwaters, India in the midreach, and Bangladesh in the delta. Although the authorities of the three nations are equal—all have one vote in the United Nations, for example—India has the preponderant share of population, income, and financial and technical capacity. In this context, India has no motivation to enter into a basin arrangement in which all three parties have equal voice. Instead, cooperative arrangements have developed primarily through a triad of bilateral relations.

One side of the triad links upland Nepal and delta Bangladesh, joined by their need to influence midreach India's strategies of water storage, distribution, and use. For example, Nepal and Bangladesh cooperate in pushing for Indian reservoir storage in Nepal, with payment to Nepal and sufficient flows for Bangladesh in its dry season to satisfy ecological needs and compelling economic requirements. India and Bangladesh negotiate directly over the level and timing of transboundary flows of the Ganges and potential Ganges augmentations in India through diversions of the Brahmaputra River. Nepal and India negotiate on a basin-by-basin approach with respect to shares of political and financial entitlement and responsibility in cooperative projects. On a basinwide scale, consultative expertise, coordinated scientific investigations,

⁷⁰See Rose, L., J. Romm, and B. Crow. 1997. *Regional Arrangements for Environmental Security and Sustainable Development in the Ganges-Brahmaputra Basin* (United Nations Development Programme, New York).

political and technical arenas for shared problem identification, and cooperative pursuit of financing are concentrated in various institutes, associations, and networks. The result is a loose fabric for addressing needs shared by all three nations.

The Mekong River—Southeast Asia

The Mekong River offers a different example. There, China is building a series of dams in the upper reaches of the river, and downstream nations—Laos, Thailand, Cambodia, and Vietnam—fear flows in their rivers will be disrupted.⁷¹ The question is how the downstream riparian nations, currently organized in the Mekong Commission, can encourage China to assume responsibility for, and favorably modify, its downstream impacts.

One organizational option is to include China in a Commission that coordinates and finances infrastructure improvements throughout the Basin, as well as facilitating exchanges among nations to balance the benefits of river modifications. Another option may be to acknowledge the unequal distribution of power (capacity) among the nations and seek a bilateral relationship between the current Mekong Commission nations and China under loose mediation and technical support of the United Nations or another intermediary.

The Lo and Da rivers—Vietnam

When Vietnam shifted from a command-and-control economic and political system to a privatized and decentralized approach in 1989, basinwide authorities for the Lo and Da tributaries to the Red River were deemphasized and dismantled, and their responsibilities for water allocation and flood control were devolved to local units.⁷² At the same time, the privatization of capital markets drained public investment from these localities. The result was a decline in the control and security of water flows, contraction of irrigation systems, intensification of agriculture on lands with secure access to water, movement of poorer farmers into the hills to cultivate rainfed crops, forest decline, and a shift

in activities in increasingly flooded localities toward fisheries or employment outside the region.

Responding to these consequences over the past 5 years, districts and provinces have gradually increased their efforts to reestablish the fundamentals of coordination and investment—through cooperative activities among localities as well as among groups with specialized expertise at higher levels of governance. The national government has created specialized agency programs in land and forest management as well as low-interest loans and grants for public needs. Regaining the capacity for effective water control has required strengthened convergence of power and responsibility at higher levels of governance.

The above examples illustrate principles of institutional basin relationships with respect to different underlying distributions of capacity and control. Specifically, there is a need for a relative fit between the distributions of capacity and responsibility—or power and authority—among sovereigns, jurisdictions, and interests, and for modes of cooperation and exchange that reduce disparities for the sake of the common good. These examples suggest considerations for development of capacities for cohesion and coordination in the Klamath Basin, in circumstances where existing authorities reflect unbalanced strengths among sovereigns, jurisdictions, and interest groups.

⁷¹Romm, J. 2003 (forthcoming). "The Mekong River." In *The Encyclopedia of Environmental History* (Routledge, New York).

⁷²Romm, J. and D.T. Sy. 1996. "The impacts of economic liberalization on the people and environment of Lap Thach District." Pages 73–110 in L.T. Cuc, A.T. Rambo, K. Fahrney, T.D. Vien, J. Romm, and D.T. Sy, eds. *Red Books, Green Hills: The Impact of Economic Reform on Restoration Ecology in the Midlands of Northern Vietnam* (East–West Center, Honolulu).

Strategies for change

What are the requirements of an effective institutional strategy to reduce the chance of future water allocation shocks in the Klamath Basin? We suggest several fundamentals that derive from the principles of a fit between power and authority and of cooperation and exchange as means to resolve disparities:

- Sufficient commitment of federal authority and resources to overcome the disparate directions of federal agencies and to mediate among the interests of Oregon, California, and the tribes

The clashing missions of federal agencies in the Klamath Basin have weakened the federal government's ability to play a constructive role. The BOR, USFWS, NMFS, and Bureau of Indian Affairs, for example, are guided by vastly different missions that often lead them toward conflicting priorities among uses of water. As each agency works to fulfill the purposes for which it was created, those purposes may come into direct conflict, as they did in 2001. A constructive role for federal agencies would include interagency coordination, as well as oversight and funding of scientific and technical studies needed as a basis for equitable water allocation.

Currently, the federal commitment is weak in relation to the Basin's complexity and fragmentation. Some of the problems are legal and procedural. Others arise from the fragmentation of political constituencies and the absence of a common Klamath Basin voice. Still others arise from federal reluctance to engage state and tribal water interests in a basin with multiple states and tribes, except in specific instances of public trust responsibility, such as application of the ESA.

- Acknowledgment, respect, and support for tribal rights

Although senior right holders in the Klamath Basin, the tribes continue to be treated as residuals in Oregon and California water allocation processes, implying that they get what is "left over" after other needs are met. Diversions of the Trinity and the Eel to other basins, for example, despite dramatic impacts on tribal livelihoods, continue to face state and federal reluctance to acknowledge tribal claims and fulfill legal obligations for water. States generally treat tribal claims as those of weak interest groups rather than of holders of treaty-based sovereign rights that establish seniority. This is a permanent call for trouble because it denies normal access to process and encourages extra-process strategies such as litigation and federal intervention. Although coded in terms of the Endangered Species Act, tribal claims form the subliminal bass beat in the Klamath Basin. The claims are strong and strengthening, and continuing to deny them perpetuates conflicts.

- Recognition of tribes as sovereigns as well as water claimants

The roles of the tribes as sovereigns and as water claimants too often are confused. The former locates the tribes in relation to the federal and state governments. The latter locates them in relation to agricultural, environmental, urban, commercial fishing, and forestry interests. The two roles require seats in very different councils, one for basin governance, the other for resolution of competing water needs.

- A governing principle of adaptive water allocation in times of scarcity

The absoluteness of agricultural water expectations in the Upper Klamath Basin reflects a sense of entitlement, based on long-standing water use contracts, and a social dominance of agriculture that no

longer exists in the Basin. Other basins have faced this situation and have recognized that water allocations to one party must take into account the needs of others within the limits of available supply. This type of allocation is termed “correlative.” A correlative approach to resource allocation requires institutions that support exchanges of water and accommodate all interests as much as possible in times of stress. A purely competitive approach is not a viable stance in a context of interdependence and growing equality among interests.

An effective framework for resolving water allocation issues in the Basin would seem to require several mechanisms for cooperation and exchange, each with its own critical functions:

- A council of federal, state, and tribal governments to deal with broad policy and jurisdictional issues
- A subordinate mechanism for coordination among agencies
- A forum for negotiation, exchange, and cooperation among agricultural, tribal, environmental, urban, and other local interests as a way to broaden engagement in and knowledge of the problems of the entire Basin

The current growth of subbasin watershed groups and basinwide interest groups—environmental, tribal, and agricultural—is a crucial source of energy and capacity. Relations between the BOR, NMFS, and USFWS, forged in the crucible of intense controversy, also may offer opportunities for more systematic cooperation. The sustained engagement of Oregon State University and the University of California could provide research, education, facilitation, and other contributions to stronger institutional relationships in the Basin.

Conclusions

The 2001 water allocation decision has been argued in terms of environment versus agriculture, or as an ESA issue. In reality, however, it is an artifact of two specific features of the Basin: (1) deep social and political divides that have eroded possibilities for conciliation and control, and (2) an increasingly unbalanced distribution of capacity and responsibility between the structure of basin water control and the social scope of its influence. Fragmentation and concentrated authority have been indulged for so long that it is impossible to avoid wreaking havoc on one interest or another. The costs are huge. The problem is not caused by those whose interests are in dispute, but by a broader institutional incapacity to create relationships that achieve equitable allocations in scarce times.

Elsewhere, effective relations have had the capacity to transform the impacts of the ESA so as to achieve relatively equitable, viable, and sustainable changes in unique local and regional circumstances. In the Klamath Basin, on the other hand, weak relations—among federal, state, and tribal governments; between states; among federal agencies; and among interest groups—defaulted a controlling power to the ESA, as it had to the Reclamation Act a century ago. The ESA offers the sole source of clear coordination in the Basin at this time.

In our exploration, we have concluded that the Klamath crisis emerged from the relationship between a strong and precise federal law and generally unformed capacities within the Basin to shape the law’s application and influence. Absent a clear, shared vision among the Basin’s various governments, agencies, and communities, the ESA gained a degree of control over water allocation that had been avoided elsewhere. In effect, issues that pervade the full history of the United States converged in one time and place, as they had at other times in the Klamath Basin, to bring into question whole sets of assumptions upon which the nation has depended.

The federal government is one source of the difficulty. It has yet to reconcile the divergent directions among its various agencies. Nor has it sought methods of coordination in the Klamath Basin that make sense in view of the shift in power toward specialized agencies and away from the territorial agencies with which resource-dependent regions are identified. The federal government also chose not to use its capacities to avoid the dire outcomes of the 2001 decision, either by court appeal or conciliation. The lack of a common voice among Basin interests may have discouraged the kinds of Administration initiatives that, by appeals of court decisions, subsidy of conciliation efforts, and delays for scientific review, have helped to achieve resolutions elsewhere.

A second source of difficulty is the states' tendency to treat the tribes, the senior right holders, as residual claimants. Tribal claims to water, based on treaty assurances and upheld by court rulings, are a crucial component of any water allocation solution in the Basin.

As a result of these factors, and despite its size, the Klamath Basin has been kept at the margins of state and federal institutions. It has remained insulated as other basins have adapted to similar stresses. One consequence is that, until now, it has not influenced broader discussions of public policy and has become an extreme case in the outcomes of policy application. The 2001 experience has provided lessons about policy flaws, particularly the risks of absolutes of any kind. At the same time, it demonstrated the need and opportunity for a basinwide institutional fabric consistent with the intensity and range of interdependent interests in the Basin.

Does the 2001 decision affect public policy more generally? Despite the unique circumstances of the Klamath Basin, the events of 2001 raise issues that have meaning for the nation as a whole. These issues indicate ways in which the 2001 decision stretched the range of previously

accepted outcomes of the ESA, and they lead to important questions. For example:

- To what extent should one group bear the burden of satisfying a public purpose?

Virtually all takings cases have involved the loss of potential future property values as a consequence of public actions. What is distinctive about the irrigation curtailment on the Klamath Reclamation Project is that the costs were real and immediate rather than potential or speculative. Klamath farmers, farmworkers, and communities absorbed the full brunt of species protection in 2001. In the past, the tribes bore the full brunt of laws such as the Reclamation and Termination acts, which were thought to satisfy the public interest of their day. Such imbalances cause crises.

As our analysis suggests, the problem is partly structural, arising from the absence of means to share burdens widely, whether within the basin or among national citizens. In this absence, the problem is confined to the courts, which seem to face a distinctive challenge in the Klamath Basin with regard to the “whatever-the-cost” standard and the equitable distribution of costs between Basin agriculturalists and a more general public.

- How do we weigh scientific uncertainty against socioeconomic burden?

In accordance with law, the 2001 decision was based on the best science available to the agencies required to make the decision. The science provided a basis for projecting the effects of water storage and flow regimes on two endangered and one threatened fish species (see Chapter 5, “Suckers,” and Chapter 6, “Coho Salmon”). As with all science, the projections were surrounded by uncertainty about the validity of the models used and the responses of natural systems to unknowable future circumstances. The scientific uncertainty of the projected

biological outcomes can be compared with the real and immediate impacts on Upper Basin farmers, farmworkers, and farm communities. This question is not a matter of simple balance—the loss of an endangered species is forever, while the loss of agricultural structure and function depends on the sufficiency of compensating actions. Such a comparison does, however, point to the need for opportunities to consider the relative certainties of projected scientific and socioeconomic consequences, and to strengthen safeguards against irrevocable negative outcomes on all sides. For example, irrevocable or immediate outcomes might enjoy stronger standing and safeguards than transitory or prospective losses. Thus, less scientific certainty might be required for decisions that threaten irrevocable losses than for those that can be repaired; more certainty might be required when real and immediate, rather than prospective, losses are involved.

- Do current ESA environmental review procedures suffice for decisions that must be made on the basis of time-bound hydrologic information?

Many observers have criticized the BOR for not undertaking ESA consultation in a timely fashion in 2001, or for not developing a viable long-term strategy in the previous decade. However, the procedural path the BOR had to follow (ESA consultation with the USFWS and the NMFS) did not mesh with the narrow window for obtaining essential hydrologic information. Nor did it accommodate the requirements of biological science for long-term research or the absence of an institutional way to resolve conflicts. The Section 7 ESA consultation process is a source of rigidity amid dynamic natural and social processes that are largely beyond administrative control. Alternative procedural mechanisms that mesh better with the realities of specific problems and places might be considered.

The search for answers to these difficult questions in the Klamath Basin could make significant contributions to sustainable environmental, economic, and social development not only in the Basin, but also throughout the nation.

Acknowledgments

We wish to acknowledge and extend our sincere appreciation to the Klamath Water Users Association; the Klamath, Yurok, and Karuk tribes; the University of California Intermountain Research and Extension Center; the Oregon State University Klamath Experiment Station; the Klamath Basin farm community; Dr. Fred Obermiller; Reed Marbut; and all of our colleagues involved in this project. We extend special thanks to Dr. Emery Castle for his wisdom and support, to Professor Joseph Sax for his insightful review and comments, and to the project editor, Teresa Welch, for her perceptiveness, tireless efforts, and patience in the preparation of this paper.

References

- Boaz, F. and J.W. Powell. 1966. *Handbook of American Indian Languages (1911) and Indian Linguistic Families of American North of Mexico (1891)* (University of Nebraska Press, Lincoln).
- CALFED Bay-Delta Program. 2000. *California's Water Future: A Framework for Action* (Sacramento).
- CALFED Bay-Delta Program. 2001. *Annual Report, 2001, California Water* (Sacramento).
- Connick, S. 2002 (forthcoming). "The Use of Collaborative Processes for Making Water Policy in California: The San Francisco Estuary Project, the CALFED Bay-Delta Program, and the Sacramento Water Forum" (Ph.D. dissertation, University of California, Berkeley, Department of Environmental Science, Policy, and Management).

- Connick, S. and J. Innes. 2002 (forthcoming). "Outcomes of collaborative water policy making: Applying complexity thinking to evaluation." *The Journal of Environmental Planning and Management*.
- Coward, E.W., Jr., ed. 1980. *Irrigation and Agricultural Development in Asia: Perspectives from the Social Sciences* (Cornell University Press, Ithaca, NY).
- Feldman, S.M. 1994. "The Supreme Court's new sovereign immunity doctrine and the McCarran Amendment: Toward ending state adjudication of Indian water rights." *The Harvard Environmental Law Review* (Summer):433–488.
- Graf, M. 1995. "Using the public trust doctrine to achieve proportionate reductions of water diversions from the Delta." *The Journal of Environmental Law* 13:263.
- Heizer, R.F., ed. 1978. *Handbook of North American Indians: California* (Smithsonian Institution, Washington, DC).
- Heizer, R.F. and M.A. Whipple, eds. 1971. *The California Indians: A Source Book*, 2nd ed. (University of California Press, Berkeley).
- Joseph, A. 1968. *The Indian Heritage of America* (Houghton Mifflin, Boston).
- Kaan, J. 2001. Testimony before the National Research Council, November 6, 2001, Sacramento, CA (consulting aquatic ecologist with Aquatic Ecosystems Sciences, LLC).
- Kahrl, W.L. 1979. *The California Water Atlas* (The Governor's Office of Planning and Research, Sacramento).
- Kelley, R.L. 1989. *Battling the Inland Sea: American Political Culture, Public Policy, and the Sacramento Valley, 1850–1986* (University of California Press, Berkeley).
- Kenney, D.S. and W.B. Lord. 1999. *Analysis of Institutional Innovation in the Natural Resources and Environmental Realm: The Emergence of Alternative Problem Solving Strategies in the American West* (Research Report RR-21, Natural Resources Law Center, University of Colorado School of Law). <http://www.Colorado.edu/Law/NRLC/>
- Klamath River Basin Compact between the states of Oregon and California, consented to by the United States Congress. 1957.
- Krutilla, J.V. and O. Eckstein. 1958. *Multiple Purpose River Development: Studies in Applied Economic Analysis* (Johns Hopkins Press, Baltimore).
- Langridge, R. 2002 (forthcoming). "Changing legal regimes and the allocation of water between two California rivers." *Natural Resources Journal*.
- Lilienthal, D. 1944. *TVA: Democracy on the March* (Quadrangle Press, Chicago).
- Maass, A. et al. 1959. *Area and Power: A Theory of Local Government* (The Free Press, Glencoe, IL).
- Powers, S. 1877 (reprinted 1976). *Tribes of California* (University of California Press, Berkeley).
- Prucha, F.P. 1984. *The Great Father* (University of Nebraska Press, Lincoln).
- Prucha, F.P. 1990. *Documents: United States Indian Policy* (University of Nebraska Press, Lincoln).
- Romm, J. 1994. "Watersheds and social systems: Linking causes and consequences of watershed activities." In D. Erman, ed. *Obstacles to Watershed Management* (Water Resources Center Report No. 81, University of California, Davis).
- Romm, J. 2000. "California forest policy must bend to the new social order." *California Agriculture* (March):35–42.

- Romm, J. 2003 (forthcoming). "The Mekong River." In *The Encyclopedia of World Environmental History* (Routledge, New York).
- Romm, J. and D.T. Sy. 1996. "The impacts of economic liberalization on the people and environment of Lap Thach District." Pages 73–110 in L.T. Cuc, A.T. Rambo, K. Fahrney, T.D. Vien, J. Romm, and D.T. Sy, eds. *Red Books, Green Hills: The Impact of Economic Reform on Restoration Ecology in the Midlands of Northern Vietnam* (East–West Center, Honolulu).
- Rose, L., J. Romm, and B. Crow. 1997. *Regional Arrangements for Environmental Security and Sustainable Development in the Ganges-Brahmaputra Basin* (United Nations Development Programme, New York).
- Ryan, M. 2001. Presentation of the Klamath Project before the National Research Council, November 6, 2001, Sacramento, CA (acting area manager, Klamath Project Region).
- Sax, J. 1993. "Property rights and the economy of nature—Understanding *Lucas v. South Carolina Coastal Council*." *Stanford Law Review* Vol. 45, No. 5 (May):1433–1455.
- Sax, J., R. Abrams, and B. Thompson, Jr. 1991. *Legal Control of Water Resources* (American Casebook Series, West Publishing, St. Paul, MN).
- Selznick, P. 1949. *TVA and the Grass Roots: A Study in the Sociology of Formal Organization* (Harper Row, New York).
- Sly, P.W. 1988. *Reserved Water Rights Settlement Manual* (Island Press, Washington, DC).
- Solicitor Opinion. 1993. Memorandum from the Solicitor to the Secretary of Interior: Fishing Rights of the Yurok and Hupa Valley Tribes (M-36979, October 4, 1993). In *Klamath Project Historic Operation* (U.S. Department of the Interior).
- Thorsen, J. 1986. "Resolving conflicts through intergovernmental agreements: The pros and cons of negotiated settlements." In C. Miklas and S. Shupe, eds. *Indian Water* (American Indian Resource Institute, Oakland, CA).
- Todd, R. 2001 (Oregon State University Extension Service, Klamath Falls, OR, personal communication).
- U.S. Bureau of Reclamation. 2001. *Klamath Project, California and Oregon*. Available at <http://dataweb.usbr.gov/html/klamath.html#development>
- Walton, J. 1992. *Western Times and Water Wars: State, Culture and Rebellion in California* (University of California Press, Berkeley).