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DIVIDING WESTERN WATERS: A CENTURY OF ADJUDICATING RIVERS AND STREAMS, PART II†

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 For Part I, see 8 U. DENV. WATER L. REV. 355 (Spring 2005).

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> Jarndyce and Jarndyce drones on. This scarecrow of a suit has, in course of time, become so complicated, that no man alive knows what it means. The parties to it understand it least; but it has been observed that no two Chancery lawyers can talk about it for five minutes, without coming to a total disagreement as to all the premises. Innumerable children have been born into the cause; . . . innumerable old people have died out of it. Scores of persons have deliriously found themselves made parties in [the suit], without knowing how or why; . . . but Jarndyce and Jarndyce still drags its dreary length before the Court, perennially hopeless.[1]

In May 1996, Judge Allen Minker had presided over Arizona's Little Colorado River adjudication for more than ten years. Clearly frustrated with the glacial pace of this general stream adjudication, Minker commented to other judges:

> Sometimes I feel like the French attempting to build the Panama Canal in the 1880s. Like them, I know it is a good idea. Like them, I

1. CHARLES DICKENS, BLEAK HOUSE 18 (Heritage Press Ed. 1942) (1853).

> know it will eventually be completed. But after a decade of hard work by everyone involved, I look over my shoulder and still see the Caribbean Sea. Perhaps, like the French, it's time for me to withdraw and let someone else come along in the future to complete the task; someone with more insight, more resources, and more abilities.

Charles Dickens vividly described the despair brought on by protracted litigation in the 1850s, pondering a languishing probate case, *Jarndyce v. Jarndyce*, in his novel, *Bleak House*. The same gloomy assessment is often shared today by judges (as exemplified by Judge Minker's remarks), water users, attorneys, and legislators who ponder the tediousness of comprehensive general stream adjudications underway in many western states. These water rights adjudications in major river basins typically involve tens of thousands of parties, consume tens of millions of dollars in public and private funds, sometimes irreparably divide communities, and often offer no assurance that they will ever end.

In Part I of this two-part series, we explored land, water, and Indian policies in the American West before the advent of general stream adjudications.[2] We reviewed the development of various methods of resolving water disputes that form the genealogy of modern water adjudications. We closed Part I by discussing how major post-World War II trends—regional growth, state efforts to strengthen their control over water resources, and renewed recognition of Indian reserved water rights—converged in the United States Supreme Court's famous 1963 decision in *Arizona v. California* that, in addition to upholding a congressional allocation of Colorado River waters, signaled that Indian water rights would evermore be an integral component of western water.[3]

In Part II, we review the commencement of modern general stream adjudications and their present status, as well as the various structures and procedures used by states to adjudicate rights. We assess the effectiveness of adjudications and discuss some alternatives. We close by offering some broader conclusions about the significance of general stream adjudications, which for several decades have commanded so many resources and so much attention.

I. COMMENCEMENT OF MAJOR GENERAL STREAM ADJUDICATIONS

In January 1977, the Wyoming legislature, having been in session that year for mere days, passed a one-section statute authorizing the state attorney general to bring a general stream adjudication for the

2. *See* John E. Thorson et al., *Dividing Western Waters: A Century of Adjudicating Rivers and Streams*, 8 U. DENV. WATER L. REV. 355 (2005).

3. *Id.* at 460.

purpose of determining the water rights of all persons in the state.[4] The enactment differed from existing legislation in that it authorized a judicial proceeding rather than an administrative adjudication by the state board of control. It thus deviated from a procedure that had been faithfully followed since Elwood Mead's pioneering efforts in the 1880s.[5] In truth, the legislature really had only one river system in mind: the Big Horn River in the northwestern part of the state.

The ink of Governor Ed Herschler's signature on the bill was hardly dry when the state attorney general filed a water rights proceeding in state district court.[6] The adjudication of the Big Horn River system thus commenced on January 24, 1977.[7] The adjudication included state, tribal, and federal parties. By 1995, the State of Wyoming had incurred more than $14 million in attorneys' fees.[8] The litigation has been contentious, pitting the state against the Shoshone and Arapaho tribes of the Wind River Reservation.[9] It has also been lengthy and indeed, continues to this day.

Wyoming was not alone among the western states in its sudden launch of massive water rights litigation. During the 1970s, other states instigated similar cases, including Arizona,[10] Colorado,[11] Montana,[12] New Mexico,[13] and Oregon.[14] Washington[15] and Idaho[16] followed in the 1980s. No longer would general stream adjudications assume a relatively modest scope or concern a single river. These states lost any hope of being able to confine themselves to the comparatively simple task of resolving conflicts between modest numbers of actual users, and

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4. *See* WYO. STAT. ANN. § 41-4-301 (2005).

5. ROBERT G. DUNBAR, FORGING NEW RIGHTS IN WESTERN WATERS 102, 108-09 (1983).

6. *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River System, 803 P.2d 61, 65 (Wyo. 1990).

7. *Id.*

8. Scott B. McElroy & Jeff J. Davis, *Revisiting Colorado River Water Conservation District v. United States – There Must Be a Better Way*, 27 ARIZ. ST. L.J. 597, 628 (1995).

9. 803 P.2d at 65.

10. *See* Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 557-58 (1983) (discussing Arizona's water adjudication efforts during the 1970s).

11. *See* United States v. Dist. Court in and for Water Div. No. 5, 401 U.S. 527, 528 (1971), *and* United States v. Dist. Court in and for the County of Eagle, 401 U.S. 520, 521-22 (1971) (discussing Colorado's water adjudication efforts during the 1970s).

12. *See* Arizona v. San Carlos Apache Tribe, 463 U.S. at 553-54 (discussing Montana's state water adjudication efforts during the 1970s).

13. *See* State *ex rel.* Reynolds v. Lewis, 545 P.2d 1014, 1015 (N.M. 1976).

14. *See* United States v. State of Oregon Water Res. Dep't, 774 F.Supp. 1568, 1571 (D. Or. 1991) (discussing Oregon's adjudication of the Klamath River Basin in 1975).

15. *See* Dep't of Ecology v. Acquavella, 674 P.2d 160, 161-62 (Wash. 1983) (en banc) (discussing adjudication of the Yakima River).

16. *See in re* Gen. Adjudication of Rights to the Use of Water from the Snake River Basin Water System, 764 P.2d 78, 79 (Idaho 1988).

resigned themselves to the necessity of addressing tribal and federal water rights as well.

The cases filed in the 1970s and early 1980s would be characterized by their enormous scale. They would involve entire states or river systems, include more parties, and take on a much more public character since many adjudications were mandated by state legislation. The era of modern, comprehensive general stream adjudications had begun.

A. Reasons for Comprehensive General Stream Adjudications

One wonders why western states would initiate what were predictably complicated and expensive proceedings. No single reason suffices. For most states, the explanation flows from the confluence of several important trends, including the shadow cast by federal reserved rights, which lengthened after the United State Supreme Court rendered its decision in *Arizona v. California.*[17] A host of complicated social and economic developments contributed as well, as did changes in state water management methods. Finally, almost all of the western states engaged in dogged efforts to finally realize the promise of the 1952 McCarran Amendment,[18] to restore state authority over water resources.

General stream adjudications provide a vehicle for confirming valid, existing water rights. This is an important benefit of stream adjudications, because many of the water rights in western states originated before the advent of filing systems, so proof of their extent and priority resides only in fading memories and dusty records. Stream adjudications promise an expeditious method of clarifying private appropriator's titles to water rights. The adjudication process also provides claimants with a judicial decree to document the extent and characteristics of their rights.

A related benefit of general stream adjudications is the resulting compilation of standard, centralized water use information, which is a valuable tool for water management agencies and private water users. If states are to supervise appropriations of water and monitor the ongoing diversion and distribution of water, their water management agencies need better information about water supply and demand. Such data is essential in reviewing water permit applications and undertaking long-term planning. Even Colorado, which prefers a judicial approach to water allocation, assigns its state and divisional engineers with significant water management responsibilities.[19]

In addition to quantifying private rights and centralizing claim documentation, the adjudications give the states a way to confront

17. Arizona v. California, 373 U.S. 546 (1963).
18. 43 U.S.C. § 666 (2000).
19. COLO. REV. STAT. §§ 37-80-102 to -103 (2005).

those ancient ghosts of western water law: federal reserved rights.[20] Because water need not be put to use within a definite time frame under these rights, the extent of future diversions for these reserved purposes is difficult to estimate. Thus, they constitute a potentially enormous but unquantified charge on the water resources of the West.[21] Comprehensive adjudications are one way to finally quantify these charges.

These textbook reasons tell only part of the story. While each of them had a role in prompting the advent of the comprehensive adjudication era, a complex mix of legal, social, and economic developments is more fundamentally responsible for these large water cases. This article discusses these factors below.

1. The Lengthening Shadow of Federal Reserved Water Rights

In 1908, the United States Supreme Court issued one of the most important decisions concerning tribal water rights: *Winters v. United States.*[22] The Court held that when Congress created the reservations, it intended to reserve an adequate quantity of water for accomplishing the purpose of those reservations, which generally concerns agriculture.[23] However, for fifty years thereafter the *Winters* doctrine lay almost dormant, and little progress was made toward defining exactly how much water the tribes (and, later, federal agencies) were entitled to under their reserved rights. The non-Indian water community went about its business, largely ignoring Indian water rights on federal reservations.[24]

Then, in 1963, came *Arizona v. California* – the first major recognition and enforcement of Indian water claims since *Winters.*[25] At issue in that case were congressional allocations of Colorado River water, and how much should be deducted from each state's allocation in order to accommodate federal and tribal lands in those states.[26] The United States Supreme Court defined the "practically irrigable acreage" standard, establishing it as the measure for reserved rights.[27] Accordingly,

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20. *See* Barbara A. Cosens, *The Measure of Indian Water Rights: The Arizona Homeland Standard, Gila River Adjudication,* 42 NAT. RESOURCES J. 835, 838-40 (2002) (discussing the difference between state-determined water rights and federal reserved rights).

21. *See, e.g.,* WESTERN STATES WATER COUNCIL, INDIAN WATER RIGHTS IN THE WEST 94 (1984) (estimating a total potential reserved rights claim of about 46 million acre-feet of water per year by Indian tribes in the western states).

22. 207 U.S. 564 (1908).

23. *Id.* at 577.

24. *See* ROBERT GOTTLIEB, A LIFE OF ITS OWN: THE POLITICS AND POWER OF WATER 219-20 (1988).

25. Arizona v. California, 373 U.S. 546 (1963).

26. *Id.* at 551, 595.

27. *Id.* at 601. Generally, once courts quantify reserved rights using this standard, the government cannot further expand them. In 1983, the United States Supreme

tribes were entitled to an amount of water sufficient to cultivate their practically irrigable acreage.[28]

The prospect of courts quantifying Indian water rights using the elusive "practically irrigable acreage" standard sent western irrigators and state officials into panic. Historically, the interests that wielded the most power in the West were extractive industries such as agriculture, mining and timber. These users had already brought some states to the point of over-appropriation. Not surprisingly, the extractive industries felt threatened by the assertion of Indian rights, which had very early priority dates and might be awarded in quantities potentially devastating to non-Indian users.[29]

The potential reserved right claims from federal land management agencies only compounded the threat for westerners. Indeed, at the time, westerners perceived federal agency water rights as a greater threat than tribal rights. The Public Land Law Review Commission, chaired by Colorado Congressman Wayne Aspinall, said this about reserved water rights in 1970:

> [T]he implied reservation doctrine as announced and applied in *Arizona v. California* has created many problems. Numerous unanswered questions about its scope and impact remain. The two most important questions which Congress should resolve, however, center on (1) the uncertainty which the doctrine has engendered, and (2) the equity of holders of water rights vested under state law, whose rights may be curtailed without compensation through its strict application.[30]

Beginning in 1969, the National Water Commission also examined the doctrine.[31] In a report for the Commission, Frank Trelease succinctly summarized the threat posed to the West by the reserved rights doctrine:

> The effect of the doctrine is twofold: (1) when the water is eventually put to use the right of the United States will be superior to private rights in the source of water acquired after the date of the reservation, hence such private rights may be impaired or destroyed without compensation by the exercise of the reserved right, and (2) the federal

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Court held that if a survey error or mathematical error was made in the calculation, it might warrant a change in the amount of water allocated under reserved rights, but it refused to increase the amount because some of the acreage was not originally claimed as irrigable. Arizona v. California, 460 U.S. 605, 615-16, 636 (1983).

28. Arizona v. California, 373 U.S. 546, 601 (1963).

29. *See, e.g.*, Belinda K. Orem, *Paleface, Redskin, and the Great White Chiefs in Washington: Drawing the Battle Lines Over Western Water Rights*, 17 SAN DIEGO L. REV. 449, 461-62 (1980).

30. U.S. PUB. LAND LAW REVIEW COMM'N, ONE THIRD OF THE NATION'S LAND: A REPORT TO THE PRESIDENT AND TO THE CONGRESS 146-47 (1970).

31. NAT'L WATER COMM'N, WATER POLICIES FOR THE FUTURE: FINAL REPORT TO THE PRESIDENT AND TO THE CONGRESS xi (1973).

use is not subject to state laws regulating the appropriation and use of water.[32]

In 1978 the United States General Accounting Office reported, "[u]ndetermined Federal and Indian reserved water rights in the Western States are causing great uncertainties about existing water uses and for potential water users."[33] The Western States Water Council, an organization of state engineers and water directors, noted that sixty-one percent of the total surface water in member states was derived from federal reserved lands.[34] The Council concluded that reserved water right claims "deter future water resource planning and development, and pose the threat that new federal uses will be given turn-of-the-century priorities that can take water from currently valuable uses established pursuant to state law without paying any compensation."[35]

Several United States Supreme Court decisions in the 1970s fueled the controversy concerning federal reserved water rights. The 1976 case *Cappaert v. United States* arose in Nevada between the Cappaerts, who owned a 12,000-acre cattle ranch, and the National Park Service, which administered the forty-acre Devil's Hole National Monument, two and a half miles away.[36] President Harry Truman withdrew the monument from the public domain in 1952 under the authority of the American Antiquities Act.[37] Within the limestone cavern called Devil's Hole is an underground pool, a remnant of the prehistoric Death Valley Lake system, which is home to a rare, blind species of fish called the Devil's Hole pupfish.[38] In 1968, the Cappaerts began pumping groundwater on their ranch, causing a corresponding decline in the cavern pool's water level.[39] The lowered water level exposed a spawning area, thereby reducing reproduction rates and threatening the survival of the pupfish.[40]

The United States Supreme Court sustained an injunction preventing the Cappearts from pumping at a rate that would jeopardize the fish.[41] While Congress had not explicitly reserved water for the monu-

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32. FRANK J. TRELEASE, NAT'L WATER COMM'N, LEGAL STUDY NO. 5, FEDERAL-STATE RELATIONS IN WATER LAW 109 (1971).

33. U.S. GEN. ACCOUNTING OFFICE, RESERVED WATER RIGHTS FOR FEDERAL AND INDIAN RESERVATIONS: A GROWING CONTROVERSY IN NEED OF RESOLUTION 1 (1978) [hereinafter GAO REPORT].

34. WESTERN STATES WATER COUNCIL, REPORT ON THE RESERVATION DOCTRINE PREPARED FOR THE FEDERAL-STATE WATER RIGHTS SUBCOMMITTEE 19 (1975).

35. *Id.*

36. Cappaert v. United States, 426 U.S. 128, 133 (1976).

37. *Id.* at 131; *see also* Antiquities Act, 16 U.S.C. § 431 (2000).

38. *Cappaert*, 426 U.S. at 132-133 (noting that the Devil's Hole cavern pool is the last place on earth that this particular fish species is known to exist).

39. *Id.* at 133.

40. *Id.* at 133-34.

41. *Id.* at 136-38.

ment, the Court held that such intent could be inferred, "if the previously unappropriated waters are necessary to accomplish the purposes for which the reservation was created."[42]

In response to the State of Nevada's argument (made on behalf of the Cappaerts) that the reserved rights doctrine required an equitable balancing of competing interests, the Court recalled that the *Winters* case had rejected such an approach.[43] There, the Court declined to balance the equities, even as it admitted that using some other standard could have some harsh results at times, and injure homesteaders "who had invested heavily in dams to divert the water to irrigate their land, not an unimportant interest."[44]

The Supreme Court was not about to create a situation in which reserved rights were utterly boundless. Instead, the Court limited them. The majority opinion by Chief Justice Warren Burger limited the quantity of water to "only that amount of water necessary to fulfill the purpose of the reservation, no more."[45]

The Court stopped short of declaring that federal reserved rights extended to groundwater.[46] Nonetheless, the *Cappaert* decision had the potential to expand the federal government's ability to make reserved rights claims. As one set of commentators observed:

> Even though it skirted the groundwater issue, the Supreme Court did extend significantly the reserved rights doctrine . . . by finding water reserved for an *in situ* use, one that leaves water in place. This aspect of *Cappaert* created the possibility that widespread *in situ* uses on federal lands withdrawn for various purposes could greatly reduce the amount of water available for appropriation under state law.[47]

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42. *Id.* at 139.

43. *Id.* at 138-39.

44. *Id.* at 139.

45. *Id.* at 141.

46. Nevada missed the mark when it argued that the reserved rights doctrine was only applicable to surface water, and did not extend to groundwater. Because the Cappaerts were pumping groundwater, the State argued, they could not possibly have infringed on federal reserved rights. The Court was not persuaded. It first noted that the water supplying both the pool and the Cappaert's well came out of the same aquifer. The Court pointed out the integral relationship between elements of the hydrologic cycle, and decided to limit groundwater pumping that jeopardized that surface source. *Id.* at 142-43. For other views on whether the federal reserved rights doctrine extends to groundwater, *see* Tweedy v. Texas Co., 286 F. Supp. 383, 386 (D. Mont. 1968) (recognizing reserved rights in groundwater); Gen. Adjudication of All Rights to Use Water in the Gila River System and Source, 989 P.2d 739, 745-47 (Ariz. 1999) (en banc) (recognizing reserved rights in groundwater if necessary to accomplish purposes of reservation); Gen. Adjudication of All Rights to Use Water in the Big Horn River System, 753 P.2d 76, 99-100 (Wyo. 1988) (rejecting reserved rights in groundwater).

47. *See* JOSEPH L. SAX ET. AL., LEGAL CONTROL OF WATER RESOURCES: CASES & MATERIALS 813 (2d ed. 1991).

The United States Forest Service was claiming just such *in situ* uses in New Mexico's adjudications.[48] In creating the national forests, the United States argued that Congress intended to reserve adequate instream flows to accomplish the aesthetic, recreational, and fish preservation purposes of the parks, and it followed logically that the United States possesses reserved rights sufficient to meet those needs.[49] The federal government based this assertion on an expansive reading of the act that created the national forest system.[50]

The United States put this assertion to the test in a case arising out of the state court adjudication of the Rio Mimbres in southwestern New Mexico.[51] Both the trial court and the New Mexico Supreme Court denied this expansive reading, and the United States Supreme Court agreed in *United States v. New Mexico*, a case commonly known as *Kleppe*.[52] There, the Court distinguished between the primary and secondary purposes of a federal land withdrawal, saying that only the minimum amount of water necessary for the primary purposes could be reserved; that is, the quantity without which the purposes of the reservation would be entirely defeated.[53]

As for exactly what those primary purposes were, the Court acknowledged only two. The Court pointed to the Congressional Record, which stated that the Organic Administration Act intended for the national forests: "'[t]o conserve the water flows, and to furnish a continuous supply of timber for the people.'"[54] As for any other purpose, the Court noted, "[n]ational forests were not to be reserved for aesthetic, environmental, recreational, or wildlife-preservation purposes."[55] Thus, state law and not federal reserved water rights would govern water for these purposes and others such as stock watering.[56]

While the *Kleppe* decision was favorable for western states, it did little to relieve the anxiety of state officials who feared federal encroachment on state control of water. In 1978, perhaps to allay such fears, President Jimmy Carter appointed a federal reserved water rights task force to study the potential sweep of the reserved rights doctrine in the West.[57] The resulting figures were staggering and exacerbated the states' worst fears.

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48. Mimbres Valley Irrigation Co. v. Salopek, 564 P.2d 615, 615-16 (N.M. 1977).

49. *Id.* at 617.

50. Organic Administration Act, 16 U.S.C. § 475 (2000) ("No public forest reservation shall be established, except to improve and protect the forest within the reservation or for the purpose of securing favorable conditions of water flows . . .").

51. *Mimbres Valley*, 564 P.2d at 617.

52. United States v. New Mexico (*Kleppe*), 438 U.S. 696, 718 (1978).

53. *Id.* at 716 n.23.

54. *Id.* at 707-08, (quoting 30 CONG. REC. 967 (1897)).

55. 438 U.S. at 708.

56. *Id.* at 716.

57. REPORT OF THE TASK FORCE ON NON-INDIAN FEDERAL WATER RIGHTS: PRESIDENT'S WATER POLICY IMPLEMENTATION 6 (1980).

The task force identified a maximum of 187 million acres in eleven western states that might carry federal reserved water rights, or approximately fifty-two percent of all federal lands in those states.[58] Table 1 shows a breakdown of possible reserved water rights by state.

Table 1: Estimated Acreage Bearing Reserved Rights, by State[59]

State	Total Acreage Owned by the Federal Government (Millions of Acres)	Federal Acreage Which May Carry Reserved Water Rights (Millions of Acres)	Percentage
Arizona	31.1	19.2	61.8
California	45.2	28.2	62.3
Colorado	23.9	16.4	68.7
Idaho	33.7	21.4	63.5
Montana	27.6	19.0	68.9
Nevada	60.8	13.8	22.7
New Mexico	26.1	11.8	45.5
Oregon	32.3	17.9	55.5
Utah	34.8	13.2	38.0
Washington	12.5	10.8	86.1
Wyoming	29.8	15.1	50.6
Totals	358.3	187.2	52.2

Concerning Indian water rights, a previous Interior Department's study had concluded, "In some states where industries and firms have utilized water supplies which are in conflict with Indian water claims, water reallocations to Indians could occur."[60] As of August 1978, the General Accounting Office identified forty-four pending court cases concerning federal and Indian reserved water rights.[61] The General Accounting office estimated that it would cost $225 million to determine federal agency reserved rights in seventeen western states, including Alaska.[62]

The Carter Administration's interest in reserved rights led some federal agencies to inventory their claims. Department of the Interior Solicitor Leo Krulitz undertook a comprehensive legal evaluation of

58. GAO REPORT, supra note 33, at 9.
59. *Id.*
60. U.S. DEPT. OF INTERIOR, WESTWIDE STUDY REPORT ON CRITICAL WATER PROBLEMS FACING THE ELEVEN WESTERN STATES 64 (April 1975).
61. GAO REPORT, *supra* note 33, at 30.
62. *Id.* at 11-12.

reserved rights.[63] The "Krulitz Opinion," as the report came to be called, evaluated rights which the National Park Service ("NPS"), Fish and Wildlife Service ("FWS"), Bureau of Reclamation ("BOR"), and Bureau of Land Management ("BLM") could assert on lands administered by those agencies.[64]

The Krulitz Opinion discussed the reserved rights doctrine and other methods (such as condemnation) by which federal agencies may establish water rights.[65] It also articulated the "nonreserved" water rights doctrine, which appears designed to provide a legal basis for asserting federal water rights for those secondary uses not "watered" by the Supreme Court in its *Kleppe* decision.[66] The opinion could also be used as the basis to secure water for lands never specifically withdrawn by Congress, such as the remaining public domain now administered by the Bureau of Land Management under the Federal Land Policy and Management Act of 1976.[67] The infamous "Krulitz Opinion" on "nonreserved" federal water rights was an exhaustive fifty-six page legal memorandum. It ranked second only to President Carter's "hit list" of unnecessary water projects in its propensity to upset the western states' water establishment.

Other regional developments in the 1970s heightened the perceived pressure on western water sources. A period of rapidly expanding federal energy development and defense program expansion[68] suggested to state leaders that water needs of federal land holdings could only grow.

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63. *See generally,* Fed. Water Rights of the Nat'l Park Serv., Fish & Wildlife Serv., Bureau of Reclamation, and the Bureau of Land Mgmt., 86 Interior Dec. 553 (1979) [hereinafter Krulitz Opinion].

64. *Id.*

65. *Id.* at 571-78.

66. "This appropriation of water—its actual application to a federal use—is necessary to carry out the secondary uses for which many federal reservations are administered. It is also essential for the management and administration of non-reserved federal lands." *Id.* at 574. The Krulitz Opinion was soon overturned by the Coldiron Decision issued by the Reagan Administration. NONRESERVED WATER RIGHTS – U.S. COMPLIANCE WITH STATE LAW, 88 Interior Dec. 1055, 1055-56 (1981). The U.S. Department of Justice's Office of Legal Counsel concurred, indicating that the question was "therefore, . . . not generally whether Congress has the power to establish federal rights to unappropriated water, but whether it has exercised that power." Federal "Non-Reserved" Water Rights, 6 Op. Off. Legal Counsel 328, 362 (1982).

67. 43 U.S.C. §§ 1701-1785 (2000).

68. The Carter Administration's Defense Department proposed a huge "MX" missile development for the Nevada-Utah desert. While the MX missile did not present a huge thirst for water, the project alarmed many westerners because of the thousands of square miles of land that would be reserved for this cold war project. *See* John D. O'Connell, *Constructive Conquest in the Courts: A Legal History of the Western Shoshone Lands Struggle – 1861 to 1991,* 42 NAT. RESOURCES J. 765, 788-89 (2002).

2. The Reemergence of Tribal Self-Government

The emergence of federal reserved rights coincided with an increased desire of many Indian tribes to assert sovereignty and protect tribal assets such as land, water, and fish. Impatient after seventy-five years of haphazard development of their *Winters* water rights, tribes began developing strategies for securing recognition of these rights. Organizations such as the Native American Rights Fund and the American Indian Lawyer Training Program aided tribes through training and legal representation.

The United States and some of these tribes filed federal court lawsuits in the 1960s and 1970s, seeking either to prevent interference with tribal water rights or to prompt the courts to adjudicate neighboring water rights. The message was clear that western Indian tribes would become major players in the allocation and management of western water.

The proceedings in *Arizona v. California* also marked the assertion of Indian water claims, and brought real meaning to the *Winters* doctrine.[69] Though the claims asserted would not come to fruition for eleven more years, *Arizona v. California* marked a resurgence of Indian rights.

In 1960, the country elected a new president with an administration that held a decidedly different attitude toward the concerns of Native Americans and other minorities. President John F. Kennedy's election reinforced Indian activism, changing federal Indian policy from termination to self-determination.[70]

The tribes' interest in their water rights was only one manifestation of a widespread movement among Indian people to assert tribal sovereignty and reestablish or strengthen their tribal governments. The termination period did not last as long as the allotment period.[71] By 1955, public outcry and negative press coverage hastened the era's end.[72] In addition, mindful of how helpful the Collier programs[73] had been, Indian officials formed their own advocacy groups, such as the

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69. 373 U.S. 546, 600 (1963).

70. *See* CHARLES F. WILKINSON, BLOOD STRUGGLE: THE RISE OF MODERN INDIAN NATIONS 191 (2005) (noting that, although "[t]he term 'self-determination' came into general use only in the 1970s, . . . Indian people had begun practicing it after [Kennedy's] Office of Economic Opportunity programs started in 1964").

71. *Id.* at 15, 56-58 (indicating that the allotment period lasted from 1887 to 1953, while the termination period lasted from the early 1950s through the 1960s).

72. *Id.* at 105-06.

73. After President Franklin Roosevelt appointed John Collier as Commissioner of Indian Affairs in 1933, Collier encouraged Indian tribes to adopt "anglo-style constitutions and government councils." The Collier Program, based on the Indian Reorganization era, "laid the foundation for the resurgence of tribalism that began in about 1960." Charles F. Wilkinson, *The Law of the American West: A Critical Bibliography of the Nonlegal Sources*, 85 MICH. L. REV. 953, 977-78 (1987).

National Congress of American Indians ("NCAI"), the Indian Rights Association, and the Association on American Indian Affairs ("AAIA"). These groups helped inform tribes about termination and led them to mobilize against it.[74]

In 1970, the Nixon Administration announced an Indian policy that still prevails.[75] The emphasis shifted away from termination of the reservation system.[76] In addition, the United States Supreme Court consistently added definition to the unique legal status of tribes in a series of important decisions.

Supreme Court Justice Hugo Black handed down one such case in 1959. In *Williams v. Lee*, the Court held that the Navajo tribal court had exclusive jurisdiction over a contract case that involved a non-Indian and an Indian party.[77]

However, a subsequent case dealt a blow to tribal sovereignty. In *McClanahan v. Arizona State Tax Commission*, the Court discussed tribal sovereignty in the face of state rights to collect income taxes from reservation Indians.[78] The Court struck down state income taxes on Indians living in Indian country and supported tribal self-government, but its tepid language about sovereignty reads as indifference to the concept. The decision dubs sovereignty a "backdrop" and a "platonic notion."[79]

Other Supreme Court opinions showed more deference to inherent tribal sovereignty. For example, in *Morton v. Mancari*, the Court upheld a federal policy that gave Indian applicants hiring preference when they sought civil service positions dealing with Indian matters.[80] Challengers to the Indian preference statute claimed that it constituted racial discrimination.[81] The Court held otherwise, stating that it was not a racial preference, but an "employment criterion reasonably designed to further the cause of Indian self-government."[82]

Even after these cases tribal sovereignty remained a murky and timeworn concept until 1978, when two cases clarified its meaning. First came *Oliphant v. Suquamish Indian Tribe*, penned by Supreme Court Justice William Rehnquist.[83] In that case, two non-Indians committed crimes on the Port Madison Reservation of the Suquamish

74. WILKINSON, *supra* note 70, at 104, 171, 258.
75. H.R. DOC. NO. 91-363 (1970).
76. WILKINSON, *supra* note 70, at 106.
77. 358 U.S. 217, 223 (1959).
78. 411 U.S. 164, 165 (1973).
79. *Id.* at 172.
80. 417 U.S. 535, 553-54 (1974).
81. *Id.* at 553.
82. *Id.* at 553-54. Contrast this case to the holding of *University of California v. Bakke*, decided in 1978, where the Court had to speak to the difference between affirmative action and Indian self-government. 438 U.S. 265, 304 n.42 & 305 (1978).
83. 435 U.S. 191 (1978).

Tribe.[84] The Court held that they were not subject to the jurisdiction of the tribal court.[85] The tribe claimed jurisdiction pursuant to its retained inherent powers of government over the reservation.[86] The Court interpreted several congressional acts as having implicitly assumed that tribes lacked authority over non-Indians.[87] The language of *Oliphant* thus appeared to dilute tribal sovereignty.

Just two weeks after *Oliphant*, the Court decided *United States v. Wheeler*, in which the Navajo tribal court charged a tribe member with disorderly conduct and contributing to the delinquency of a minor.[88] The federal court also prosecuted the Native American defendant for rape, a charge arising from the same incident.[89] The defendant argued the two charges subjected him to double jeopardy in violation of his rights under the Fifth Amendment of the United States Constitution.[90]

The Court denied this claim on the basis that an individual sovereign, the tribe, conducted the initial prosecution and therefore the claim was distinct from the subsequent prosecution. Justice Stewart wrote, "[T]he sovereign power to punish tribal offenders has never been given up by the Navajo Tribe and that tribal exercise of that power today is therefore the continued exercise of retained tribal sovereignty."[91] The Court relied on *Worcester v. Georgia* and other cases to trace tribal powers to an inherent tribal sovereignty that the Court never relinquished.[92]

Part of the pressure on the legal system to recognize tribal self-government during the 1960s and 1970s came from the efforts of the most radical Native American advocacy group, the American Indian Movement ("AIM"), organized in 1968.[93] In 1973, AIM-led militants invaded Wounded Knee, South Dakota, where United States troops massacred Sioux Indians on the Pine Ridge Reservation in 1890.[94] Demanding self-determination rights, AIM members took over Wounded Knee by force and held law enforcement officials and the FBI at bay; their coup became instant national news.[95] Similar incidents like the takeover of Alcatraz Island in 1968 and the storming and sacking of

84. *Id.* at 194.
85. *Id.* at 195.
86. *Id.* at 195-96.
87. *Id.* at 203.
88. 435 U.S. 313, 314-15 (1978).
89. *Id.* at 315-16; *see also* Major Crimes Act, 18 U.S.C. § 1153(a) (2000) (stating that federal courts have jurisdiction over crimes committed by Indians in Indian Country).
90. United States v. Wheeler, 435 U.S. at 316.
91. *Id.* at 323-24.
92. Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 558 (1832); United States v. Wheeler, 435 U.S. at 331.
93. MICHAEL P. MALONE & RICHARD W. ETULAIN, THE AMERICAN WEST: A TWENTIETH-CENTURY HISTORY 139 (1989).
94. *Id.*
95. *Id.*

Bureau of Indian Affairs offices in 1972 brought tribal demands to the foreground in the American conscience.[96]

The termination policy of the 1950s posed such a large threat that it galvanized Indian leadership.[97] Educated and empowered, tribal organizations created a "supratribal" consciousness.[98] The support of the democratic administrations of the 1960s and the national fervor for social reform gave tribes the new ability to shape the course of their own destiny.[99]

One concrete example of tribal activism took place in Alaska. The Association of American Indian Affairs worked with Alaska natives to inform and organize them as Alaska entered the Union in 1958.[100] At the time, three factors threatened to encroach on tribal interests. First, all states, upon entry into the Union, are entitled to claim lands by designating them as school lands.[101] In Alaska, tribal advocates feared theses selections would encroach on historic Native Eskimo land.[102] Second, at the same time, the federal government proposed nuclear testing on lands where Eskimos lived and hunted.[103] Finally, the abundant oil, natural gas, water, and timber reserves tempted developers, whose schemes likewise threatened Eskimo land.[104]

Only the activism of the native people and their strength as a voting block could change the tide in Alaska, and it did, albeit slowly. In the mid-1960s, Secretary of the Interior Stewart Udall ordered a land freeze to halt state selections and other dispositions until Congress legislated on native claims.[105] Finally, in 1971, Congress passed the Alaska Native Claims Settlement Act.[106]

The Indian Civil Rights Act of 1968[107] perhaps sounded the end of the Termination Era. The act obligates tribal government to provide members with most of the freedoms contained in the Bill of Rights of the United States Constitution.[108] Some criticize the act, calling it a federal incursion on tribal independence, but others note that at least

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96. *Id.*

97. WILKINSON, *supra* note 70, at 86.

98. Sylvia F. Liu, *American Indian Reserved Water Rights: The Federal Obligation to Protect Tribal Water Resources and Tribal Autonomy*, 25 ENVTL. L. 425, 426 n.2 (1995).

99. ANGIE DEBO, A HISTORY OF THE INDIANS OF THE UNITED STATES 383 (1970).

100. *Id.* at 387-88.

101. 43 U.S.C. §§ 857, 870 (2000).

102. DEBO, *supra* note 99, at 387-88.

103. *Id.* at 388.

104. *See generally, id.* at 383-404 (discussing the Indians' struggle to protect certain Native lands from non-tribal development).

105. *Id.* at 398.

106. Pub. L. No. 92-203, 85 Stat. 688 (1971) (codified as amended at 43 U.S.C. §§ 1601-1629(h) (2000)).

107. Pub. L. No. 90-284, 82 Stat. 77, 77-78 (codified as amended at 25 U.S.C. §§ 1301-1302 (2000)).

108. *Id.* § 1302 (2000).

it seemed to contemplate the continued existence of Indian governments.[109] President Lyndon Johnson delivered an unprecedented message to Native Americans in a speech in 1968.[110] The next President, Richard Nixon, concurred by recommending federal Indian policy be one of "self-determination."[111] These sentiments finally and formally signaled the end of termination.[112]

3. Rapid Growth of Western States

The maturation of the federal reserved water rights doctrine coincided with a time when the West was experiencing significant social and economic changes. Post-World War II population growth continued unabated. By 1970, the United States Bureau of the Census reported that the population of eighteen western and mid-western states had increased fifty-five percent since 1950. Growth in the twelve core western states was even more dramatic, increasing by over seventy percent in that same time frame.[113] Reasons for this population growth included higher birth rates in the western states and a general population movement from other parts of the country into the sunbelt.[114]

Growth was especially rapid in the southwestern states, which are particularly dependent on the Colorado River for water and power. From 1950 to 1970, all the states sharing the Colorado River basin grew at rates exceeding fifty percent.[115] Nevada grew 206% (329,000 more people), Arizona 136% (over 1 million more people), California 88% (9.4 million more people), and Colorado 67% (882,000 more people).[116]

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109. WILLIAM C. CANBY, JR., AMERICAN INDIAN LAW IN A NUTSHELL 29 (1981).
110. H.R. DOC. NO. 90-272 (1968).
111. H.R. DOC. NO. 91-363 (1970).
112. *Id.*
113. U.S. DEP'T OF COMMERCE, BUREAU OF THE CENSUS, HISTORICAL STATISTICS OF THE UNITED STATES: COLONIAL TIMES TO 1970 Part 1, at 22 (1975) [hereinafter HISTORICAL STATISTICS].
114. *See* PAMELA CASE & GREGORY ALWARD, U.S. DEP'T OF AGRIC., FOREST SERV., PATTERNS OF DEMOGRAPHIC, ECONOMIC AND VALUE CHANGE IN THE WESTERN UNITED STATES: IMPLICATIONS FOR WATER USE AND MANAGEMENT 7-8 (1997).
115. *See infra* Table 2.
116. HISTORICAL STATISTICS, *supra* note 113, at 24-37.

Table 2: Increase in Western Population (1950-70)[117]

State	1950 Population (in thousands)	1970 Population (in thousands)	Percent Increase	1950 Urban (%)	1970 Urban (%)
Alaska	129	300	133	26	49
Arizona	750	1,771	136	55	80
California	10,586	19,953	88	81	91
Colorado	1,325	2,207	67	63	79
Idaho	589	713	21	43	54
Kansas	1,905	2,247	18	52	66
Montana	591	694	17	44	53
Nebraska	1,326	1,483	12	47	62
Nevada	160	489	206	58	81
New Mexico	681	1,016	49	50	70
North Dakota	620	618	0	27	44
Oklahoma	2,233	2,559	15	51	68
Oregon	1,521	2,091	37	54	67
South Dakota	653	666	2	33	45
Texas	7,711	11,197	45	63	80
Utah	689	1,059	54	65	80
Washing-ton	2,379	3,409	43	63	73
Wyoming	291	332	14	50	61
TOTALS	34,139	52,804	55	63	79

Population growth heightens the competition for water as growing cities seek to secure ample present and future water supplies. This challenge was certainly part of the impetus for the modern adjudications commenced in the 1970s. It came not a moment too soon, for a United States Senate report estimated that by the year 2000, water withdrawals nationwide could increase by over 200% of the 1975 withdrawals.[118]

In 1950, six western states (of eighteen studied) could claim a majority of their residents lived in rural areas.[119] Two decades later, only Alaska, North Dakota and South Dakota had predominantly rural

117. *See id.*

118. CONG. RESEARCH SERV., 96TH CONG., STATE AND NATIONAL WATER USE TRENDS TO THE YEAR 2000, at 236 fig.55 (Comm. Print 1980).

119. HISTORICAL STATISTICS, *supra* note 113, at 24-37.

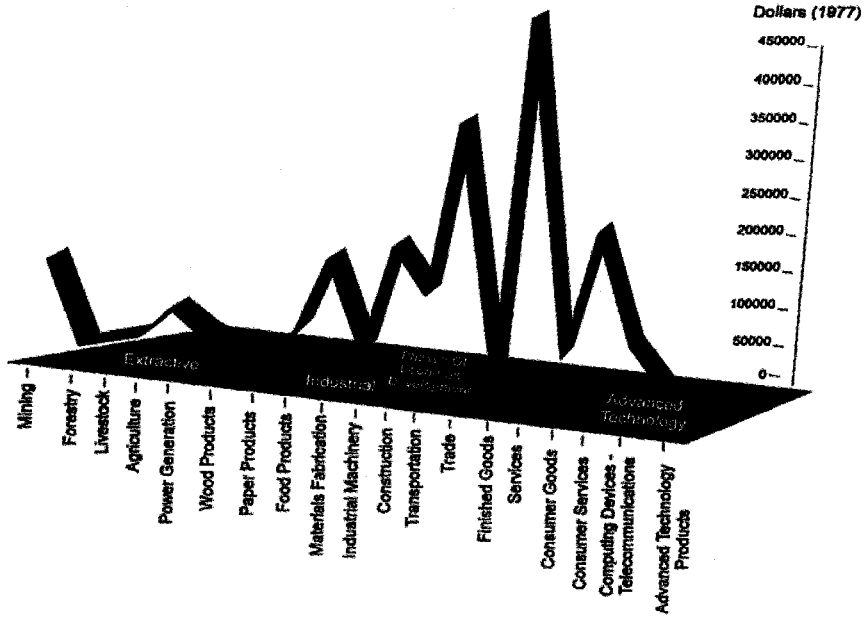
populations.[120] By 1970, approximately eighty-three percent of western residents lived in cities and towns.[121] In California, urban residents comprised ninety-one percent of the population.[122] The West is now the most urbanized region of the country.[123]

What is even more surprising is that western population was beginning to concentrate in a relatively few number of areas, now known as "urban archipelagos" including Boise, Salt Lake City, Spokane, Denver, Colorado Springs, Las Vegas, Sacramento, Eugene, El Paso, Dallas, Houston, Albuquerque, Tucson, Phoenix and Missoula.[124]

The western economic profile began to reflect the urbanization trend. By 1977, urban-based industries such as services, trade, construction, and materials fabrication all posted greater net earnings than any agricultural or resource-extraction sector.125 The total earnings of the five top industrial sectors exceeded the total earnings in all seven agriculture and resource extraction sectors by more than 370%.126 Figure 1 graphically illustrates this relationship. In spite of the rural, agrarian myth, the West was becoming more urban and more urbanized.

120. *Id.* at 24, 32, 34.
121. *Id.* at 22.
122. *Id.* at 25.
123. A. Dan Tarlock & Sarah B. Van de Wetering, *Growth Management and Western Water Law: From Urban Oases to Archipelagos,* 5 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 163, 164 (1999).
124. *Id.* at 165.
125. CASE & ALWARD, *supra* note 114, at 11.
126. *Id.*

Figure 1: Industrial Profile of the Western Economy (1977)[127]



Urbanization complicated western adjudications. Populous areas had huge water needs, but often held only junior appropriation dates because of their recent establishment. Thus, the areas with the need for the most water had the least secure entitlement to it. Cities attempted to remedy this dilemma by using controversial tactics; they bought rural irrigation rights that had far superior priority dates. Such maneuvers provoked litigation. For example, a 1996 Colorado case focused on the complex purchases and trades made by the City of Thornton in order to ensure its future water supply.[128]

4. The Energy Crisis of the 1970s

The Middle East oil embargo of 1973 precipitated a national energy crisis, which prompted calls to step up drilling and mining activity in the western states. Western States rapidly developed coal mines and oil fields, and the prospect of even more grandiose projects, such as coal gasification projects, seemed just around the corner.

Until the energy crisis, coal mining in the West comprised only a small portion of the extraction industry output. The West produced only five percent of the United States coal supply since the Civil War.[129] Over the ten years between 1972 and 1982, however, western coal pro-

127. *Id.* at 10.
128. City of Thornton v. Bijou Irrigation Co., 926 P.2d 1, 19 (Colo. 1996).
129. JOHN A. FOLK-WILLIAMS & JAMES S. CANNON, WATER FOR THE ENERGY MARKET 7 (1983).

duction more almost quintupled.[130] In six principal western states (Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming), production increased from nearly 44.3 million tons to 202.4 million tons.[131]

Energy and mining projects threatened to pollute or deplete aquifers through the use of slurry pipelines.[132] In the Yellowstone River basin, analysts estimate that it takes 200 to 260 gallons of water to transport by pipeline each ton of coal produced.[133] Additionally, the possibility of coal slurry pipelines from Montana, Wyoming and South Dakota threatened to suck many watersheds dry. Energy Transportation Systems, Incorporated ("ETSI") proposed a coal slurry pipeline from northeastern Wyoming running 1,665 miles to Louisiana and Arkansas.[134] The proposed pipeline would require up to 20,000 acre-feet of water per year.[135]

5. Changes in State Water Management

The face of state water management was also changing in the 1970s. Most of the water in western rivers and streams had already been appropriated and, although there were continued calls for more dams and reclamation projects, the era of massive water development had largely passed. State water managers were on the threshold of a new era that would require an appreciation of the limits of the resource, interdisciplinary thinking, and careful management.

One of the first signals of change was the reorganization of water management functions in several states. In the wake of Montana's new constitution in 1972, the new Department of Natural Resources and Conservation gained water management authority.[136] Utah,[137] Washington,[138] and Oregon[139] folded their water management programs into new umbrella departments. Arizona made major changes; it first transferred the responsibilities for managing water rights from the State Land Commissioner to a State Water Commission in 1979, and then to a newly formed Department of Water Resources in 1980.[140] Idaho also

130. *Id.*
131. *Id.*
132. *See* CONSTANCE M. BORIS & JOHN V. KRUTILLA, WATER RIGHTS AND ENERGY DEVELOPMENT IN THE YELLOWSTONE RIVER BASIN 122 (1980) (explaining that coal is pulverized, mixed with water, and then pumped under pressure in a pipeline. At the terminus, coal is separated from the water and burned).
133. *Id.* at 123.
134. ETSI Pipeline Project v. Missouri, 484 U.S. 495, 498-99 (1988).
135. *Id.* at 497-98.
136. MONT. CODE ANN. §§ 85-1-101(3), (7) (2005).
137. UTAH CODE ANN. § 73-2-1.1 (2005).
138. WASH. REV. CODE ANN. §§ 43.21A.040, .064 (West 2006).
139. OR. REV. STAT. § 536.039 (2003).
140. ARIZ. REV. STAT. ANN. § 45-102 (2005).

created a Department of Water Resources in 1974.[141] In all of these states, the changes tied water issues more closely to state political leadership through more organized structures.

6. Interstate Tensions Over Water

Western population expansion and the national energy crisis intensified interstate competition for water, just as dam construction and agricultural expansion had sparked conflict years before. The pressures encouraged provincialism, and states with relatively ample water supplies remained alert for any proposal to divert water within their boundaries for use elsewhere in the West.

One such project, the massive North American Water and Power Alliance, proposed diverting water all the way from the Yukon River in Alaska to eastern Texas.[142] Similarly, plans to divert Columbia River water for the benefit of California generated enormous concern in Washington and Oregon.[143] Upper Missouri River basin states opposed proposals by western states to divert water to recharge the Ogallala Aquifer in the lower Great Plains or to provide water to southwestern cities.[144]

State competition for water was not limited to surface water. Some states filed suits against each other over groundwater resources. These included disputes between Colorado and Nebraska, in *Sporhase v. Nebraska ex rel. Douglas,*[145] and New Mexico and Texas, in litigation that produced *City of El Paso v. Reynolds.*[146] These cases reinforced the concern that states were losing control of their water resources. The states believed that adjudications were one way of securing a fair apportionment because the cases would prepare them to demonstrate how much

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141. IDAHO CODE ANN. § 42-1701 (2005).

142. *The World's Biggest Ditch*, FORBES, May 15, 1977, at 112.

143. A. Dan Tarlock, *A First Look at a Modern Legal Regime for a "Post Modern" United States Army Corps of Engineers*, 52 U. KAN. L. REV. 1285, 1306 (2004).

144. Mark Squillace & Sandra Zellmer, *Managing Interjurisdictional Waters Under the Great Lakes Charter Annex*, 18 NAT. RESOURCES & ENV'T 8, 9 (2003).

145. 458 U.S. 941, 954-58 (1982) (upholding a Nebraska statute which limited exports of groundwater out of state, where the statutes were strictly related to conservation goals, but invalidating "reciprocity clause," which required states getting Nebraska water to give Nebraska reciprocal withdrawal rights, as an unreasonable restriction on interstate commerce in violation of the Commerce Clause of the United States Constitution).

146. 563 F. Supp. 379, 391-92 (D. N.M. 1983) (holding that a New Mexico "embargo statute" prohibiting the transport of New Mexico groundwater to other states violated the Commerce Clause of the United States Constitution); *see also* City of El Paso v. Reynolds, 597 F. Supp. 694, 705, 708 (D. N.M. 1984) (holding that subsequent statute which limited groundwater exports to those "not contrary to" conservation efforts and public not unconstitutional, but two-year moratorium on new transfers of groundwater hydrologically connected to the Rio Grande River impermissible and violative of the Commerce Clause of the United States Constitution).

water they actually used, a useful fact for any forthcoming interstate river apportionment.

The implicit, and ultimately false, assumption that both the supply of water and the demand for it were rigidly inflexible was interwoven with these water management developments. People assumed that water would be available perpetually, as it had been since the Reclamation Era. They also assumed that water use would continue in the same manner as it always had – for agricultural purposes. However, engineering solutions, the historic response to western water problems, would continue to make water flow uphill toward money.

In the ensuing decades, an extensive array of policies developed, including conservation measures, water marketing, water banks, and lease-cost pricing. Technological improvements brought drip and low-flow irrigation devices, industrial and household conservation devices, and greater use of recycled water. Stimulated largely by declining financial resources, these innovations demonstrated that states could spread their water resources much more widely than anticipated. Recent federal reports indicate that as a result of these efforts, water consumption has actually declined.[147]

7. Federal-State Tensions Over Water

Western states were also concerned the federal government was encroaching upon (if not nationalizing) the western water resource. Much of this concern dated to federal efforts in the 1930s and 1940s to develop major river basins throughout the country. The exemplars included the Tennessee Valley Authority[148] and the proposed Missouri Valley Authority.[149] The United States Supreme Court's post-World War II decisions recognized the preemptive authority of the Federal Power Commission ("FPC") to license diversions on navigable streams[150] and dams abutting federal land on non-navigable streams.[151] The FPC's authority was a harbinger to western states, warning them that their authority over their water resources was eroding.

Our federal system of government makes state and federal conflicts inevitable. As one western water attorney explained, "[w]ater, even uncomplicated by federalism, nurtures controversies which are both

147. *See* WESTERN WATER POLICY REVIEW ADVISORY COMM'N, WATER IN THE WEST: THE CHALLENGE FOR THE NEXT CENTURY 2-21 (1998) (finding that "withdrawals in the 19 western states appear to have stabilized," resulting in a two percent decrease in surface water withdrawals).

148. *See* Tennessee Valley Authority Act of 1933, 48 Stat. 58-59 (codified at 16 U.S.C. § 831 (2000)).

149. *See* John P. Guhin, *The Law of the Missouri*, 30 S.D. L. REV. 347, 362 (1985).

150. First Iowa Hydro-Electric Coop. v. Fed. Power Comm'n, 328 U.S. 152, 166, 181 (1946).

151. Fed. Power Comm'n v. Oregon (*Pelton Dam*), 349 U.S. 435, 437 (1955).

long and bitter. Ever since western water rights were first established in the mining camps of the Sierra Nevadas, it has frequently been nip and tuck whether differences of opinion would be resolved by briefs or by bullets."[152] Municipal and industrial needs, water quality concerns, and other resource management problems forced the states to re-evaluate their water development alliance with the federal government. Adjudications began to exacerbate the acrimonious element of the relationship between former allies. Western states faced growing threats to their traditional allocation primacy.[153]

In recent years, federal interests in western water management have grown to include environmental protection and recreational uses. Federal regulatory programs such as the Endangered Species Act,[154] Section 404 of the Clean Water Act,[155] the Superfund Amendment Reauthorization Act of 1986,[156] and the Migratory Bird Conservation Act[157] create conflicts between federal and state governments.[158]

B. An Old Fashioned "Race to the Courthouse"

The many events chronicled above fueled the fears of western state leaders that the control of water was slipping out of their hands and into those of federal agencies and federal courts. State officials and water users began to appreciate that large, senior reserved water rights claims and growing energy demands would undermine the security of their existing rights.

State officials and water users envisioned state court adjudications as the means for finally ascertaining the priority and quantity of their water rights. In anticipation of these state court adjudications, the United States sought a forum perceived to be more favorable to its federal interests and those of the tribes: federal court. Although these competing state and federal strategies unfolded over years rather than hours, they still resembled an old-fashioned "race to the courthouse."

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152. Charles E. Corker, *Water Rights and Federalism – The Western Water Rights Settlement Bill of 1957*, 45 CAL. L. REV. 604, 604 (1957).

153. *See* Charles T. DuMars & A. Dan Tarlock, *Symposium Introduction: New Challenges to State Water Allocation Sovereignty*, 29 NAT. RESOURCES J. 331, 343-46 (1989).

154. 16 U.S.C. §§ 1531-1544 (2000) (limiting actions that threaten to modify or destroy critical habitat for threatened and endangered species).

155. 33 U.S.C. § 1344 (2000) (requiring federal permits for "dredge and fill" activities affecting navigable waters).

156. 42 U.S.C. § 9621 (2000) (allowing the federal government to determine relevant and appropriate environmental standards for the cleanup of hazardous waste sites).

157. 16 U.S.C. § 715 (2000) (limits actions which interfere with the migration of certain birds).

158. *See* D. Craig Bell & Norman K. Johnson, *State Water Laws and Federal Water Uses: The History of Conflict, the Prospects for Accommodation*, 21 ENVTL. L. 1, 3 (1991).

1. Colorado

Following passage of the Water Right Determination and Administration Act of 1969,[159] Colorado took an aggressive tack, attempting to maneuver the adjudication of federal claims into state court. Adjudications in the five water districts in northwestern Colorado joined six types of federal reservations: seven national forests, one national park, three national monuments, more than 1,500 public springs and water holes, two mineral hot springs, and two naval oil shale reserves.[160]

One of the principal aims of the Forest Service was to secure recognition of water for instream flows.[161] Forest Service officials argued that denying instream flows would seriously damage the forests.[162] Others opposed these claims, arguing that allowing such uses would impede other, more economical water uses.[163] The City of Denver argued that extensive federal reserved rights for instream flows could greatly restrict the city's growth.[164]

Elsewhere in Colorado, the United States, Ute Mountain Tribe, and Southern Ute Tribe struggled with the state over the proper forum for adjudicating federal reserved right claims to the San Juan River and its tributaries.[165] The federal and tribal parties filed a federal court action in 1972, naming approximately 1,200 defendants.[166] The Southeastern Colorado Water Conservation District responded in January 1973 by filing a lawsuit in state court attempting to join the United States pursuant to the McCarran Amendment.[167] The federal district court dismissed joinder of the United States, and the United States Supreme Court ultimately upheld the district court's decision.[168]

2. Arizona

The state-federal struggle was just as lively in Arizona. In 1975, the United States and the Papago Indian Tribe (now the Tohono O'odham Nation) sued the City of Tucson, various mining companies, and other groundwater users seeking to prevent off-reservation pumping of groundwater in the upper Santa Cruz River basin. The United States and the tribes alleged that groundwater pumping interfered with the tribe's reserved rights to both surface water and groundwater on

159. COLO. REV. STAT. § 37-92-101 (2005).
160. GAO REPORT, *supra* note 33, at 31 n.1, 32.
161. *Id.* at 32.
162. *Id.*
163. *Id.*
164. *Id.*
165. United States v. Akin, 504 F.2d 115, 116 (10th Cir. 1974).
166. *Id.*
167. Colo. River Water Conservation Dist. v. United States, 424 U.S. 800, 806 (1976).
168. *Id.*

the reservation.[169] The City of Tucson, which is entirely reliant on groundwater, responded, stating, "enormous damages would be suffered in lost municipal, industrial, and agricultural investments. One mining company . . . stated that its capital investment subject to loss exceeds $80 million. The city of Tucson values its wells, tanks, and related ground water pumping improvements at almost $100 million."[170]

This litigation was settled after the passage of the Southern Arizona Water Rights Settlement Act of 1982.[171] This Act quantified reserved water right claims of the San Xavier and Schuk Toak districts of the Sells Papago Reservation of the Papago Tribe while the claims for the remaining districts of the reservation remained pending.[172]

The Navajo Nation also filed suit in federal court seeking a determination of its own water rights.[173] The state moved to dismiss this litigation in favor of pending state court proceedings in the Little Colorado River adjudication.[174] The federal court denied the motion but agreed to abstain while periodically monitoring progress in the state proceeding.[175]

3. Montana

Montana passed a comprehensive water use act in 1973, mandating state water rights adjudication.[176] The first (and, as it turned out, the only) venue chosen for this predominantly administrative adjudication was the Powder River basin in southeastern Montana where various oil, gas, and coal developments threatened to consume massive amounts of water.[177] Some Indian tribes and federal officials felt the statute might assert impermissible state jurisdiction over Indian water rights. In 1975, the United States filed suits in federal court to adjudicate the reserved rights on behalf of the Northern Cheyenne Tribe and the Crow Indian Tribe.[178] In 1979, the United States filed four additional

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169. GAO REPORT, *supra* note 33, at 33.

170. *Id.* at 33-34.

171. Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, tit. III, § 301, 96 Stat. 1274, *amended by* Pub. L. No. 108-451, tit. III, § 301, 118 Stat. 3478, 3535 (2004).

172. Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, tit. III, § 301, 96 Stat. 1274, 1274.

173. Navajo Nation v. United States, 668 F.2d 1100, 1100-01 (9th Cir. 1982), *rev'd*, Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 571 (1983).

174. 668 F.2d at 1101.

175. *Id.*

176. MONT. CODE ANN. § 85-2-228, -212, -214 (2005).

177. Elizabeth Sodastrom, Jennifer Sokolove, & Sally K. Fairfax, *Federal Reserved Water Rights Applied to School Trust Lands?*, 34 LAND & WATER L. REV. 1, 9 (1999).

178. N. Cheyenne Tribe v. Adsit, 668 F.2d 1080, 1082-83 (9th Cir. 1982), *rev'd*, Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 571 (1983).

suits on behalf of remaining reservations in the state.[179] This litigation pressured the state to enact a judicially-based statewide adjudication in 1979.[180]

4. Nevada

On December 21, 1973, the United States filed suit in federal court asserting the Pyramid Lake Indian Tribe's claim to sufficient water from the Truckee River to maintain the level of Pyramid Lake.[181] The Pyramid Lake Paiute Tribe intervened in the case, asserting that under Congressional decree, the United States had a conflicting interest and therefore was not adequately representing the tribe against private landowners in an earlier adjudication of the Truckee River that yielded the 1944 Orr Ditch Decree.[182] The Paiute Tribe claimed that the lack of vigorous representation resulted in a decree under which insufficient water was available to preserve the fishery in Pyramid Lake, which had great spiritual and economic importance to the tribe.[183]

Non-Indian water users responded that reopening the Orr Ditch Decree case would endanger the water supply to Reno's 130,000 residents, farming within the Government's Newlands Project, which was diverting an average of 200,000 acre-feet of water annually, and the federally-owned Stillwater Wildlife Refuge, which relied upon irrigation return flows from the Newlands Project.[184]

In 1973, the District Court for the District of Nevada held that the parties already had a sufficient chance to have their claims adjudicated and dismissed the complaint, refusing to revisit the issue.[185] The Court of Appeals, Ninth Circuit, reversed in part, affirmed in part, and remanded the case back to the district court.[186] Eventually, the United States Supreme Court held that the cause of action was the same one

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179. *See* Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 554 (1983).

180. *Id.* Montana passed legislation providing for

> the initiation of comprehensive proceedings by order of the Montana Supreme Court, the appointment of water judges throughout the State, and the consolidation of all existing actions within each water division,. . . [and] that the Montana Supreme Court should issue an order requiring all claimants not already involved in the state proceedings, including the United States on its own behalf or as trustee for the Indians, to file a statement of claim with the Department of Natural Resources and Conservation by a date set by the court or be deemed to have abandoned any water rights claim.

Id.

181. GAO REPORT, *supra* note 33, at 35.

182. Nevada v. United States, 463 U.S. 110, 118-21, 127-28 (1983).

183. *Id.* at 133-34.

184. GAO REPORT, *supra* note 33, at 36.

185. *See* United States v. Truckee-Carson Irrigation Dist., 649 F.2d 1286, 1296 (9th Cir. 1981), *modified,* 666 F.2d 351 (9th Cir. 1982).

186. 649 F.2d at 1313.

litigated in 1944, and that the Orr Ditch Decree bound all the parties.[187]

The Court rendered a final decision in 1983.[188] In conducting this litigation, the United States spent $3.5 million, not including Department of Justice expenses, and the State of Nevada spent about $600,000.[189]

5. California

The Pyramid Lake litigation also had ramifications for California. The Pyramid Lake Paiute Tribe in Nevada made it a policy to protest any action brought before California State Water Resources Control Board regarding the Truckee River watershed. In 1975, the tribe objected to fifteen petitions for time extensions, five petitions for changes, and eight applications to appropriate water all pending before the state board.[190]

6. New Mexico

New Mexico commenced an organized stream adjudication program in 1950s pursuant to 1907 legislation that established the duties of the territorial engineer, including the duty to make hydrographic surveys of the stream systems.[191] By 1976, the State Engineer filed numerous general stream adjudications in both federal and state courts.[192] Most of these adjudications involved the reserved water rights claims of one or more tribe or pueblo, including such entities as the Navajo Nation, Mescalero and Jicarilla Apache Tribes, and Taos Pueblo.[193] The adjudications of the northern New Mexico tributaries began after Congress authorized the San Juan-Chama Project (importing some of New Mexico's Colorado River entitlement into the Rio Grande Basin)[194] to determine the water rights on all streams affected by the di-

187. Nevada v. United States, 463 U.S. at 134-35, 145.

188. *Id.* at 110.

189. GAO REPORT, *supra* note 33, at 36.

190. Letter from W.R. Attwater, Chief Counsel, California State Water Resources Control Board, to D. Craig Bell, Western States Water Council (Dec. 3, 1975) (on file with author).

191. *See, e.g.*, State *ex rel.* Bliss v. Davis, 319 P.2d 207, 210 (N.M. 1957); *see also* N.M. STAT. § 72-2-1 (2005).

192. *See, e.g.*, United States v. New Mexico, 438 U.S. 696, 697 (1978); New Mexico v. Aamodt, 537 F.2d 1102, 1104-05 (10th Cir. 1976); United States v. Bluewater-Toltec Irrigation Dist., 580 F. Supp. 1434, 1446 (D. N.M. 1984) (discussing New Mexico general adjudications in federal court, including unpublished cases); Mimbres Valley Irrigation Co. v. Salopek, 564 P.2d 615, 615 (N.M. 1977); State *ex rel.* Reynolds v. Lewis, 545 P.2d 1014, 1015 (N.M. 1976).

193. LLOYD BURTON, AMERICAN INDIAN WATER RIGHTS AND THE LIMITS OF LAW 53-54 tbl.3.1 (1991).

194. 43 U.S.C. § 620(a) (2000).

versions. In several of these cases, the United States sought to dismiss the litigation on the basis that the actions failed to satisfy the McCarran Amendment.[195]

Other pueblos that were not directly involved in the pending litigation also asserted claims to main stem and tributary waters of the Rio Grande.[196] The State Engineer feared that federal and Indian claims, in pending or potential litigation, were "adverse to the rights and interests of the many thousands of non-Indian New Mexico water users relying upon the surface and underground waters of the respective affected streams."[197] The claims of federal land management agencies also concerned the state's leaders:

> [T]he mining operation of Phelps-Dodge, Inc. shows an even more cogent example of the potential effect of the recognition of non-consumptive rights. Here the Forest Service has recently claimed a minimum instream flow below Phelps-Dodge's point of diversion for a major smelting operation which involves a total capital investment of approximately $450,000,000 and supports a community of approximately 5,000 people. Historically the stream has been dried up by Phelps-Dodge's diversion. If the Forest Service's claim were recognized, the "non-consumptive use" could be 100% "consumptive" of Phelps-Dodge's vested rights under state law in the amount of 11,756 acre-feet per year.[198]

7. Oregon

In 1975, the United States filed suit in federal court seeking a declaration of water rights for a portion of the Williamson River where Congress had terminated the Klamath Indian Reservation in 1954.[199] The Government purchased some of the former reservation land to add to the national forest and turned a 15,000-acre marsh into a national wildlife refuge.[200] The United States claimed water rights as a successor in interest to the Klamath Tribe.[201] The Court of Appeals for the Ninth Circuit ultimately held that the Klamath Tribe treaty included water rights for agriculture, hunting, and fishing, and that the hunting and fishing rights carried a "time immemorial" priority date.[202]

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195. *See, e.g,* State *ex. rel.* Reynolds v. Lewis, 545 P.2d at 1015.

196. *See* IRA G. CLARK, WATER IN NEW MEXICO: A HISTORY OF ITS MANAGEMENT AND USE 661 (1987).

197. Letter from Paul L. Bloom, General Counsel, New Mexico State Engineer, to D. Craig Bell, Western States Water Council (Sept. 23, 1975) (on file with author).

198. GAO REPORT, *supra* note 33, at 95.

199. United States v. Adair, 723 F.2d 1394, 1397 (9th Cir. 1984).

200. *Id.* at 1398.

201. *Id* at 1398-99.

202. *Id.* at 1414.

8. Utah

Individual members of the Ute Indian Tribe of the Uintah and Ouray Reservation sued the United States Department of Interior in 1975, seeking to set aside a water deferral agreement that the tribe had previously executed.[203] This agreement would have allowed the construction of the Central Utah Project.[204] The tribe's members also sought to enjoin further construction of the Bonneville Unit from that reclamation project.[205] The Central Utah Project was of great importance to Utah, as it would have enabled the state to make use of its entitlement to Colorado River water.[206]

9. Washington

The United States and the Colville Confederated Tribes filed suit in federal court seeking to enjoin both surface and groundwater uses by non-Indians within the Colville Indian Reservation.[207] Non-Indians, most of whom are successors-in-interest to Indian allottees, own approximately twenty-six percent of the reservation, or about 350,000 acres.[208]

The tribes claimed that non-Indian water use was interfering with the development of adjacent reservation lands for fish and wildlife, irrigation, water quality, aesthetic, and recreational purposes.[209] The defendants asserted that they were successors to the water rights of the original Indian allottees and therefore needed the water for irrigation, stock watering, and dairy operation.[210]

In preparation for the case, the federal government spent seven years and $800,000 (excluding the cost of legal and consulting services) for itself and the tribe.[211] Participants estimated that total court costs had exceeded one million dollars even before trial, and the litigation seemed very likely to continue for many years.[212]

The United States, as trustee for the Spokane Indian Tribe, also sought an adjudication of all water rights in the Chamokane Stream

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203. *See* BURTON, *supra* note 193, at 68; *see also* Clark B. Fetzer, *The Ute Indian Water Compact*, 2 J. ENERGY L. & POL'Y 181, 191 (1982) (discussing the history of the Ute Deferral Agreement of 1965); Jeffrey Ashley & Robert L. Jones, *The Central Utah Project*, 22 J. LAND RESOURCES & ENVTL. L. 273, 286 (2002).

204. *See* BURTON, *supra* note 193, at 68.

205. *See* Ashley & Jones, *supra* note 203, at 286.

206. *Id.* at 274.

207. Colville Confederated Tribes v. Walton, 647 F.2d 42, 44 (9th Cir. 1981); *see also* GAO REPORT, *supra* note 33, at 37.

208. GAO REPORT, *supra* note 33, at 37.

209. *Id.*

210. *Id.*

211. *Id.* at 38.

212. *Id.*

System.[213] The Chamokane Creek forms the eastern boundary of the Spokane Indian Reservation.[214] The District Court for the Eastern District of Washington held that the tribe had the reserved right to sufficient water to preserve fishing, that the tribe could transfer its irrigation rights to its fishery, and that the state could regulate excess waters on land inside the reservation owned by non-Indians where the water partly flowed outside the reservation and where the amount was small compared to the amount of reserved water.[215]

10. Wyoming

While Wyoming did not undertake any reserved water rights litigation in the early 1970s, the State was aware that the Shoshone and Arapahoe tribes of the Wind River reservation might claim as much as 200,000 acre-feet of water for irrigation.[216] The diversion would tap the Bighorn and Wind Rivers and their tributaries.[217] By 1977, Wyoming had filed a complaint, and the litigation described in Part I of this article commenced.[218]

C. Fulfilling the McCarran Amendment's Promise

Most western states hoped to avoid the federal court system and adjudicate water rights issues in their own courts. States revived the McCarran Amendment,[219] a relic of the termination period in Indian policy, and sought to use it toward that end. States viewed the McCarran Amendment as a valuable means to secure a state forum for the adjudication of water rights.

After its enactment in 1952, the McCarran Amendment failed to achieve its purported potential. The federal government continued to frustrate state efforts to resolve conflicts and adjudicate water rights. The United States Attorney General ordered federal attorneys to withdraw from pending stream adjudications on the basis that they were not comprehensive proceedings.[220] Furthermore, the Attorney General stated that, regardless of the McCarran Amendment, state courts lacked jurisdiction over federal paramount rights including water rights.[221]

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213. United States v. Anderson, 591 F. Supp. 1, 3 (E.D. Wash. 1982).
214. *Id.* at 13.
215. *Id.* at 6, 7, 14.
216. Letter from James H. Barrett, Special Assistant Attorney General, State of Wyoming, to D. Craig Bell, Western States Water Council (Sept. 19, 1975) (on file with author).
217. *Id.*
218. *See supra* text accompanying notes 4-9.
219. 43 U.S.C. § 666 (2000).
220. *See* Thorson, *supra* note 2, at 459.
221. *Id.*

Accordingly, the United States began withdrawing from numerous western state adjudications. For instance, the United States withdrew from *City and County of Denver v. Northern Colorado Conservancy District*, a Colorado state court adjudication of the trans-basin diversion rights held by Denver and the Federal Bureau of Reclamation.[222] The United State also withdrew from *Rank v. Krug*, [223] even though the case was in federal district court. One observer of the *Rank* case stated, "nine years of testimony, at tremendous expense to the litigants, has very probably been wasted by the refusal of the government to submit its claims to litigation in the Central Valley case."[224] Similarly, the commanding officer of the Hawthorne Naval Reserve in Nevada withdrew applications for drilling permits from the State of Nevada on the grounds that state approval was unnecessary.[225]

In 1963, during the same judicial session that produced *Arizona v. California*,[226] the United States Supreme Court began to define the parameters of the McCarran Amendment. In *Dugan v. Rank*, the Court considered a controversy involving the assignment of water rights in California's San Joaquin Valley between private claimants and the Bureau of Reclamation.[227] The Court upheld the federal government's assertion of sovereign immunity and its withdrawal from the litigation.[228] Relying on the McCarran Amendment's statutory language and the court of appeals' holding, the Supreme Court noted some of the reasons that the trial court proceeding could not be considered a "general stream adjudication" under the McCarran Amendment:

> Rather than a case involving a *general* adjudication of "all of the rights of various owners on a given stream," it is a private suit to determine water rights solely between the respondents and the United States and the local Reclamation Bureau officials. In addition to the fact that all of the claimants to water rights along the river are not made parties, no relief is either asked or granted as between claimants, nor are priorities sought to be established as to the appropriative and prescriptive rights asserted.[229]

Dugan made it clear that the United States could not be joined under the McCarran Amendment in any proceeding in which private parties sought to adjudicate a limited number of claims solely between

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222. City & County of Denver v. N. Colo. Conservancy Dist., 276 P.2d 992, 995 (Colo. 1955).
223. 90 F. Supp. 773, 779 (S.D. Cal. 1950).
224. Clyde O. Martz, *The Role of the Federal Government in State Water Law*, 5 U. KAN. L. REV. 626, 644 (1957).
225. Nevada v. United States, 165 F. Supp. 600, 601, 603-04 (D. Nev. 1958).
226. 373 U.S. 546 (1963).
227. 372 U.S. 609, 610 (1963).
228. *Id.* at 611.
229. *Id.* at 617-19 (citations omitted).

themselves and the government. Instead, the Court required that the proceeding include the water rights of all claimants on a given stream system.[230]

States fine-tuned their adjudication statutes again in the 1970s to ensure that their state adjudication procedures would meet the requirements of the McCarran Amendment. State lawmakers saw the inevitability of water rights adjudications and wanted to be certain that inchoate and potentially huge blocks of federal water would be included. State lawmakers assumed that the McCarran Amendment would require at least judicial review, extensive joinder of parties, and consideration of all water rights. Nevertheless, states sought to maintain the essential character of their water management policies.

Armed with new statutes, state attorney generals and water resource directors commenced adjudications in their state court systems. Colorado[231] and Montana[232] created a new tier of courts to specifically decide cases involving water rights. Additionally, Arizona[233] and Idaho[234] attempted to synchronize their executive and judicial branches in "hybrid" adjudications.

Not all states jumped into the fray. Although Oregon's adjudication statute appeared "McCarran-ready," the state continued using its permit-and-certificate process as a sort of rolling adjudication of rights.[235] Early and poorly-defined water rights were addressed in truncated "supplemental" adjudications or handled piecemeal.[236] It appeared that the greater the federal and Indian presence in a state, the greater the chance that a large, exhaustive adjudication would ensue.

States feared that federal and tribal water rights would be determined in federal court. Conversely, federal and tribal attorneys feared state court determination. The time had come for the United States Supreme Court to decide where these issues would be decided. The first battleground was in Colorado, where parties instigated litigation that the United States Supreme Court eventually resolved. The cases comprising the litigation became known as the "Colorado Trilogy."[237]

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230. *Id.* at 618.

231. COLO. REV. STAT. § 37-92-203 (2005).

232. MONT. CODE ANN. § 85-5-110 (2005).

233. ARIZ. REV. STAT. ANN. § 45-252 (2005).

234. IDAHO CODE ANN. §§ 42-1401(B)-(C) (2005).

235. The Court of Appeals for the Ninth Circuit liberally construed the language of the McCarran Amendment that had loomed so large over state adjudication efforts. "Suit" no longer meant a judicial proceeding, but was simply shorthand for a state's statutory process of water right determination. "Comprehensiveness" did not force the inclusion of groundwater or the simultaneous consideration of all water rights. *See* United States v. Oregon, 44 F.3d 758, 765, 767-69 (9th Cir. 1994).

236. *Id.* at 767-68.

237. The Colorado Trilogy consists of three Supreme Court cases that specifically addressed Colorado's adjudication under the McCarran Amendment. United States v. Dist. Court (*Eagle County*), 401 U.S. 520, 522 (1971) (holding that the United States

The question of whether the McCarran Amendment authorized the adjudication of federal reserved rights in a state court was first answered in *United States v. District Court in and for the County of Eagle.*[238] The United States asserted that the McCarran Amendment's waiver of immunity applied only to "appropriative rights acquired under state law" and not to federal reserved water rights.[239] The Court rejected the United States' argument as "extremely technical" and held that the McCarran Amendment is an "all-inclusive statute."[240] The Supreme Court broadly read the McCarran Amendment's reference to water rights acquired "by purchase, by exchange, or otherwise" to include federal reserved water rights.[241] Thus, the Supreme Court held that the United States' reserved water rights may be adjudicated in a state court proceeding, pursuant to the McCarran Amendment.[242]

In *United States v. District Court in and for Water Division No. 5,* the companion case to *Eagle County,* the United States argued that Colorado's newly enacted adjudication procedure failed to meet the McCarran Amendment's "comprehensiveness" requirement because it used a month-by-month approach.[243] That is, each month a referee evaluated submitted water right claims, and any rights awarded in that proceeding were junior to previously awarded water rights. The Supreme Court acknowledged that Colorado's adjudication procedures posed a burden to the United States since the United States would have to appear in court every month if it wished to fully guard its claim to federal water rights.[244] Nonetheless, the Court upheld Colorado's adjudication procedures. The Court concluded, "[t]he present suit, like the one in the *Eagle County* case, reaches all claims, perhaps month by month but inclusively in the totality . . ."[245] The Court thus upheld this type of "piecemeal" adjudication as meeting the McCarran Amendment's "comprehensiveness" requirement.

Even after these two decisions, the question remained: did the McCarran Amendment's waiver of sovereign immunity extend to Indian water rights? When Congress considered enacting the McCarran Amendment, some argued that the waiver of sovereign immunity

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could be included as a party in the suit in state court); United States v. Dist. Court (*Water Division No. 5*), 401 U.S. 527, 529-30 (1971) (holding that the state court had jurisdiction to adjudicate the United States reserve water rights and that the Colorado system was within the scope of the McCarran Amendment); Colorado River Water Conservation Dist. v. United States (*Akin*), 424 U.S. 800, 809 (1976) (holding that Indian federal reserved rights fit within the McCarran Amendment).

238. 401 U.S. 520 (1971).
239. *Id.* at 522, 524.
240. *Id.* at 520, 524-26.
241. *Id.* at 524.
242. *Id.* at 520, 526.
243. 401 U.S. 527, 529 (1971).
244. *Id.*
245. *Id.*

should not extend to water rights of Indian tribes. Thus, another outstanding issue was whether tribal water rights could also be adjudicated in state courts.

In a 1976 case involving the Mescalero Apache Tribe in New Mexico, the New Mexico Supreme Court ruled that the state trial court had jurisdiction over the United States as owner (in trust capacity) of the tribe's water rights, and that the adjudication could therefore proceed.[246]

In the same year, the United States Supreme Court addressed the issue in *Colorado River Water Conservation District v. United States*,[247] which became the test case for the rest of the West. In that case, Colorado Ute tribes argued that their water rights were not federal property, but private rights held by the United States as a fiduciary.[248]

Unconvinced, the Supreme Court held that the United States had waived sovereign immunity, even as to water rights held in trust for Indian tribes. The Court stated, "bearing in mind the ubiquitous nature of Indian water rights in the Southwest, it is clear that a construction of the Amendment excluding those rights from its coverage would enervate the Amendment's objective."[249] The Court also indicated that federal courts could dismiss such adjudications in favor of concurrent state court proceedings based on the concept of "wise judicial administration," a narrow exception to "the virtually unflagging obligation of the federal courts to exercise the jurisdiction given them."[250] Thus, the Court held that state courts could determine Indian water rights.

Before some western states could proceed with their state adjudications, they had to overcome one remaining challenge concerning disclaimer provisions. Several western states, including Arizona, New Mexico and Montana, had provisions in their enabling acts and constitutions that disclaimed jurisdiction over Indian lands.[251] In a 1979 case decided by the United States Court of Appeals for the Tenth Circuit, the court held that disclaimer provisions in New Mexico state law failed to deprive the state courts of jurisdiction to adjudicate Indian water rights.[252]

Disclaimer provisions enacted in Arizona and Montana were later litigated in the cases *Northern Cheyenne Tribe v. Adsit*[253] and *San Carlos Apache Tribe v. Arizona*.[254] The United States Court of Appeals for the Ninth Circuit interpreted them differently. The Ninth Circuit ruled

246. State *ex rel.* Reynolds v. Lewis, 545 P.2d 1014, 1016, 1018 (N.M. 1976).
247. 424 U.S. 800 (1976).
248. *Id.* at 812 n.20.
249. *Id.* at 811.
250. *Id.* at 817-18.
251. ARIZ. CONST. art. XX, para. 4; N.M. CONST. art. XXI, § 2; MONT. CONST. art. I.
252. Jicarilla Apache Tribe v. United States, 601 F.2d 1116, 1128-30 (10th Cir. 1979).
253. 668 F.2d 1080, 1084-86 (9th Cir. 1982).
254. 668 F.2d 1093, 1096-97 (9th Cir. 1982).

that, based on the states' disclaimer provisions, Arizona and Montana did not have jurisdiction to adjudicate Indian water rights pursuant to the McCarran Amendment.[255]

Because of the conflict between the Ninth and Tenth Circuits, the United States Supreme Court accepted the cases for review. In July 1983, the Court ruled that even in states where an enabling act purports to disclaim state jurisdiction over Indian affairs, the McCarran Amendment still allows state jurisdiction in the quantification of Indian water rights where a general stream adjudication is underway.[256] The Court noted that the presence, or absence, of specific jurisdictional disclaimers were rarely dispositive of the question of whether states had jurisdiction over Indian affairs, or activities on Indian lands.[257]

The Indian tribes argued in support of retaining federal court jurisdiction,[258] and the lower courts conceded that their arguments had considerable force. However, the Supreme Court found the Indian tribes' concerns subordinate to the overriding objective of avoiding piecemeal and duplicative federal proceedings.[259] While the Supreme Court gave the states a green light to proceed, it also cautioned that "any state-court decision alleged to abridge Indian water rights . . . [would] receive . . . a particularized and exacting scrutiny commensurate with the powerful federal interest in safeguarding those rights from state encroachment . . ." if brought for review before the Supreme Court.[260]

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255. *See N. Cheyenne*, 668 F.2d at 1084; *see also San Carlos Apache*, 668 F.2d at 1098.

256. Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 559-61, 570 (1983).

257. *Id.* at 562.

258. The Indian respondents' arguments included:

> (1) Indian rights have traditionally been left free of interference from the States. (2) State courts may be inhospitable to Indian rights. (3) The McCarran Amendment, although it waived United States sovereign immunity in state comprehensive water adjudications, did not waive *Indian* sovereign immunity. It is therefore unfair to force Indian claimants to choose between waiving their sovereign immunity by intervening in the state proceedings and relying on the United States to represent their interests in state court, particularly in light of the frequent conflict of interest between Indian claims and other federal interests and the right of the Indians under 28 U.S.C. § 1362 to bring suit on their own behalf in federal court. (4) Indian water rights claims are generally based on federal rather than state law. (5) Because Indian water claims are based on the doctrine of "reserved rights," and take priority over most water rights created by state law, they need not as a practical matter be adjudicated *inter sese* with other water rights, and could simply be incorporated into the comprehensive state decree at the conclusion of the state proceedings.

Id. at 566-67.

259. *Id.* at 569.

260. *Id.* at 571.

Additionally, the Court considered "the expertise and administrative machinery available to the state courts, the infancy of the federal suits, the general judicial bias against piecemeal litigation, and the convenience to the parties."[261] Given these considerations, the Court concluded that Indian water rights may be adjudicated in state courts, even if the states had disclaimer language in their state statutes and constitutions.[262]

General stream adjudications of the modern era were finally in place. The fundamental principles of both *Arizona v. California* and the McCarran Amendment had been accommodated. States commenced their water adjudications with the grim conviction that federal reserved rights did in fact exist, a concern somewhat softened by the fact that most of these rights would be determined in a forum perceived to be more favorable: state court.

II. STREAM ADJUDICATIONS THROUGHOUT THE WEST

General stream adjudications are now underway in twelve western states. These adjudications vary in scope, as does the progress that states have made in these cases. In this section, we review these adjudication activities by region.

A. Pacific Northwest

Water defines the Pacific Northwest. For the purposes of this discussion, we include Idaho, Oregon, and Washington as the states of this region. More than the boreal forests, vast lava plains, rugged coast, high mountain peaks, or the occasional volcanic eruption, the water in rivers, lakes, sloughs, wetlands, aquifers, springs, snow pack, and rainfall is the standout feature of the Pacific Northwest. The region west of the Cascade Range and the central part of Idaho are especially water-rich. By contrast, the high plains of Oregon, Washington, and southern Idaho are very arid.

Gigantic irrigation, navigation, and hydropower projects, funded primarily by the United States government, have transformed the region, turning its water resources into working assets. Such projects have huge impacts. They have made the federal government the defacto manager of the Columbia-Snake River system, operating nine major dams for hydropower, irrigation, navigation, and fisheries. Spanning all three states, the Columbia-Snake River Basin system holds a place in the Northwest similar to that held by the Colorado River in the Southwest. It is a shared resource, serving as the center of all water-borne bounty. It is also a cultural icon, the focus of Native Ameri-

261. *Id.* at 570.
262. *Id.*

can use, lore and treaty rights, and an international and interstate resource. Unlike the Colorado, interstate compacts do not apportion the Columbia and Snake. Although years of conflict and uneasy sharing have demonstrated the need for a working compact, the three states are not close to negotiating one. All three states have adjudications underway.

1. Idaho

In the Idaho Snake River Basin Adjudication ("SRBA"), the Idaho Department of Water Resources ("IDWR") is considering over 150,000 water right claims that constitute 87 percent of the state's irrigated acreage and involve the entire Snake River system.[263] Idaho is adjudicating rights to the use of all water in the Snake River system, including groundwater.[264]

This state's adjudication system has judicial and administrative components. Once a case commences and parties file claims, the IDWR investigates water uses in all of the 24 sub-basins and reports its findings to the SRBA court.[265] Claimants have an opportunity to object to the reports, but if they decline to do so, uncontested portions of a report are prima facie evidence of the nature and extent of the water rights.[266] The SRBA court, headed by a district judge assigned by the state supreme court to the case, has broad power to organize the litigation and provide interim administration of rights until the court issues its final decree.[267] Special masters, judicial appointees with specialized experience in water rights and hydrology, hold hearings and reduce the reports to preliminary decrees.[268]

In 1994, the Idaho legislature revised the adjudication statutes in an effort to promote fairness and efficiency.[269] Most notably, the amendments changed the role of IDWR from a party litigant to that of an independent expert.[270] They also shifted many costs back to claim-

263. SNAKE RIVER BASIN ADJUDICATION, INFORMATION BROCHURE, http://www.srba.state.id.us/DOC/BROCH1.HTM (last visited Mar. 26, 2006) [hereinafter INFORMATION BROCHURE]; Don Shaff et al., Moving Toward Completion of Director's Reports in FY 2006 (Oct. 17, 2005), *available at* http://www.idwr.idaho.gov/water/srba/Conference%202005/Idaho%20Roundtable.pdf.

264. INFORMATION BROCHURE, *supra* note 263.

265. *Id.*

266. IDAHO CODE ANN. § 42-1411(4) (2005).

267. §§ 42-1407(1), -1417(1).

268. INFORMATION BROCHURE, *supra* note 263.

269. § 42-1401.

270. § 42-1401B(1).

ants, mandated settlement conferences before trial, and changed the personal and subject matter jurisdiction of the court.[271]

The new statutes provoked immediate controversy and led to a stay of the *Higginson v. United States* case while the Idaho Supreme Court evaluated the constitutionality of the amendments. In September 1995, the court affirmed the legislature's reduction of IDWR's "litigant" role, but it did not so easily endorse the agency's shift into the "expert" role.[272] The court held that the legislature could not qualify the director as an expert and that the statute was too intrusive on the SRBA court's discretion.[273] The court invalidated requirements that the trial court automatically accept reports to which no objections were filed.[274] The court also struck down compulsory pretrial settlement conferences.[275] In all other respects, however, the court upheld the statutes.[276]

Idaho's adjudication proceedings have many characteristics other western states envy. The proceedings enjoy enough financial backing to have a courthouse in Twin Falls solely for adjudication purposes. In addition, Idaho law requires a speedy judicial response from the supreme court, which keeps the proceedings moving in a timely manner. Idaho continues to adjudicate thousands of Snake River claims.

As of January 2006, IDWR indicates that it has decreed 118,521 claims, 11,400 director's reports have been submitted to the court, and over 19,733 reports still need to be prepared.[277] The department predicts that it will complete its reports by June 2006.[278] In early 2006, the state legislature authorized an adjudication of the Coeur d'Alene basin in northern Idaho.[279]

2. Oregon

Oregon has already adjudicated three quarters of its watersheds in administrative proceedings. The Klamath River Basin, the site of many important court battles dating back to 1975, is the current focus. In contrast to Idaho and other general adjudications, the Klamath Basin adjudication consists of only 730 claims, resulting in 5,663 contests to

271. §§ 42-1423, -1412(4), -1401A(7); *see also* Higginson v. United States (*In re* SRBA), 912 P.2d 614, 620 (Idaho 1995).
272. 912 P.2d at 625-26.
273. *Id.* at 626.
274. *Id.* at 626-27.
275. *Id.* at 627.
276. *Id.* at 632.
277. Don Shaff & Susan Hamlin Nygard, Informational Discussion—SRBA Court & IDWR (Jan. 17, 2006), http://www.idwr.idaho.gov/water/srba/Reports_Issues_ Presentations/Court106a.pdf.
278. Shaff, *supra* note 263.
279. 2006 Idaho Sess. Laws 222.

those claims.[280] Some of these claims are by large irrigation districts and municipalities. As of February 2006, the Oregon Water Resources Department ("OWRD") had resolved 90 percent of the contests.[281] Groundwater is the subject of a separate proceeding under Oregon law and is not part of the Klamath River adjudication.[282] Moreover, the adjudication only examines water rights that predate the 1909 Water Rights Act.[283]

Oregon's adjudication is strongly administrative with some judicial review features. Oregon adjudications begin on the motion of a water user or the ORWD director.[284] OWRD acts as the primary fact finder and administrative law judge, making a preliminary determination of water rights in a Director's report.[285] The report becomes effective immediately, although the state court must review it and hold hearings on objections.[286] The court decrees uncontested parts of the report automatically.[287]

Until 1975 the Klamath River adjudication had been in a holding pattern for nearly two decades. The United States first brought suit in federal district court to determine rights in the Williamson River, a tributary of the Klamath River.[288] Shortly thereafter, OWRD initiated the state administrative process for adjudicating all rights in the Klamath Basin.[289] Instead of deferring to concurrent state proceedings, the federal district court decided the validity of Klamath tribal water rights.[290] The court recognized the tribe's "time immemorial" priority date, then assigned priorities for rights held by successors to the tribe.[291] In 1983, the United States Court of Appeals for the Ninth Circuit upheld most of the district court's actions.[292] Accordingly, OWRD began again to quantify all rights in the Klamath Basin.

However, in September 1991 the process ground to a halt, as the United States and Klamath Tribes argued that Oregon's adjudication was not proper under the McCarran Amendment.[293] In an opinion that

280. Or. Water Res. Dep't, Klamath River Basin Adjudication Claim and Contest Information, http://www1.wrd.state.or.us/files/Publications/klamath-adj/Status_of_the_Adjudication.pdf (last visited Mar. 26, 2006).
281. *Id.*
282. *See* OR. REV. STAT. § 537.695 (2003).
283. Or. Water Res. Dep't, Klamath Basin Adjudication/ADR, http://www.wrd.state.or.us/OWRD/ADJ/index.shtml (last visited Mar. 26, 2006).
284. § 539.021.
285. § 539.130(1).
286. § 539.130(4), .150(3),(4).
287. § 539.150(3).
288. United States v. Adair, 478 F. Supp. 336, 339 (D. Or. 1979).
289. *See* United States v. Or. Water Res. Dep't, 774 F. Supp 1568, 1571 (D.Or. 1991).
290. 478 F. Supp. at 350.
291. *Id.*
292. United States v. Adair, 723 F.2d 1394, 1419-20 (9th Cir. 1983).
293. United States v. Oregon, 44 F.3d 758, 762 (9th Cir. 1994).

has had widespread implications for other states, the Ninth Circuit held that Oregon's administrative adjudication was sufficiently comprehensive and judicial to satisfy the McCarran Amendment, thereby enabling joinder of the United States and Klamath Tribes.[294]

Recognizing the complexity of the Klamath River proceedings, the State of Oregon, in cooperation with other claimants, initiated an alternative dispute resolution process that operates in tandem with litigation.[295] However, controversies concerning endangered species and tribal rights in the basin have disrupted the process.

3. Washington

Washington also has adjudications with administrative and judicial components. Once an adjudication begins, the Washington Department of Ecology ("WDOE") examines water use in each sub-basin.[296] A WDOE referee holds pretrial conferences and evidentiary hearings, which form the basis of the agency record and recommendations to the superior court.[297] The court then hears any objections.[298] If there are no objections to a claim, the court enters a decree on the water right as reported.[299] WDOE becomes a party to any objections filed. Interim administration of water rights is by court order, and WDOE issues the final water right certificates when the court issues its decree.[300]

Of Washington's three watersheds in adjudication, the main focus has been the Yakima River Basin. The Yakima River adjudication is the largest ever undertaken in Washington with 40,000 claimants in 31 subbasins covering ten percent of the state, excluding groundwater rights.[301] WDOE's referee has completed hearings in 26 of the 31 subbasins.[302] Legislative funding cuts to WDOE in 1994 slowed the adjudication, but the legislature restored some funding in 1995.[303] As of Oc-

294. *Id.* at 766-67.
295. Or. Water Res. Dep't, Klamath Alternative Dispute Resolution, http://www.wrd.state.or.us/OWRD/ADJ/klamath_adr_index.shtml (last visited Mar. 26, 2006).
296. WASH. REV. CODE § 90.03.110 (West 2006).
297. § 90.03.170.
298. § 90.03.200.
299. *Id.*
300. §§ 90.03.210, .240.
301. WASH. STATE DEP'T OF ECOLOGY, STREAMLINING THE WATER RIGHTS GENERAL ADJUDICATION PROCEDURES 7 (2002), http://www.ecy.wa.gov/pubs/0211019.pdf; Wash. State Dep't of Ecology, Yakima Basin Adjudication Status, http://www.ecy.wa.gov/programs/wr/rights/Images/pdf/adjstatusmap.pdf.
302. Wash. State Dep't of Ecology, Yakima Basin Adjudication Status, *supra* note 301.
303. WASH. STATE DEP'T OF ECOLOGY, 2004 REPORT TO THE LEGISLATURE: WATER RESOURCES ADMINISTRATION AND FUNDING TASK FORCE 3 (2004), http://www.ecy.wa.gov/pubs/0411029.pdf; Wash. State Dep't of Ecology, Focus on Referendum 38 (Feb. 2004), http://www.ecy.wa.gov/pubs/0411004.pdf.

tober 2004, the Yakima River adjudication court heard cases concerning 30 major claimants and has issued conditional final decrees for 23 of the major claimants.[304] Estimates predict that the overall process is two-thirds finished, and not likely to be completed for several years.

4. Summary

Water rights adjudications are likely to be a feature on the Pacific Northwest landscape for many years to come. These adjudications have many shared issues including tribal issues, state-federal relations, and instream flow issues. The sheer size of the proceedings appears to guarantee the longevity of the adjudications. In the end, the cost of the proceedings may outpace the value of the water itself. On the other hand, the adjudications may impart new value to water rights and help citizens appreciate the importance of the resource.

B. Northern Rockies

The three states of the Northern Rockies – Montana, Wyoming, and Colorado – also have common threads in their adjudications. Each state's geography displays the commonality of high mountains, snow producing runoff, and arid plains where farming is always a struggle. Yet each state has approached water rights determinations differently.

1. Wyoming

Water management in Wyoming benefits from the early guidance of Elwood Mead. By the late 1800s, Mead's theories about management of water law had failed to take hold in Colorado, which had opted for a judicial system of water management, so he defected to Wyoming.[305] In 1890, as Wyoming's first State Engineer, Mead helped establish the first administrative permitting system in the West, creating a platform for procuring water rights that endures today.[306]

Wyoming has used a judicial process to determine rights in the Big Horn River adjudication, and litigation in this adjudication determined the federal reserved rights of the Wind River tribes. Because of concerns that the state's administrative system might not satisfy the

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304. Wash. State Dep't of Ecology, Status of the Yakima Basin Adjudication, http://www.ecy.wa.gov/programs/WR/rights/Images/pdf/majorclaimantstatus.pdf (last visited Mar. 26, 2006).

305. WYO. STATE ENG'RS OFFICE & WYO. WATER ASS'N, *Introduction* to SELECTED WRITINGS OF ELWOOD MEAD (2000), *available at* http://seo.state.wy.us/pdf/finalmeadbooklet.pdf (hereinafter MEAD INTRODUCTION).

306. WYO. WATER DEV. COMM'N, WATER CONSERVATION SYMPOSIUM: SUMMARY, *available at* http://wwdc.state.wy.us/wconsprog/sum-2000Jul12.html (last visited Apr. 8, 2006); MEAD INTRODUCTION, *supra* note 305.

McCarran Amendment, the court appointed a series of special masters to hear much of the litigation. In 1979 the court and the parties agreed on an overall case management plan that has served as a road-map for the adjudication.[307] The adjudication was divided into three main phases: (1) Phase I – Indian reserved water rights, (2) Phase II – non-Indian federal reserved water rights, and (3) Phase III – state water rights evidenced by permits or certificates.[308]

Through a series of seven court rulings, commonly referred to as *Big Horn I* through *VII*, the Wyoming Supreme Court allowed the state to fold federal water rights into Wyoming's state right system.[309] Phase I was extensively litigated, and ultimately, the United States Supreme Court affirmed the state supreme court, without opinion, by an equally divided Court.[310]

With only 83 claims remaining today, participants in the Big Horn adjudication are moving toward a final decree and completion of the adjudication.[311]

2. Montana

Montana's adjudication is the largest water rights adjudication in the United States. The adjudication, which covers the entire state and involves over 219,000 claims, initially started in 1973, but the legislature substantially modified it in 1979.[312] Montana's adjudication scheme is strongly judicial. The state established a water court with a full-time chief water judge who can appoint special masters.[313] District court judges for each of the four major river basins act as decisional

307. *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys., 753 P.2d 76, 85 (Wyo. 1988), *aff'd by an equally divided court*, 492 U.S. 406 (1989).

308. *Id.*

309. *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn I*), 753 P.2d 76 (Wyo. 1988), *aff'd by an equally divided court*, 492 U.S. 406 (1989); *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn II*), 803 P.2d 61 (Wyo. 1990); *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn III*), 835 P.2d 273 (Wyo. 1992); *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn V*), 899 P.2d 848 (Wyo. 1995); *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn VI*), 48 P.3d 1040 (Wyo. 2002); *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn VII*), 85 P.3d 981 (Wyo. 2003).

310. Wyoming v. United States, 492 U.S. 406 (1989), *aff'g by an equally divided court In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn I*), 753 P.2d 76 (Wyo. 1988).

311. Wyo. State Eng'r's Office, Water Rights Database, http://seo.state.wy.us (follow "Water Rights Database" hyperlink, then follow "Drainage or Facility Name" hyperlink, then follow the directions for searching, enter "Big Horn River" in the "Stream Name" field) (last visited Feb. 13 2006).

312. Mont. Water Court, http://www.montanacourts.org/water/ (last visited Mar. 26, 2006).

313. *Id.*

water judges.[314] Unlike many other western states, Montana's adjudications include groundwater.[315] The Montana Department of Natural Resources and Conservation ("DNRC") plays a supportive, technical role.[316]

Once the adjudication begins with the filing of claims, the water court has control over all aspects of the case, including fact-finding.[317] DNRC has a mandatory role assisting in fact-finding and claim examination, but may participate as a party by objecting to claims.[318] The water court first issues a temporary preliminary decree, then a preliminary decree, then a final decree.[319] Claimants can object at any of these stages, and any uncontested claim is prima facie proof of the water right.[320] As in many states, the water court can authorize interim administration in a sub-basin by entering a temporary preliminary decree.[321] As of 2004, Montana's water court had at least partially processed 128,000 claims.[322] Of the 85 sub-basins in the state, thirty-six had temporary preliminary decrees, eleven had preliminary decrees, and six others had final decrees.[323]

One issue posed during the Montana proceedings is whether the court has the power to investigate uncontested claims, or whether the court must take those claims at face value. DNRC has the power to investigate; it makes "issue remarks" on water rights claims when it doubts the accuracy of the claim.[324] Petitioners filing late claims poses another problem. The first deadline for all claims was on April 30, 1982 but legislation in 1993 opened the door again, permitting two more waves of claimants, albeit with some limitations.[325]

With its 1979 statute, Montana also created the Reserved Water Rights Compact Commission, which acts as the state's agent in negotiating reserved water right claims with the United States and tribes.[326] The speaker of the state house and the president of the state senate each select two members from their respective bodies who join five

314. Montana Water Court Guidebook 5, *available at* http://www.courts.mt.gov/water/guidebook.pdf (last visited Mar. 26, 2006).
315. TED J. DONEY, BASIC MONTANA WATER LAW 2 (1990), *available at* http://www.montanacourts.org/water/forms/basiclaw.doc (last visited Apr. 8, 2006).
316. House Bill 22 Informational Site: Water Rights Adjudication in a Nutshell, http://dnrc.mt.gov/house_bill22/default.asp (last visited Mar. 26, 2006).
317. MONT. CODE ANN. § 3-7-223 (2005).
318. § 85-2-243.
319. §§ 85-2-231, -234.
320. § 85-2-227(1).
321. § 85-2-231(1).
322. WATER RIGHTS IN MONTANA 9-10 (2004), *available at* http://leg.state.mt.us/content/publications/lepo/2004waterrights.pdf.
323. *Id.*
324. Montana Water Court Guidebook, *supra* note 314, at 11.
325. WATER RIGHTS IN MONTANA, *supra* note 322, at 5-6.
326. MONT. CODE ANN. § 2-15-212 (2005).

other members appointed by the governor and the attorney general.[327] A technical and legal staff supports the Commission.[328]

Since its establishment, the Commission has done an impressive job in negotiating water right compacts with tribes located within the state, as well as with the major federal land management agencies such as the National Park Service, Bureau of Land Management, and Fish and Wildlife Service. These compacts include: Fort Peck Indian Reservation (1985),[329] Northern Cheyenne Indian Reservation (1991),[330] National Park Service (1993),[331] Chippewa Cree Tribe (1997),[332] U.S. Bureau of Land Management (1997),[333] U.S. Fish and Wildlife Service (1997 and 1999),[334] Crow Tribe (1999),[335] and Fort Belknap (2001).[336] Some of these compacts still must be approved by Congress, as trustee for the tribes, and by the state water court.

3. Colorado

At first blush, Colorado's water adjudication process appears far different from that of Montana and Wyoming. Colorado's system is largely judicial in nature and features specific statutory guidance for the water courts. Although the state began adjudicating water rights in the late 1800s, it established its modern judicial structure in 1969.[337] The statute carved Colorado into seven water divisions based on the state's major river basins, with a district judge specifically appointed to preside over each division.[338] Colorado adjudicates both surface water and tributary groundwater.[339] The state's adjudication process survived the United States Supreme Court's scrutiny concerning federal and tribal claims in three cases commonly referred to as the Colorado Trilogy.[340]

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327. *Id.*
328. § 2-15-121.
329. § 85-20-201 (Assiniboine and Sioux Tribes).
330. § 85-20-301.
331. § 85-20-401(Yellowstone National Park, Glacier National Park, Little Bighorn Battlefield National Monument and Bighorn Canyon National Recreation Area).
332. § 85-20-601.
333. § 85-20-501 (Upper Missouri National Wild and Scenic River and Bear Trap Canyon Public Recreation Site).
334. §§ 85-20-701, -801 (1997: Benton Lake and Black Coulee National Wildlife Refuges; 1999: Red Rocks Lakes National Wildlife Refuge and Wilderness Area).
335. § 85-20-901.
336. § 85-20-1001 (Gros Ventre and Assiniboine Tribes).
337. COLO. REV. STAT. § 37-92-101 (2005).
338. §§ 37-92-201, -203(1).
339. § 37-92-102(1).
340. United States v. Dist. Court in and for the County of Eagle (*Eagle County*), 401 U.S. 520, 526 (1971), United States v. Dist. Court in and for Water Division No. 5 (*Water Division No. 5*), 401 U.S. 527, 529-30 (1971), and Colo. River Water Conservation

Colorado's two Indian tribes, the Ute Mountain and Southern Ute Tribes, settled their claims in the late 1980s, relieving great pressure on the adjudication system.[341] The tribes' final water rights claims were resolved with the Colorado Ute Settlement Act Amendments of 2000,[342] with some 60 percent of the Animas-La Plata Project water supply allocated to the two tribes.

In recent years, Colorado law has begun to recognize recreational in-channel diversions for certain governmental entities.[343] Only the Colorado Water Conservation Board has the power and authority to adjudicate and own instream flow and lake level water rights for environmental purposes.[344] The Colorado Supreme Court recently upheld the statute but ruled that the role of the Conservation Board is limited to reviewing the application as filed, and that it does not have any role in quantifying alternative amounts of water for the appropriation.[345]

4. Summary

All three states in the Northern Rockies have made significant progress toward completion of their adjudications. Colorado is almost finished with the review of existing water rights, and the Colorado water courts focus primarily on change of use and augmentation plans. Wyoming's big struggle revolved around the quantification of the water on the Wind River reservation. With that aspect of the case complete, the remaining tasks for the Wyoming adjudication court are, in comparison, less daunting. Montana's Reserved Water Rights Compact Commission has managed to remove a very contentious segment of the adjudication, enabling Montana to complete adjudications in several sub-basins. Montana's success in settling federal reserved rights also provides a model for other states facing similar issues.

For Colorado and Montana, increased development and population growth throughout the West continues to drive water adjudication litigation. In addition, as headwater states for the Colorado River, Columbia River, Rio Grande, and Missouri River, the decisions made by these states may impact downstream neighbors by accurately documenting the amount of water claimed in these headwater states.

Dist. v. United States (*Akin*), 424 U.S. 800, 809 (1976). *See supra* text accompanying notes 237-250.

341. Colo. Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973 (1988).

342. Colo. Ute Settlement Act Amendments of 2000, Pub. L. No. 106-554, § 301, 114 Stat. 2763A-258 (2000).

343. COLO. REV. STAT. § 37-92-102(5) (2005).

344. § 37-92-102(3).

345. Colo. Water Conservation Bd. v. Upper Gunnison River Water Conservancy Dist., 109 P.3d 585, 593 (Colo. 2005).

C. Southwest

The adjudications in the southwest region exhibit a spectrum of different approaches. Arizona, California, New Mexico, and Texas make up this region.[346] Considered together, these four states represent an enormous land mass constituting almost 18 percent of the United States.[347] Population growth in these four states is rapid, and their combined population is about 66 million people, comprising about 22 percent of the total population of the United States.[348]

These states share several major socioeconomic trends that have critical implications for water law and policy in the region. Agriculture is an important industry in each of the states. They are highly urbanized, and with increased population growth, there is high demand for the conversion of agricultural water uses to urban uses. Since the states in this region are generally downstream of headwater states, they depend heavily on groundwater and imported water to supplement inadequate or unstable surface water supplies.

New Mexico and Arizona have a heterogeneous mix of Native American and Hispanic populations, and many water adjudication issues are related to the water rights claimed by these groups. California has the largest Native American population of any state[349] but not many live on reservations or pueblos, so reserved water rights have not been actively asserted in that state. However, there have been several struggles over the state's public trust doctrine, the federal Endangered Species Act, and federal reclamation law. Texas has been able to avoid the complexities of adjudicating federal reserved water rights because of its relatively small amount of federal land.

1. Texas

Texas can claim substantial completion of a comprehensive water adjudication, and it stands out alone in this regard. Its adjudication resulted from a 1950s clash between riparian and appropriative right

346. In socioeconomic research, the question frequently arises about where to put California. The situation is no different when classifying states conducting water adjudications. While northern California could part of the Northwest Region and parts of eastern California resemble the Great Basin, the authors have decided to consider the state as part of the Southwest. This decision is based on several factors: the majority of the population resides south of Tehachapi Pass, and like the other southwestern states, California is predominately desert and struggles to ensure an adequate water supply for its residents.

347. U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 221 tbl.347 (2006), *available at* http://www.census.gov/prod/2005pubs/06statab/geo.pdf.

348. *Id.* at 21 tbl.17, *available at* http://www.census.gov/prod/2005pubs/06statab/pop.pdf (last visited Apr. 8, 2006).

349. *Id.* at 27 tbl.23.

holders, which produced thirteen years of litigation.[350] That litigation involved more than 3,000 parties and cost $10 million in attorneys' fees and court costs.[351]

Dissatisfied with this judicial approach, the state legislature adopted the Water Rights Adjudication Act in 1967.[352] The act authorized an administrative adjudication of all surface water rights in the state.[353] The state district court issued the final decree in the Texas adjudication, but most of the proceedings occurred before the Texas Water Commission and its administrative law judges.[354] In 1990, the Commission completed the adjudication of approximately 18,000 claims, including some relatively small federal claims based on state law water rights.

The adjudication of the upper Rio Grande, however, continues. Increasing growth in the El Paso region has re-ignited controversies in this segment of the river. In 1994, the Commission ordered an investigation of the claims in the area.[355] Major claimants include the United States Bureau of Reclamation, large irrigation districts, and the City of El Paso.[356] The Rio Grande proceedings address only surface water. The adjudication stalled from 1996 to 2002 as the result of litigation that the United States filed in federal district court in New Mexico.[357] After the United States Court of Appeals for the Tenth Circuit abated that litigation, Texas resumed its hearings before the State Office of Administrative Hearings.[358] In 2003, an administrative law judge of that office rejected the argument that jurisdiction over the federal government cannot be secured in an administrative adjudication.[359]

2. Arizona

Compared to Texas, Arizona's progress has been slow. Between 1974 and 1978, water users filed a series of petitions for adjudications with the Arizona Land Department to determine water rights in the

350. Doug Caroom & Paul Elliott, *Water Rights Adjudication-Texas Style*, 44 TEX. B. J. 1183, 1184 (1981).
351. *Id.*
352. *Current Problems: Administrative Government in Texas*, 47 TEX. L. REV. 805, 875 (1969).
353. TEX. WATER CODE ANN. § 11.302 (Vernon 2005).
354. Caroom & Elliott, *supra* note 350, at 1188.
355. MARIAN ROBIN SMITH, UPPER RIO GRANDE ADJUDICATION 6 (2004), *available at* http://www.idwr.state.id.us/water/srba/Conference%202004/TX.doc.
356. *Id.*
357. *Id.*
358. *Id.* at 6-7.
359. *Id.* at 7.

Gila River and Little Colorado River systems.[360] After the water users filed claims and preliminary work began, questions arose as to whether Arizona's administrative adjudications would satisfy the McCarran Amendment. At the same time, the United States and Arizona Indian tribes sought to commence adjudications in federal court. In 1979, the legislature abolished the administrative form of adjudication and authorized adjudications in Arizona's superior court with ample assistance from the Arizona Department of Water Resources.[361]

Since 1979 Arizona's adjudications have proceeded in two cases: the Gila River adjudication – consisting of about 71,300 water rights and nearly 30,000 parties, and the Little Colorado River adjudication – made up of about 13,250 water rights and nearly 5,000 parties.[362] In addition to the multitude of utilities, irrigation entities, mining companies, cities and towns, and individuals, these adjudications also address water rights held for national forests, national parks, public land, and Indian reservations. A superior court judge presides over each case, although recently one judge has served in this role for both cases, and a special master initially hears matters in both adjudications.[363] Arizona is adjudicating both surface water and "subflow," groundwater closely associated with a surface stream, and the state is struggling to distinguish subflow groundwater from all other groundwater.[364]

During the 1980s there were jurisdictional challenges that the United States Supreme Court and Arizona's Supreme Court arbitrated. Concurrently, beginning stages of adjudications moved forward, including the filing of claims, investigations by the Department of Water Resources, and an advance issue resolution process in the Gila River case. Active litigation commenced in the 1990s in both watersheds.[365]

The two adjudications stalled in 1995 when the state legislature passed major modifications to the adjudication statute.[366] Constitutional and McCarran Amendment challenges brought by the United States and many of Indian tribes have since preoccupied the court system. In spite of these delays, the parties have negotiated major settle-

360. Ariz. Sup. Ct., Overview of Arizona's General Stream Adjudications, http://www.supreme.state.az.us/wm/bulletin/Overview.htm (last visited Apr. 9, 2006) [hereinafter Arizona Adjudication Overview].

361. *Id.*

362. *Id.*; Ariz. Dep't. of Water Res., ADWR Adjudications: General Description of Adjudications Program, http://www.water.az.gov/dwr/Content/Find_by_program/Adjudications/default.htm (last visited Apr. 9, 2006).

363. Arizona Adjudication Overview, *supra* note 360.

364. *Supreme Court Affirms Groundwater Decision*, ARIZ. GEN. STREAM ADJUDICATION BULL. 1 (2000), *available at* http://www.supremecourt.az.gov/wm/bulletin/issues/augdec00.pdf.

365. *See* Arizona Adjudication Overview, *supra* note 360.

366. *See, e.g.*, ARIZ. REV. STAT. ANN. §§ 45-258, -261, -262, -263, -264 (2005) (added effective Mar. 17, 1995, others sections were amended).

ments concerning Indian water rights in both adjudications. These include the Ak-Chin Indian Water Rights Settlement Act,[367] the Southern Arizona Water Rights Settlement Act,[368] the Salt River Pima-Maricopa Indian Community Water Rights Settlement Act, [369] the Fort McDowell Indian Community Water Rights Settlement Act,[370] the San Carlos Apache Tribe Water Rights Settlement Act,[371] the Yavapai-Prescott Indian Tribe Water Rights Settlement Act,[372] the Zuni Indian Tribe Water Rights Settlement Act,[373] and the Gila River Indian Community Water Rights Settlement Act.[374]

Negotiations to settle other major aspects of the Little Colorado River adjudications have been underway since 1994. Despite serious setbacks, Arizona's adjudication has still managed to finalize more tribal settlements than any other state.

3. New Mexico

Like Texas, New Mexico commenced its adjudications in the 1950s, but New Mexico's process is far from complete. The state engineer has described the scope of the adjudications as follows:

> The entire Pecos River stream system is the subject of an adjudication that began in 1956. Adjudications of several tributaries to the Upper Rio Grande were started between 1966 and 1983 involving water rights of many of New Mexico's Indian Pueblos and Tribes, the federal government, municipalities, community ditches and thousands of individual defendants. The adjudication of the lower portion of the Rio Grande was originally filed in 1985 by the Elephant Butte Irrigation District but remained inactive until 1996. It involves New Mexico's largest irrigation district, a major federal reclamation project, municipal and county water rights, New Mexico State University, the

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367. Ak-Chin Water Use Amendments Act of 2000, Pub. L. No. 106-285, 114 Stat. 878; Ak-Chin Water Use Amendments Act of 1992, Pub. L. No. 102-497, 106 Stat. 3255, 3258; Act of Oct. 19, 1984, Pub. L. No. 98-530, 98 Stat. 2698; Act of July 28, 1978, Pub. L. No. 95-328, 92 Stat. 409.

368. Southern Arizona Water Rights Settlement Technical Amendments Act of 1992, Pub. L. No. 102-497, 106 Stat. 3256; Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, 96 Stat. 1274, 1285 (1982).

369. Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549.

370. Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, 104 Stat. 4480.

371. San Carlos Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-575, 106 Stat. 4740.

372. Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994, Pub. L. No. 103-434, 108 Stat. 4526.

373. Zuni Indian Tribe Water Rights Settlement Act of 2003, Pub. L. No. 108-34, 117 Stat. 782.

374. Gila River Indian Community Water Rights Settlement Act of 2004, Pub. L. No. 108-451, 118 Stat. 3499.

> City of Las Cruces, and thousands of individual groundwater claims within Doña Ana County. The San Juan River stream system has only been partially adjudicated. The water right claims of the Navajo Nation, the United States, and thousands of private claims have not been surveyed or adjudicated in a comprehensive stream system adjudication required by State law.[375]

The cases collectively involve more than 34,000 claimants and over 370,000 acres of irrigated land.[376] The largest adjudication concerns the Pecos River in southeastern New Mexico with nearly 8,000 defendants.[377] New Mexico's adjudications include surface water as well as groundwater in certain declared basins.[378]

New Mexico is unique among western states in that the majority of its adjudications are in federal court. However, some are in state courts. Several of the state court cases do not address Indian water rights at all. Both state and federal courts have appointed special masters in many of these cases.

New Mexico's adjudications are a hybrid of administrative and judicial activity. The state engineer prepares a hydrographic survey report for an area and then asks the state attorney general to commence the adjudication and notify water users.[379] The water users may accept an offer of judgment from the state, which incorporates the findings set forth in the hydrographic survey report.[380] If the offer is not accepted, the claim moves on to litigation.

Although the 1907 legislation contemplates the adjudication of the entire state, only four adjudications are complete: the Canadian River basin in the northeastern part of the state, the Gila River and Mimbres River basins in the southwestern corner,[381] and the federal court adjudication of San Cristobal Creek (May 17, 1989, involving 61 defendants in an area near Taos).

4. California

Compared to the other states of the southwest region, California takes a laissez-faire approach to its water adjudications. The state does

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375. N.M. OFFICE OF THE STATE ENG'R, INTERSTATE STREAM COMM'N, 2003-2004 ANNUAL REPORT 36-37 (2004), *available at* http://www.ose.state.nm.us/PDF/Publications/AnnualReports/03-04-AnnualReport.pdf [hereinafter 2003-2004 ANNUAL REPORT].

376. N.M OFFICE OF THE STATE ENG'R, 1997-1998 ANNUAL REPORT app. I, tbl.9, *available at* http://www.ose.state.nm.us/publications/97-98-annual-report/append1.htm.

377. *Id.*

378. 2003-2004 ANNUAL REPORT, *supra* note 375, at 36.

379. N.M. STAT. § 72-4-13, -15, -17 (2005).

380. 2003-2004 ANNUAL REPORT, *supra* note 375, at 37.

381. N.M OFFICE OF THE STATE ENG'R, 1999-2000 ANNUAL REPORT fig. A-1, *available at* http://www.ose.state.nm.us/publications/99-00-annual-report.

not have an overall adjudication plan. Rather, adjudications occur when local circumstances warrant. Federal reserved rights issues infrequently arise in these cases. California has generated over 60 final decrees.

California's judicial adjudications deal with surface water and groundwater in the form of "subterranean stream[s] flowing through known and definite channels."[382] In these cases, the State Water Resources Control Board ("SWRCB") acts like a court master holding hearings and preparing reports for the court that set forth findings of fact and conclusions of law.[383] In these proceedings, claimants file a petition with the SWRCB, which then publishes notice to other users.[384] The SWRCB hears evidence of water rights and prepares an order of determination for the river system.[385] The order is set forth in a report to the superior court, and the court resolves any exceptions to the order of determination.[386] The court then issues a decree for the river system.[387] The SWRCB has completed 27 adjudications.[388]

Recent litigation in California's Mojave River basin has been highly contentious. The California Supreme Court ruled that the court must consider the rights of all of the individual claimants in the basin.[389] The ruling reversed a lower court ruling that upheld a settlement in the basin despite the objections of approximately 10 percent of claimants in the case.[390]

5. Summary

The Southwest region's adjudications face similar challenges as other regions because of the region's ever-increasing population growth. However, the Southwest stands alone in that these states must meet the demands of this growth under the most arid of western conditions. Except for Texas, the Southwest region states contain the largest number of Indian tribes, which assert broad *Winters* rights and other water claims. Combined with the disadvantage of being downstream states on many rivers, these pressures on southwestern states in the adjudication of water rights continue to mount.

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382. CAL. WATER CODE § 2500 (West 2006).
383. §§ 2250, 2600.
384. §§ 2525, 2527.
385. §§ 2550, 2600.
386. §§ 2603, 2763.
387. § 2768.
388. Cal. State Water Res. Control Bd., Hearings Program - Water Rights Determinations, http://www.waterrights.ca.gov/hearings/ADJUDICATIONS.htm (last visited Mar. 27, 2006).
389. City of Barstow v. Mojave Water Agency, 5 P.3d 853, 869 (Cal. 2000).
390. *Id.* at 860-61, 873.

D. Great Basin

Nevada and Utah comprise the Great Basin region. This region encompasses steep mountain ranges separated by broad desert flats. Other than the Sierra Nevada Mountains in the extreme west and the Columbia Plateau in the far north, Nevada lies entirely within the Great Basin. The spine of the Rocky Mountains runs down the middle of Utah, with the Colorado Plateau to the east and the Great Basin to the west.

This region receives typically four to eleven inches of annual rainfall.[391] Nevada is the driest state in the country with Utah in second place.[392] Both states are highly dependent upon surface water, especially from the Colorado River. Utah benefits from two major tributaries of the Colorado River: the Green River and the San Juan River. Nevada has only a few small permanent rivers, one of which is the Humboldt River. Most streams in the state are ephemeral and flow only after heavy storms.

Adjudication proceedings are active in Nevada and Utah, although they do not attract the attention of larger proceedings in other states.

1. Nevada

Nevada has nine active adjudications, although these cases are small in scope when compared to those underway in some other western states.[393] Most of these cases involve claims by the Forest Service or the Bureau of Land Management. Nevada has made steady progress adjudicating its water rights, and has done so relatively free of internal conflict. Nevada adjudicates both surface and groundwater, and has processed over 100 cases so far.[394]

Nevada utilizes a hybrid approach, mixing judicial review with administrative action. Oregon's adjudication model greatly influenced Nevada's adjudication statutes. The state engineer determines which basins warrant adjudication, conducts hydrological surveys, and provides notice to potential claimants.[395] The engineer's findings carry

391. Nat'l Park Serv., Mojave National Preserve: North American Deserts, http://www.nps.gov/moja/mojadena.htm (last visited Mar. 27, 2006).

392. Utah Ctr. for Weather and Climate, Climate of Utah: NWS Description of Utah's Climate, http://www.utahweather.org/UWC/utahs_climate/climate_of_utah.html (last visited Mar. 27, 2006).

393. Nev. Div. of Water Res., Query for Adjudication Status, http://ndwr.state.nv.us/Adjudications/listings.cfm (select "In Progress" from "Status" dropdown menu, and submit) (last visited Mar. 27, 2006) [hereinafter Adjudication Query].

394. U.S. Bureau of Land Mgmt., Nevada Water Rights Fact Sheet (2001), http://www.blm.gov/nstc/WaterLaws/nevada.html; Adjudication Query, *supra* note 393 (select "State Decree" from "Status" dropdown menu, then submit).

395. NEV. REV. STAT. §§ 533.090, .095 (Lexis 2005).

significant weight, but the Nevada State Engineer nevertheless has a comparatively lean staff and small budget.

After the state engineer's office issues its report, the court hears any objections to the engineer's proposed determination of rights and enters a final decree.[396] The typical proceeding involves fewer than 100 claimants.

Tribal and federal interests pose a considerable challenge to Nevada's adjudications. The federal government owns approximately 85 percent of the land in the state.[397] The adjudications have used negotiation and settlement strategies extensively to address the federal and tribal claims. Negotiations produced a stipulated settlement in 1996 among the Pyramid Lake Paiute Tribe, the United States, the cities of Reno and Sparks, Washoe County, and the Nevada Division of Environmental Protection that settled litigation over tribal groundwater claims.[398] The federal government's presence was also evident in the historical Orr Ditch Decree litigation involving water of the Truckee River system and the claims of the Pyramid Lake Pauite Tribe.[399]

2. Utah

Utah also embraces a hybrid approach. The thirteen active proceedings,[400] which involve anywhere from 20 to 200,000 claimants, are approximately 25 percent complete. The state is concentrating its efforts on the Utah Lake/Jordan River, Southwestern Colorado River, Bear River, Virgin River and San Rafael River Adjudications. There is a final decree on a portion of the Southwestern Colorado River Adjudication, and a decree is imminent for the Emigration Canyon portion of the Utah Lake/Jordan River Adjudication.[401]

Utah adjudicates both surface and groundwater rights.[402] The state takes a hybrid approach under statutes drafted in 1903, using both judicial and administrative review.[403] As in Nevada, the state engineer's office has a principal role in the adjudications. That office, titled the Utah Division of Water Rights, conducts hydrographic surveys and files

396. §§ 533.170(3), .170(4), .185.

397. *See* Van EE v. Envtl. Prot. Agency, 202 F.3d 296, 299 (D.C. Cir. 2000).

398. Press Release, U.S. Dep't. of Justice, Settlement Reached in Truckee River Dispute, (Oct. 10, 1996), *available at* http://www.usdoj.gov/opa/pr/1996/Oct96/500enr.htm.

399. *See* United States v. Nevada, 412 U.S. 534 (1973).

400. Utah Div. of Water Rights, General Adjudications in Utah, http://nrwrt2.waterrights.utah.gov /adjstatus/ default.asp (last visited Apr. 9, 2006).

401. Office of the Utah Attorney Gen., Natural Res. Div., http://attygen.state.ut.us/Natresourcediv.htm (last visited Apr. 9, 2006).

402. UTAH CODE ANN. § 73-4-3 (2005).

403. Utah Div. of Water Rights, Water Right Information, http://www.waterrights.utah.gov/wrinfo/default.asp (last visited Apr. 9, 2006).

its findings with the court.[404] The court then hears any objections to the report, and may issue an interlocutory order before reaching a final decree.[405]

Similar to Nevada, federal presence in the Utah adjudications is strong because federal land accounts for about 66 percent of Utah's landmass.[406] In 1980, the Utah legislature passed the Ute Indian Water Compact affecting the Uintah and Ouray Reservations, but the Ute tribe has not signed the agreement.[407] The state and the National Parks Service signed the Zion National Park Water Rights Settlement Agreement in 1996, and the Cedar Breaks National Monument and Hovenweep National Monument Water Rights Settlement Agreements in April 2000.[408] In 2000, the state also reached a settlement with the Shivwits Band of the Paiute Indian Tribe.[409]

3. Summary

Both Great Basin states are making modest progress on their adjudication of water rights. The two states have similar models with great reliance on their state engineers. The states also face significant tribal and federal issues because of the large amount of federal land in these states, but they have effectively used settlement processes in adjudications. While these states have faced only mild controversy in their adjudication proceedings to date, population growth and subsequent resource demands will likely place formidable pressures on adjudications in the Great Basin.

E. States with Little Activity

There are six western states beyond those discussed above, that deserve mention: Alaska, Kansas, Nebraska, North Dakota, Oklahoma, and South Dakota. Each state has adjudication statutes on the books, yet there is little current adjudication activity. The statutory schemes adopted in these states tend to be either administrative or hybrid in

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404. § 73-4-3.

405. §§ 73-4-15, -24.

406. Utah Quality Growth Comm'n, Land Ownership Overview 6 (Sept. 13, 2000), http://www.governor.utah.gov/dea/Presentations/PILT1.PDF.

407. § 73-21-3.

408. Zion National Park Water Rights Settlement Agreement (Dec. 4, 1996); *available at* http://wcwcd.state.ut.us/WebPage/Agreements/ZionNationalPark Agreementhtml.html; Cedar Breaks National Monument Water Rights Settlement Agreement (Apr. 24, 2000), *available at* http://www.nature.nps.gov/water/Water_Rights/agreements/Cedar%20Breaks%20Agreement.pdf; Hovenweep National Monument Water Rights Settlement Agreement (Apr. 24, 2000), *available at* http://www.nature.nps.gov/water/Water_Rights/agreements/Hovenweep%20Agreement.pdf.

409. Shivwits Band of the Paiute Indian Tribe of Utah Water Rights Settlement Act, Pub. L. No. 106-263, 114 Stat. 737 (2000).

nature. The adjudications in Kansas, Nebraska, North Dakota and South Dakota are predominantly administrative. The adjudications in Alaska and Oklahoma are hybrid in that an administrative agency conducts the investigation and notice functions and the court enters the final decrees. Some states, like North Dakota, have never initiated adjudication proceedings. South Dakota commenced an adjudication but then abandoned it adjudication in the 1980s.

Nebraska solidified its water rights at the turn of the twentieth century and is not currently pursuing comprehensive adjudications. Instead, each year the Nebraska Department of Water Resources reviews all water rights by basin to detect abandonment and underutilization of water rights.[410]

Oklahoma completed five final decrees in the 1950s. Since then, controversy and disjointed court rulings have stymied the efforts.

The sixth state, Kansas, makes only indirect reference to adjudications in its statutes. Since 1945, the state's chief engineer has issued surface water and groundwater permits.[411]

Adjudication proceedings are unlikely in these states in the near future, but these states are not free of water right conflicts. Alaska faces instream flow and water marketing issues. In Oklahoma, disputes surrounding the hydrologic and legal connection between groundwater and surface water often emerge. In 1998, some Oklahoma tribes voiced concerns about water issues. While North and South Dakota remain free of any major intrastate controversies, they may seek to use adjudications to shore up their claims to the interstate Missouri River or the international Red River. All the while, the dormant claims of Indian tribes and Native Alaskan corporations loom in the background. Currently, there appears to be little appetite for adjudication, but none of these states is immune from the future need for these proceedings.

III. STRUCTURE AND PROCESSES OF MODERN ADJUDICATIONS

Both common themes and distinct differences characterize the western states' approaches to general stream adjudications. These are procedurally and substantively complex proceedings. In this section, we attempt to describe the legal structures and processes used by the states. Two restrictions hamper the comprehensiveness of this review. First, limited space prevents a survey of all states. Therefore, for each feature discussed below, we have provided examples from several states. Second, each state's adjudication is a complex web of legal, hydrologic, political, cultural, and economic considerations. When we

410. NEB. REV. STAT. §§ 46-226, -229.02 (2005).
411. KAN. STAT. ANN. § 82a-706 (2004).

discuss a procedural or structural example from a particular state, we necessarily take it out of context and are often unable to fully explain its origins or significance in that state. With these limitations in mind, we discuss the major features of modern general stream adjudications.

A. Commencement of the Adjudication

States formally commence stream adjudications when an interested party files a complaint or petition with a state's court of general jurisdiction or with a federal district court. However, numerous procedural steps may precede the filing, and water users do not always have standing to bring these actions. One must closely examine individual state statutes to determine how the adjudication will begin and who must be joined to the action.

Most western states allow state administrative officers or agencies to commence an adjudication without waiting for a private suit filed by an interested claimant.[412] In Idaho, five or more claimants may petition the Idaho Department of Water Resources Director to request that the attorney general file an action for a general adjudication.[413] If no claimants come forward, the director may request an adjudication upon his or her own initiative.[414] In Arizona, water users or any state agency other than the Department of Water Resources may request an adjudication.[415] In New Mexico and North Dakota, if private parties have already begun the litigation, the state may expand the case into a general adjudication by intervening and joining all interested claimants.[416] Although the specific commencement procedures of these states vary, the procedure is similar in that an adjudication can result either from private litigation or from purely administrative action.

In a minority of western states, general adjudication may only commence if brought by a private party.[417] In these states, administrative officers or agencies may not bring a basin-wide adjudication suit on their own initiative. In Colorado, a claimant or number of claimants must file the suit in the water court (the United States or the State of Colorado may be such a claimant).[418] In Utah, five or more water users must request an investigation of the water rights and claims by the state

412. ALASKA STAT. § 46.15.166 (2004); ARIZ. REV. STAT. ANN. § 45-252 (2005); IDAHO CODE ANN. § 42-1405 (2005); NEB. REV. STAT. § 46-229.02 (2005); NEV. REV. STAT. § 533.090(2) (2005); N.M. STAT. § 72-4-15 (2005); N.D. CENT. CODE § 61-03-16 (2005); OKLA. STAT. tit. 82 § 105.6 (West 2006); S.D. CODIFIED LAWS § 46-10-1 (2004); TEX. WATER CODE ANN. § 11.304 (Vernon 2005); WYO. STAT. ANN. § 41-4-301 (2005).

413. IDAHO CODE ANN. § 42-1405(1) (2005).

414. § 42-1405(2).

415. ARIZ. REV. STAT. ANN. § 45-252(A) (2005).

416. N.M. STAT. § 72-4-15 (2005); N.D. CENT. CODE § 61-03-16 (2005).

417. CAL. WATER CODE § 2525 (West 2006); COLO. REV. STAT. § 37-92-302 (2005); UTAH CODE ANN. § 73-4-1 (2005); WASH. REV. CODE § 90.03.110 (2006).

418. COLO. REV. STAT. § 37-92-302 (2005).

engineer.[419] If upon investigation an adjudication appears justified, the state engineer files in the district court.[420] Additionally, the court may order an investigation of a watershed in any suit involving water rights.[421] The Utah system differs from the majority of western states in that the state may not take any action without a privately justified suit. The threshold that an adjudication may commence only from private initiative might prevent adjudications in very small basins where there are fewer than five water users.

In *United States v. Bell*, the Colorado Supreme Court addressed the question of whether the United States must be a defendant in an adjudication in order for jurisdiction to be asserted under the McCarran Amendment. The court denied the United States an antedated priority date on a claim for a water right, holding that McCarran jurisdiction is not invoked when the United States appears in the proceeding as an applicant and not as a defendant.[422] A concurring justice stated that the literal language of the McCarran Amendment, "consent is hereby given to join the United States as a defendant," was not satisfied.[423]

In most western stream adjudications, this problem does not arise as the state or water users typically bring the proceedings. Invariably in these adjudications, the United States is a named defendant.

B. Requirement of a Suit

Administrative and judicial functions are mixed in most adjudications. While the United States Supreme Court has not had the opportunity to review a purely administrative adjudication, it is highly probable that such a proceeding, even with the opportunity of an appeal to a court under the state administrative procedures act, would not satisfy traditional notions of a judicial "suit."

Federal courts seem willing to uphold hybrid procedures giving significant authority to the administrative agency so long as there is meaningful supervision and involvement by the judiciary. In *United States v. Oregon*, the United States Court of Appeals for the Ninth Circuit upheld Oregon's reliance on the state's water board to prepare a proposed determination, so long as the United States and tribes had an opportunity for meaningful review by the Oregon courts.[424] The court indicated that "whether the case is initiated in court and then referred to an agency for administrative proceedings, or is initiated through an administrative procedure before being reviewed by a court is not a material distinction for the purposes of the McCarran

419. UTAH CODE ANN. § 73-4-1 (2005).
420. *Id.*
421. *Id.*
422. United States v. Bell, 724 P.2d 631, 643 (Colo. 1986).
423. *Id.* at 647.
424. United States v. Oregon, 44 F.3d 758, 765 (9th Cir. 1994).

Amendment."[425] What the Ninth Circuit Court did not specifically address is whether the United States and tribes have an obligation to participate in the administrative hearings or can wait to litigate their objections for the first time before the court.

Both this decision and earlier United States Supreme Court decisions in *United States v. District Court (Eagle County)*[426] and *Arizona v. San Carlos Apache Tribe,*[427] evidence federal courts giving the states wide latitude in conducting stream adjudications involving the tribes and federal agencies. In *Eagle County* and *San Carlos* the courts cautioned that the state's final assessment of federal rights will be evaluated strictly for fairness and faithful adherence to federal law principles where required.[428] In *San Carlos,* the Court stated that state court decisions that impact Indian rights will receive "a particularized and exacting scrutiny commensurate with the powerful federal interest in safeguarding those rights from state encroachment."[429]

C. Proper Forum

One of first issues to face the courts after the passage of the McCarran Amendment was whether it provided for a waiver of federal sovereign immunity only for federal court proceedings. After passage of the amendment, the federal government removed many of the adjudications brought in state court to federal court. In these instances the implicit policy of the McCarran Amendment, to return water rights adjudication to the states, competed with federal case law requiring federal courts to exercise jurisdiction in all instances that meet the jurisdictional requirements.

Early on, the federal courts recognized that claimants could use the McCarran Amendment to force the federal government to appear in state court actions.[430] What has gradually developed is a body of case law holding that state and federal courts have concurrent jurisdiction over water rights adjudications. However, a federal court may decline to exercise its jurisdiction because of parallel state proceedings only in exceptional circumstances, based on "a careful balancing of the important factors as they apply in a given case, with the balance heavily

425. *Id.* at 767.
426. 401 U.S. 520, 525-26 (1971).
427. 463 U.S. 545, 570-71 (1983).
428. United States v. District Court, 401 U.S. 520, 525-26 (1971); Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 570-71 (1983).
429. 463 U.S. at 571.
430. *In re* Green River Drainage Area, 147 F. Supp. 127, 134 (D. Utah 1956) ("[T]his statute is one simply waiving the immunity of the United States from suit in the class of actions specified . . . it does not purport to be a grant of jurisdiction to any particular court or courts, state or federal.").

weighted in favor of the exercise of jurisdiction."[431] If these factors are satisfied, federal courts can defer to the state court.[432]

1. State Court Preference

Driven by the McCarran Amendment and the cases that interpret it, most modern stream adjudications occur in state courts. Many states waged hard fought battles to ensure that decision-making about water rights would be in their courts. The United States in its trust capacity and various tribes balked at the state court as a decision-maker because of a feeling that the federal court was a far more advantageous forum for their water claims. Most western states settled the question, and doubts about the choice of forum were finally resolved in *Arizona v. San Carlos Apache Tribe.* In *San Carlos Apache Tribe* the United States Supreme Court held that the McCarran Amendment provided a state court with jurisdiction over federal reserved rights even if there was a state enabling act that purported to disclaim jurisdiction over Indian affairs.[433] This holding harmonized circuit court decisions and built upon the Colorado Trilogy, which interpreted the McCarran Amendment as a valid grant of jurisdiction over the United States and Indian tribes.[434] However, the federal courts still hold concurrent jurisdiction over water rights adjudications. Historically, federal courts have declined to exercise jurisdiction over water disputes where there is a parallel state proceeding that meets certain factors.[435] But, some commen-

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431. Moses H. Cone Mem'l Hosp. v. Mercury Constr. Corp., 460 U.S. 1, 16 (1983).

432. Colorado River Water Conservation Dist. v. United States, 424 U.S. 800, 819 (1976);

> By far the most important factor in our decision to approve the dismissal [in *Akin*] was the 'clear federal policy . . . [of] avoidance of piecemeal adjudication of water rights in a river system,' as evinced in the McCarran Amendment. We recognized that the Amendment represents Congress' judgment that the field of water rights is one peculiarly appropriate for comprehensive treatment in the forums having the greatest experience and expertise, assisted by state administrative officers acting under the state courts.

Mercury, at 16 (alteration in original) (citation omitted).

433. Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 564 (1983).

434. The Colorado Trilogy consists of three Supreme Court cases that specifically addressed Colorado's adjudication under the McCarran Amendment. United States v. Dist. Court (*Eagle County*), 401 U.S. 520, 522 (1971) (holding that the United States could be included as a party in the suit in state court); United States v. Dist. Court (*Water Division No. 5*), 401 U.S. 527, 529-30 (1971) (holding that the state court had jurisdiction to adjudicate the United States reserve water rights and that the Colorado system was within the scope of the McCarran Amendment); Colorado River Water Conservation Dist. v. United States (*Akin*), 424 U.S. 800, 809 (1976) (holding that Indian federal reserved rights fit within the McCarran Amendment).

435. *San Carlos Apache Tribe*, 463 U.S. at 569.

tators remain convinced that a state court cannot effectively adjudicate Indian claims.[436]

The modern stream adjudications taking place in several state courts today – proceedings in Arizona, Colorado, Idaho, Oregon, Utah, Washington and Wyoming – have or will have to address federal reserved right claims. In at least two states, New Mexico and Nevada, adjudications are pending in federal court. In New Mexico, the state acquiesced to federal court proceedings in several watersheds.[437] In Nevada, the Pyramid Lake Tribe/Truckee-Carson River litigation has been argued in the federal court.[438]

After passage of the McCarran Amendment, state water users pinned their hopes and resources on the right to determine federal reserved water rights in state courts, but no convincing evidence indicates that state courts generally favor state water users or that federal courts favor federal and tribal parties. For example, the Wyoming state court awarded approximately 500,000 acre-feet in federal reserved rights to the Wind River Reservation tribes.[439] This constitutes about one-fifth of the stream flow in the entire Big Horn River system.[440] Though the Wind River reservation tribes claimed more water with fewer restrictions, it is speculative whether a federal court would have been more generous to the Wind River tribes.

Several states have set up special courts to handle the adjudications. In states like Montana, a special judicial officer handles the case management for the water cases.[441] In Arizona, Idaho, and Wyoming judges often appoint a special master to run the day-to-day functions of the case.[442] In Colorado, the supreme court assigns certain district court judges to the water cases, and the judges prioritize the water cases in their regular docket.[443]

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436. Scott B. McElroy & Jeff J. Davis, *Revisiting Colorado River Water Conservation Dist. v. United States—There Must be a Better Way*, 27 ARIZ. ST. L.J. 597, 648 (1995).

437. Of the thirteen water adjudication cases pending in New Mexico, six are in the U.S. District Court. The oldest federal case in New Mexico's adjudication and perhaps nationally is State of New Mexico *ex rel.* Reynolds v. Aamodt, No. CIV 6639-M (D. N.M.), filed in 1966. *See*, N.M. OFFICE OF THE STATE ENG'R, 1999-2000 ANNUAL REPORT app. A, *available at* http://www.ose.state.nm.us/publications/99-00-annual-report/fnl-apdx-a.html.

438. Carson-Truckee Water Conservancy Dist. v. Clark, 741 F.2d 257 (9th Cir. 1984); Nevada v. United States, 463 U.S. 110 (1983).

439. Wyoming State Water Plan-Bighorn/Wind River Overview, http://waterplan.state.wy.us/sdi/BH/BH-over.html (last visited April 1, 2005).

440. WIND/BIGHORN RIVER BASIN PLAN EXECUTIVE SUMMARY (2003), available at http://waterplan.state.wy.us/plan/bighorn/execsumm.html (approximately 2,700,000 acre-feet annual flow in a normal year).

441. MONT. CODE ANN. §§ 3-7-201,-223 (2005).

442. ARIZ. REV. STAT. ANN. § 45-255 (2005); IDAHO CODE ANN. § 42-1422 (2005).

443. COLO. REV. STAT. § 37-92-203(2) (2005).

Except for some localized proceedings involving a short stream segment, no western stream adjudication proceeds without some reliance upon the expertise of the state administrative agency, the state engineer, department of natural resources, or department of water resources. The extent of this reliance, however, varies from state to state. For instance, in Colorado, a water rights application first must proceed through a water division court hearing before being added to a tabulation of water rights enforced by the state engineer.[444] The Oregon Water Board prepares an initial determination of water rights that predate 1909.[445] The Water Board then files the proposed determination with the court for exceptions, modifications, and further proceedings.[446] In New Mexico, the state engineer acts as a technical advisor and an advocate for its recommendations.[447] Arizona statutes require the state agency perform an ostensibly neutral role involving evaluating claims or preparing preliminary decrees for the court.[448]

The federal and tribal parties in these general stream adjudications have been especially concerned about the state administrative agency's decision-making role and potential bias favoring state water rights holders. When an adjudication is administrative in nature with initial hearings before an agency, federal parties have balked, asserting that such an overly administrative process does not comply with the McCarran Amendment.[449]

In *United States v. Oregon*, the United States Court of Appeals for the Ninth Circuit found that Oregon's administrative adjudication scheme was comprehensive enough to satisfy the McCarran Amendment, especially since there is an opportunity for judicial review of agency decisions.[450] What the court did not specifically address is whether the United States and tribes must participate in the administrative hearings or whether they can litigate their objections initially before the court.

United States v. Oregon may provide a basis for other administrative adjudication or permitting states, like Utah, Alaska, Nevada, South Dakota and North Dakota, to determine federal rights within their current permitting system by incorporating court review but without undertaking an enormous general stream adjudication.

2. Status of Federal Cases

Following *San Carlos Apache Tribe*, the issue of federal court dismissal remained unresolved. In *San Carlos Apache Tribe*, the Court only

444. § 37-92-304(3), (8) (2005).
445. OR. REV. STAT. § 539.130(1) (2003).
446. §§ 539.130(1), .150(1), .150(4).
447. N.M. STAT. § 72-4-17 (2005).
448. ARIZ. REV. STAT. ANN. § 45-256(B) (2003).
449. *See e.g.*, Unites States v. Oregon, 44 F.3d 758, 765-66 (9th Cir. 1994).
450. *Id.* at 770,772.

stated that its decision in *Colorado River* (*Akin*) did not mandate dismissal of federal suits in favor of state court proceedings.[451] In 1983, the Court of Appeals for the Ninth Circuit formulated an answer to this question. In *United States v. Adair*, the United States filed suit in federal district court to determine its federal reserved water rights in the Williamson River watershed.[452] The State of Oregon later initiated proceedings under state law to determine water rights in the larger Klamath Basin.[453] Unlike *San Carlos Apache Tribe*, all the claimants in *Adair*, including the Klamath Tribe and the United States Forest Service, traced the origin of their rights to federal law. The state, relying on *Colorado River*, intervened in the federal proceeding and moved to dismiss the action in favor of the state proceeding.[454]

In upholding the federal district court's adjudication of the federal water rights, the Ninth Circuit noted, "in most cases a federal court should defer to a contemporaneous and comprehensive state water rights adjudication."[455] Yet, the court concluded that the district court did not abuse its discretion in failing to dismiss the federal action in favor of the state proceeding, but that "wise judicial administration" counseled against dismissal.[456] *Adair* was one state's attempt to test the limits of dismissal and one court's refusal to defer a water rights adjudication in favor of a concurrent state court proceeding. While *Adair* has been criticized for running afoul of the Supreme Court's mandate in *Colorado River* and *San Carlos Apache Tribe*,[457] the decision illustrates both a potential limitation on state power and courts' continual struggle with the McCarran Amendment. *Adair* sends a powerful message to the states: the federal forum is still appropriate for adjudications, particularly when the state is unwilling or unable to actively pursue a comprehensive adjudication. Since *Adair*, federal courts have heard suits brought in federal court involving federal or tribal water rights.[458]

D. Comprehensiveness

The next question is how comprehensive a state's water rights adjudication must be in order to assert McCarran Amendment jurisdic-

451. Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 569 (1983).
452. United States v. Adair, 723 F.2d 1394, 1397 (9th Cir. 1983).
453. *Id.* at 1398-99.
454. *Id.* at 1399.
455. *Id.* at 1400.
456. *Id.* at 1401, 1404.
457. Mikel L. Moore & John B. Weldon, Jr., *General Water-Rights Adjudications in Arizona: Yesterday, Today and Tomorrow*, 27 ARIZ. L. REV. 709, 723 (1985).
458. *See, e.g.*, Kittitas Reclamation Dist. v. Sunnyside Valley Irrigation Dist., 763 F.2d 1032, 1033-35 (9th Cir. 1985) (holding that *Colorado River (Akin)* does not mandate abstention); United States v. Alpine Land & Reservoir Co., 174 F.3d 1007, 1016 (9th Cir. 1999) (holding that the district court properly enjoined, at request of state engineer, pending state court proceeding).

tion over federal and tribal parties and to result in decrees that promote good water management. Water rights can be included or not included in an adjudication based on source, geographic location, priority date, legal basis, or type of water use, and it is unclear what exclusions are tolerable under the McCarran Amendment.

These jurisdictional questions have arisen in part, to satisfy the comprehensiveness requirement of the McCarran Amendment. The McCarran Amendment does not explicitly speak of comprehensiveness, but since enactment the need for comprehensiveness has been implicitly grafted upon the statute. Since Congress was attempting to address the futility of many western adjudications due to the United States' absence, the need for comprehensiveness was to be expected. However, Congress did not address the sources of water and water uses that must be before the court.

State and federal courts have repeatedly faced issues of comprehensiveness during the post-McCarran period. Most comprehensiveness issues fall into three major categories: hydrologic or source comprehensiveness, use comprehensiveness, and temporal comprehensiveness.

1. Hydrologic Comprehensiveness

Hydrologic comprehensiveness addresses the sources or bodies of water that must be involved in an adjudication in order for it to yield a meaningful decree. The adjudication of interstate waters, tributaries to a main stem, and groundwater are all included in a consideration of hydrologic comprehensiveness. While the McCarran Amendment consents to an adjudication of a "river system or other source," neither the language nor the legislative history of the enactment provides much guidance.[459]

In 1971, the United States Supreme Court addressed the issue of whether adjudication of the Eagle River System in Colorado, rather than the entire Colorado River and all other tributaries, would satisfy the McCarran Amendment.[460] The Court, in *United States v. District Court (Eagle County)*, dismissed as "almost frivolous" the United States' argument that the adjudication must include the entire interstate river system.[461] The Court ruled that McCarran's use of "river system" means that portion of the river within a particular state.[462]

The Idaho Supreme Court addressed the issue, affirming a trial court decision requiring that once the state decided to adjudicate a particular river, the adjudication must include the entire river and its

459. 43 U.S.C. § 666(a) (2000).
460. United States v. District Court (*Eagle County*), 401 U.S. 520, 523 (1971).
461. *Id.*
462. *Id.*

tributaries, even if they have been previously adjudicated.[463] In this instance, Idaho courts seem to have taken a position even more comprehensive than the United States. The federal government argued that inclusion of the entire river system was not necessary as long as the boundaries of the adjudication were clear and made hydrologic sense.

The New Mexico Supreme Court addressed this issue based on the unique facts of an adjudication of the Rio Grande between Elephant Butte Dam and the New Mexico-Texas state line.[464] The United States moved to dismiss this adjudication on the basis that the McCarran Amendment was not satisfied.[465] The court recognized that this segment would not constitute a river system under the McCarran Amendment.[466] However, the Rio Grande Compact provides an exception to this general rule because the compact mandates that upstream users deliver a set amount of water to the dam, essentially creating a new river at the dam for apportionment among downstream users.[467]

The problems of hydrologic comprehensiveness become more acute when addressing what forms of groundwater an adjudication of surface water sources must include. Many western states, such as Colorado, Idaho, Nevada, and Utah, adjudicate both surface and groundwater sources, while other states, like New Mexico, provide separate statutory procedures for adjudicating groundwater.[468] In a few states, such as Arizona and Texas, the hydrologic myth that groundwater is somehow separate from surface water prevails.[469]

The groundwater-surface water relationship is particularly problematic in Arizona where, since the 1930s, state law has excluded groundwater from the legal regime governing surface water.[470] Similar issues have arisen in Nebraska, such as in the *Spear T* case where the state supreme court relied on tort liability to solve groundwater and surface water disputes.[471] In Texas, groundwater is a private property

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463. *In re* Snake River Basin Water System, 764 P.2d 78, 86 (Idaho 1988).

464. Elephant Butte Irrigation Dist. v. Regents of N.M. State Univ., 849 P.2d 372, 373 (N.M. Ct. App. 1993).

465. *Id.* at 374.

466. *Id.* at 378.

467. *Id.*

468. COLO. REV. STAT § 37-82-101 (2005); IDAHO CODE ANN. § 42-103 (2005); NEV. REV. STAT. § 533.030 (LEXIS 2005); UTAH CODE ANN. § 73-4-3 (2005); N.M. STAT. § 72-5A-1 (2005).

469. ARIZ. REV. STAT. ANN. § 45-141(A) (2005); TEX. WATER CODE ANN. § 11.302 (Vernon 2005); *see also* Robert Jerome Glennon & Thomas Maddock, III, *In Search of Subflow: Arizona's Futile Effort to Separate Groundwater from Surface Water*, 36 ARIZ. L. REV. 567, 590 (1994) (describing the fallacy upon which Arizona's bifurcated system is based).

470. *See* Maricopa County Mun. Water Conservation Dist. No. 1. v. Sw. Cotton Co., 4 P.2d 369, 375 (Ariz. 1931).

471. Spear T Ranch, Inc. v. Knaub, 691 N.W.2d 116, 129, 139 (Neb. 2005) (adopting restatement approach that groundwater user is not subject to liability unless interfer-

right tied to the land.[472] The Washington adjudication has been ruled comprehensive under the McCarran Amendment, even though it does not include groundwater. Oregon considers groundwater rights in a separate adjudication from the adjudication determining pre-1909 water rights, leaving the interface between groundwater and surface water for another day.[473]

2. Use Comprehensiveness

In order to satisfy the McCarran Amendment, adjudications must also include a sufficient number of water uses. The important question is whether the adjudication is sufficiently broad to include those uses having the potential to affect senior federal or tribal rights.

Only the general language from court decisions, not specific holdings, affords any guidance in determining what water uses must be joined to ensure the comprehensiveness of an adjudication. In Arizona's *Hurley v. Abbott*, the federal district court denied the Salt River Project's petition to conduct further proceedings on the Kent Decree by holding that Verde River parties were not before the court.[474] The court indicated:

> [T]he only proper method of adjudicating the rights on a stream is to have all owners of lands in the watershed and all appropriators not in the watershed in court at the same time. Due to the [interrelated] nature of appropriative rights the extent of the rights of others must depend on the rights of one user, and vice versa, with the result that the owners of the parcels outside the Kent Decree are not a class, and *all* must be made a party to the suit.[475]

Further, the court held that "all landowners in the watershed, or who appropriate from it, must be or have been joined, and prayer must be made for an adjudication of each of their respective rights."[476] Throughout the years, other decisions have echoed this general language.[477]

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ence with surface user has a "direct and substantial effect" on the watercourse and causes unreasonable harm).

472. Houston & T.C. Ry. Co. v. East. 81 S.W. 279, 281 (Tex. 1904).

473. OR. REV. STAT. § 537.605(1) (2003).

474. Hurley v. Abbott, 259 F. Supp. 669, 669 (D. Ariz. 1966).

475. *Id.* at 669-70 (citations omitted).

476. *Id.* at 670; *see also* Thomas H. Pacheco, *How Big is Big? The Scope of Water Rights Suits Under the McCarran Amendment*, 15 ECOLOGY L.Q. 627, 644 (1988) ("The Court was led to these extensions of state court jurisdiction by its finding that Congress intended the McCarran Amendment to foster the adjudication of all water rights in a water source, without exception.").

477. Miller v. Jennings, 243 F.2d 157, 159 (5th Cir. 1957) ("There can be an adjudication of rights with respect to the upper Rio Grande only in a proceeding where all persons who have rights are before the tribunal.").

Many water rights, such as those for stock watering and domestic uses, utilize small amounts water and have very little potential to affect federal and tribal rights in water-rich states. Some states, such as Arizona, specifically exclude these small rights, often referred to as *de minimis* rights, from the adjudication process.[478] In Montana, stock ponds, stock watering rights, and domestic uses are exempt from adjudication, although many holders of those rights filed claims in order to obtain an enforceable adjudicated right.[479] In Colorado, water users can hold exempt well permits for in-house use and limited irrigation (one acre) without petitioning for an adjudication in the water court, but they bear the risk of being unable to enforce their rights under a divisional decree.[480]

Other states did not address the small uses in their statutes and have had to process hundreds or thousands of very small claims. A major battle ensued before the special master in Arizona's Gila River Adjudication to quantify and determine the impact these small uses had on the San Pedro River. The Arizona legislature later amended the adjudication statute to address these small uses.[481]

3. Temporal Comprehensiveness

Another troublesome comprehensiveness problem is deciding what priority dates must be included in an adjudication in order to be comprehensive. Because of the inherently lengthy and cumbersome nature of an adjudication, it is almost impossible to fold the most recent water rights – usually ones permitted by the state administrative agency – into the case.

Approaches to this problem have resulted in great variability among western states. Some states have established recent cut-off dates for the rights that will be adjudicated, and other states have taken the position that the only rights that need to be adjudicated are those established before the state initiated its water permitting system.[482] Montana only adjudicates rights established before July 1, 1973.[483] The Montana Department of Natural Resources and Conservation permits and certifies uses established after that date.[484] In Wyoming, the Big Horn River Adjudication process reviews only those unadjudicated permits filed prior to December 31, 1984.[485] Arizona required existing

478. ARIZ. REV. STAT. ANN. § 45-258 (2005).
479. MONT. CODE ANN. § 85-2-222 (2005).
480. COLO. REV. STAT. § 37-92-602 (2005).
481. ARIZ. REV. STAT. ANN. § 45-258 (2005).
482. Pacheco, *supra* note 476, at 657.
483. MONT. CODE ANN. § 85-2-212 (2005).
484. § 8-2-301.
485. *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys., 85 P.3d 981, 986 (Wyo. 2003).

water users to file their statements of claim by a deadline that, depending on the watershed, varied from 1983 to 1987. An infrequently used new summons procedure established by pretrial order in the Gila River case allows new users to join the stream adjudication. In his reports to the assigned judge in both adjudications, the special master has recommended a procedure during the last stage of the adjudication to identify and fold in all water rights established since the original filing deadlines.

Oregon's adjudication is the least comprehensive in temporality. There, the state is adjudicating only pre-1909 water rights, maintaining that all rights established since that date have essentially been adjudicated through the administrative procedures of the department of water resources.[486] The adequacy of this pre-1909 adjudication was an issue before the United States Court of Appeals for the Ninth Circuit in *United States v. Oregon.*[487] The court held that limiting the adjudication to pre-1909 water rights still satisfies the McCarran Amendment.[488] The court stated, "[t]he comprehensiveness standard requires the consolidation of existing controversies, not the reopening of settled determinations."[489] Because Oregon's procedure satisfied the McCarran Amendment, the United States and the Klamath Tribe had to participate in the Klamath Basin adjudication.

In finding that Oregon's hybrid adjudication satisfies the McCarran Amendment, the Ninth Circuit also indicated, "[w]e agree with the State that whether the case is initiated in court and then referred to an agency for administrative proceedings, or is initiated through an administrative procedure before being reviewed by a court is not a material distinction for the purposes of the McCarran Amendment."[490] The court referred to a similar argument that the United States made in 1916 in *Pacific Live Stock Co. v. Oregon Water Board.*[491] The court stated the following: "[t]hat an administrative agency, magistrate, referee or special master should 'pave the way for an adjudication by the court' does not make the label 'suit' inappropriate."[492] The court held that although waiver depends on explicit text of the amendment, the "scope of such a waiver can only be ascertained by reference to underlying congressional policy."[493] Therefore, "[w]hen Congress consented to the joinder of the United States in comprehensive lawsuits, we pre-

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486. OR. REV. STAT. §§ 539.010(1), (8), .270 (2003).
487. United States v. Oregon, 44 F.3d 758, 767-68 (9th Cir. 1994).
488. *Id.* at 768.
489. *Id.*
490. *Id.* at 767.
491. *Id.* at 765.
492. *Id.*
493. *Id.* at 765-66, *quoting* Franchise Tax Bd. v. U.S. Postal Service, 467 U.S. 512, 521 (1984).

sume that it had in mind these statutory procedures which made large scale comprehensive adjudications possible."[494]

4. Myth of Comprehensiveness

Comprehensiveness is a touchstone of nearly all western water rights adjudications. The usual arguments are that comprehensiveness avoids recurring water rights contests by new or undiscovered claimants, makes for more efficient administration of the resource, and provides certainty to the parties in a decree. Comprehensiveness is required for the waiver of sovereign immunity under the McCarran Amendment. There is some question as to whether the comprehensiveness requirement has really provided the safeguards and efficiencies hoped for by its proponents. The large-scale adjudications have often created a blizzard of paperwork, imposed unusual burdens of notice on the court and claimants, and threatened to run on for decades. Parties who cannot afford representation find themselves wrapped in a complex legal proceeding taking more time from their work and play than they can afford. Seldom has the legal system seemed so ponderous.

Comprehensiveness is a requirement of the federal government's waiver of sovereign immunity embodied in the McCarran Amendment.[495] There are few western watersheds without inchoate federal or Indian rights. Federal lands lie downstream of every western watershed under adjudication. These federal interests could be tribal, federal installations, included in international treaty, or found under federal law.[496] Without quantification of federal reserved water rights, rights from state decrees would be thin reeds.

In addition, there are many practical reasons for stream adjudications to be comprehensive. Among these reasons are the following:

- If federal parties are joined in an adjudication of state-based rights, junior state-based water users will finally be able to learn how senior and extensive these federal and tribal claims are and whether they may interfere with the state-based rights.

- Federal agencies and tribes desire comprehensive adjudications in order to avoid the possibility of "piecemeal" adjudication, either as

494. *Id.* at 767.

495. *See, e.g.*, Colo. River Water Conservation Dist. v. United States, 424 U.S. 800, 819 (1976).

496. *See, e.g.*, Federal Power Act, 16 U.S.C. §§ 791a-828c (2000); Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. §§ 839–839h (2000); Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451–1465 (2000); Fishery Conservation and Management Act, 16 U.S.C. 1801- 1883 (2000); Water Pollution Prevention and Control Act, 33 U.S.C. §§ 1251–1387 (2000).

a result of numerous separate cases pending in a river system at one time or numerous separate cases over time, where the United States is repeatedly required to participate in litigation concerning the water rights in that river system. It is somewhat ironic that the scale of modern adjudications has required the federal government to participate constantly for many decades in these ongoing cases.

- To the extent that potentially interfering water rights are left outside an adjudication, all parties to the case, whether they are federal agencies or state users, face devalued water rights resulting from the uncertain priority and extent of unadjudicated rights.

- Comprehensive adjudications are important to state water management agencies, as well as to major water users, in that they provide information about water supply and demand in the watershed. In some states, these adjudications have yielded the first and only comprehensive list of water rights throughout the state.

- One commentator has argued that comprehensiveness is necessary as an aspect of fairness and reciprocity. Since all federal rights have been joined, it "seems only appropriate that all state law water rights also should be adjudicated in McCarran Amendment proceedings."[497]

- Finally, comprehensive adjudications provide a basis for all water users to protect their water rights from unauthorized uses or interfering junior uses.

Thus, comprehensiveness requires that states consider sufficiently large watersheds and various sources and uses of water in an adjudication. Courts must quantify and prioritize any use that they could reasonably expect to impact downstream senior appropriators. Practically, at some point there is a diminishing return for including every water use in a watershed. States that pursue less exhaustive adjudications either have permanent adjudication courts, like Colorado, or have omitted large categories of rights from adjudications, like Oregon.[498] Some states have excused domestic and stock watering uses from the adjudication process.[499] Normal civil suits to settle water disputes are still available in most states. However, even small water rights conflicts often escalate into larger watershed-wide determinations.

497. Pacheco, *supra* note 476, at 646.
498. *See id.* at 643.
499. *Id.* at 654.

E. *Inter Sese* Requirements

The comprehensiveness requirement of the McCarran Amendment is closely linked to the requirement of an *inter sese* adjudication. While the comprehensiveness criterion refers to what water users must be joined in the litigation, the *inter sese* criterion refers to which water users are subject to challenge by other water users.

The courts have authored numerous opinions in which they have determined that adjudications that initially appeared to be McCarran-type proceedings were not due to the configuration of rights in the litigation. For example, in *Miller v. Jennings*, plaintiffs claimed they represented 90 water users in their district in a suit against Bureau of Reclamation officials and 11 individuals in another water improvement district who allegedly represented a class of over one thousand other water users along the Rio Grande in southern New Mexico and northwestern Texas.[500] The plaintiffs urged that the United States could be joined in this case under the McCarran Amendment, but the court held that a defendant class action did not make this litigation into a general stream adjudication because not all parties with an interest in the suit were present before the court.[501] Thus, "[t]here can be an adjudication of rights with respect to the upper Rio Grande only in a proceeding where all persons who have rights are before the tribunal."[502]

The courts have also held that bipolar water rights litigation, that is, where the United States is against another party, will usually not satisfy the McCarran Amendment. Thus, a case is not comprehensive when focused exclusively on the federal rights.[503] In several cases, the courts have held that condemnation suits, which essentially place the United States in a position opposite to landholders, are not McCarran proceedings.[504] Thus, the courts contemplate a McCarran proceeding to be one where the United States competes as a water user for a determination of respective rights rather than a proceeding where the United States is against all other claimants in the watershed.

The Colorado Trilogy, those three cases arising from Colorado's unique water adjudication, provide the best available guidance on the meaning of an *inter sese* adjudication. The Colorado legislature sub-

500. Miller v. Jennings, 243 F.2d 157, 158 (5th Cir. 1957).

501. *Id.* at 160.

502. *Id.* at 159.

503. Nevada v. United States, 279 F.2d 699, 701 (9th Cir. 1960) ("Nevada is not here seeking, either for herself or for others, the judicial establishment of any particular *usufructory* right. Rather, she seeks a declaration of her sovereign, proprietary right to the corpus or control of waters in general.") (citation omitted).

504. Town of Durham v. United States, 167 F. Supp. 436, 440 (D.N.H. 1958); Seacoast Water Comm'n v. City of Portsmouth, 203 A.2d 649, 653-56 (N.H. 1964).

stantially altered the adjudication law in 1969.[505] To appreciate the holdings of this Colorado Trilogy, it is necessary to understand Colorado law both before and after the 1969 amendments.

Colorado's adjudication procedures stem from legislation passed in 1879 and 1881.[506] The legislation vested the adjudication power in the state district courts with water districts established as the primary unit of adjudication.[507] While the initial legislation contemplated the adjudication of irrigation rights, jurisdiction was expanded in 1943 to include all beneficial uses.[508] The 1943 legislation allowed a junior right holder to initiate supplemental proceedings to adjudicate new water uses.[509] A water right decreed in a supplemental proceeding, however, could not have a priority date earlier than the date of the proceeding.[510] This legislation also allowed a water user to challenge applications in other water districts if the use in that district would injure the challenger's rights.[511] These adjudications only address rights to water in rivers or tributaries; they do not address rights to water in canals or pipelines.

The Water Right Determination and Adjudication Act of 1969 consolidated Colorado into seven water divisions, each governing a major water basin.[512] One district judge serves as the water judge with staffing assistance from a water clerk and water referees as necessary.[513] For our purposes, the 1969 law's most significant change provided regularity to the supplemental adjudications. Under the earlier law, supplemental proceedings happened somewhat infrequently since a water user who desired adjudication had to initiate supplemental proceedings by petition.[514] Under the new law, supplemental proceedings are a regular occurrence before the referee or court.

The *inter sese* problem stemmed from the fact that few if any federal water rights had been adjudicated in Colorado water courts. If federal and tribal rights were subject to adjudication in supplemental proceedings, would these federal and tribal rights all be junior to the rights adjudicated earlier in original and supplemental proceedings? Would they be subordinate to these state-law decreed water rights even though the federal and tribal rights would normally have senior priority dates based on congressional legislation or presidential action?

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505. COLO. REV. STAT. § 37-92-101 (2005).
506. Act of Feb. 19, 1879, 1879 Colo. Sess. Laws 94; Act of Feb. 23, 1881, 1881 Colo. Sess. Laws 142.
507. COLO. REV. STAT. § 37-92-203(1) (2005).
508. Act of April 19, 1943, 1943 Colo. Sess. Laws 613.
509. 1943 Colo. Sess. Laws 618.
510. *Id.* at 623.
511. *Id.* at 625.
512. COLO. REV. STAT. § 37-92-201 (2005).
513. *Id.* §§ 37-92-203 to -204.
514. 1943 Colo. Sess. Laws 628.

This problem first became apparent in *United States v. District Court in and for Eagle County* (*Eagle County*), when the United States attempted to quash a supplemental adjudication because the Colorado proceedings did not satisfy the McCarran Amendment.[515] The United States argued that the supplemental adjudication was not a general stream adjudication because it did not address the entire river system and resulted in different decrees in different districts.[516] The Colorado Supreme Court attempted to alleviate federal fears by indicating that "we hold that under its plenary power a Colorado district court can make the relative rights of the United States a subject of its decree and can bring under its jurisdiction additional necessary parties in order to make such a decree fully valid, effective and enforceable."[517]

While the court did not definitively decide whether the United States would be bound by the previous decrees, it indicated "offhand" that the United States would not be bound.[518]

> The fact that our statutes do not provide for the adjudication of the rights of the United States with priorities prior to the dates of later decrees does not mean that our district courts in a water adjudication cannot determine the rights of the United States in relation to decreed rights. On the contrary, our district courts have that [plenary] jurisdiction.[519]

The court almost apologetically indicated, and essentially promised, that the United States' claims would be adjudicated "just as adequately as in any other forum—and perhaps more adequately."[520]

This case reached the United States Supreme Court in 1971, where the Court considered the 1963 statutory precursor to the Water Right Determination and Administration Act.[521] The main issue before the Court was whether the McCarran Amendment constituted a waiver of sovereign immunity to have the reserved rights of the United States, in this case the rights pertaining to the White River National Forest, adjudicated in a state general proceeding.[522] The Court ruled that the adjudication of these reserved rights was proper.[523] In addressing the United States' second argument, that previous decrees in a water division did not bar the federal government, Justice Douglas answered rather cryptically:

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515. 458 P.2d 760, 761-62 (Colo. 1969).
516. *Id.*
517. *Id.* at 767.
518. *Id.* at 771.
519. *Id.* at 772.
520. *Id.* at 773.
521. United States v. District Court, 401 U.S. 520, 521 (1971).
522. *Id.* at 522-23.
523. *Id.* at 522.

> We think that argument is extremely technical . . . . The absence of owners of previously decreed rights may present problems going to the merits, in case there develops a collision between them and any reserved rights of the United States. All such questions, including the volume and scope of particular reserved rights, are federal questions which, if preserved, can be reviewed here after final judgment by the Colorado court.[524]

Justice Douglas repeated this position in a companion case, *United States v. District Court in and for Water Division No. 5* (*Water Div. No. 5*), released the same day as *Eagle County*, but decided under the 1969 Water Rights Determination and Administration Act.[525] Here, the United States contended that the monthly supplemental proceedings were more cumbersome than the earlier law and resulted in piecemeal litigation.[526] Douglas rejected this contention observing that:

> [t]he present suit, like the one in the *Eagle County* case, reaches all claims, perhaps month by month but inclusively in the totality; and, as we said in the other case, if there is a collision between prior adjudicated rights and reserved rights of the United States, the federal question can be preserved in the state decision and brought here for review.[527]

This substantially undermined the United States' concerns about piecemeal litigation. Presumably, the United States is obliged to participate in monthly proceedings indefinitely or at least so long as new appropriations or conditional water rights remain at issue in Colorado.

The holdings in *Eagle County* and *Water Division No. 5* left many observers wondering how federal and tribal water rights recognized in Colorado's supplemental proceedings could have effective priority dates senior to water rights decreed in earlier proceedings. The Colorado Supreme Court finally addressed this issue in *United States v. Bell*.[528] The Colorado Supreme Court reviewed how the supplemental procedures operated and held that:

> [b]ecause the United States was not subject to joinder prior to the McCarran Amendment and its absence from previous adjudications was privileged, once it is properly joined and provided the opportunity to adjudicate its claims, it may be decreed reserved water rights

524. *Id.* at 525-26.
525. 401 U.S. 527, 528-30 (1971).
526. *Id.* at 529.
527. *Id.* at 529-30.
528. United States v. Bell, 724 P.2d 631, 641-42 (Colo. 1986).

> with priorities that antedate other adjudicated water rights to the date of the reservation.[529]

Thus, if the United States asserted its claims in a water division during the first available supplemental proceeding after the 1969 legislation, those claims, once established, could have a priority date relating back to congressional or executive action. This priority date would trump junior priorities determined in any intervening supplemental decree.[530] Finally, the courts gave a complete answer as to how Colorado's segmented procedure could give full recognition to federal and tribal rights.

In regard to the *inter sese* issue, these Colorado cases suggest that segmented procedures can be utilized in an adjudication so long as the United States has ample opportunity to prove its rights and to have those rights effectively enforced against junior rights. At the same time, these cases disfavor procedures that effectively shelter a species or category of state rights from federal challenge, if those rights have the potential to interfere with the federal or tribal rights.

Several modern adjudications face an especially challenging *inter sese* issue: how to integrate separate watershed or subbasin decrees into a comprehensive basin-wide decree. In New Mexico, for instance, different courts adjudicate issues arising from the Rio Grande mainstream than from the Rio Grande tributaries. In other states, including Arizona and Montana, once work is complete in one area, the adjudication reopens in another area. In these circumstances, water users along the different tributaries or sub-basins have not had the opportunity to object to the water uses established in hydrologically connected areas. For example, the rights of water users A and B have been adjudicated in separate watersheds; but user A, the downstream junior user, has not had the opportunity to object to user B's upstream senior right. User A may have new arguments or information that would reduce user B's right. Unless user A has the opportunity to have the court examine these arguments, user A may be deprived of due process and the adjudication may not satisfy the McCarran Amendment *inter sese* requirements.

Because of this dilemma, some states have modified their adjudication statute or case management plan to include a final phase of *inter sese* objections.[531] At this point, tens of thousands of rights will be involved in adjudications. The procedural challenge of such an adjudication, much less the resolution of substantive hydrologic and legal issues, will be daunting.

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529. *Id.* at 642.

530. *See id.*, n.14.

531. *See, e.g.*, ARIZ. REV. STAT. ANN. § 45-252(D) (2005); MONT. CODE ANN. § 85-2-237 (2005).

F. Applicable Law

While the language in the McCarran Amendment explicitly waives the United States' sovereign immunity in some water rights adjudications, it is less clear whether the Amendment also provides a federal court with jurisdictional basis for the adjudication.[532] That is, does the McCarran Amendment provide federal question jurisdiction for the federal district court. This issue has frequently arisen when the United States has attempted to remove state court adjudications to federal court, claiming a federal law basis for the federal court to hear the case. In an early Utah case, *In re Green River Drainage Area*, the court ruled that the McCarran Amendment does not provide federal question jurisdiction.[533]

The Fifth Circuit in 1991 further elaborated on this holding in *Guadalupe-Blanco River Authority v. City of Lytle.*[534] In this case the River Authority, an entity organized under Texas law, sued in state court for an adjudication of water rights to the Edwards Aquifer.[535] The suit named 200 users as defendants, including the U.S. Army and Air Force.[536] The United States removed the case to federal court and sought dismissal on the grounds of sovereign immunity.[537] The federal district court held that the United States had waived immunity under the McCarran Amendment.[538] Further, the court determined the removal was improper under the federal officer removal statute which allows federal officers, but not federal agencies to remove state court actions to federal court.[539] The court determined that there was no other basis for federal jurisdiction under either the court's diversity or federal question jurisdiction.[540] The court cited federal law for the proposition that "if at any time before final judgment it appears that the district court lacks subject matter jurisdiction, the case shall be remanded [to state court]."[541] The federal courts have held, however, that the United States does not waive its federal law defenses when it

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532. 43 U.S.C. §666(a) (2000).
533. 147 F. Supp. 127, 134 (D. Utah 1956).
534. Guadalupe-Blanco River Auth. v. City of Lytle, 937 F.2d 184, 185 (5th Cir. 1991).
535. *Id.*
536. *Id.*
537. *Id.*
538. *Id.*
539. *Id.*
540. *Id.*
541. *Id.* at 185-86 (citing 28 U.S.C. § 1447(c) (2000)). Federal district courts have held that the remand of an adjudication back to state court is not reviewable by interlocutory appeal to the United States Court of Appeals. *In re* Bear River Drainage Dist., 267 F.2d 849, 851-52 (10th Cir. 1959).

waives its sovereign immunity in federal court.[542] Also, federal law determines the nature and extent of federal and tribal water rights.[543]

Another question raised by the McCarran Amendment is whether state or federal procedural law should apply when adjudicating federal water interests. In *United States v. Bell*, the Colorado Supreme Court ruled that the state water court was correct in denying the federal government the right to relate an amended claim back to the filing date of the original claim, a difference of several decades.[544]

United States v. Idaho ex rel. Director, Department of Water Resources addressed the question of whether state or federal procedural law applies in water right adjudications.[545] In this case, the United States objected to Idaho's refusal to accept federal claim notices because the claims were not submitted with the required filing fees.[546] Idaho argued that it could levee fees because the McCarran Amendment requires the United States to comply with all state laws relating to adjudications.[547] The United States argued that the federal government only had to comply with state *substantive* law pertaining to the adjudication, and not laws governing fees or procedure.[548]

The Supreme Court rejected both arguments. The Court held that the language in the McCarran Amendment does not permit states to require the federal government to pay costs.[549] The amendment provides that "no judgment for costs shall be entered against the United States."[550] The Court, however, also rejected the United States' argument that state procedural law was inapplicable to federal interests in adjudications.[551] The court reasoned that "such a construction would render the amendment's consent to suit largely nugatory, allowing the Government to argue for some special federal rule defeating established state-law rules governing pleading, discovery, and the admissibility of evidence at trial."[552] The federal government is required to follow both procedural and substantive state laws.

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542. Nevada *ex rel* Shamberger v. United States, 165 F. Supp 600, 604 (D. Nev. 1958).
543. State *ex rel.* Greeley v. Confederated Salish & Kootenai Tribes, 712 P.2d 754, 762 (Mont. 1985); United States v. Superior Court, 697 P.2d 658, 674 (Ariz. 1985).
544. United States v. Bell, 724 P.2d 631, 645 (Colo. 1986).
545. United States v. Idaho *ex rel* Dir., Idaho Dep't.of Water Res., 508 U.S. 1, 4-6 (1993).
546. *Id.* at 4.
547. *Id.* at 6.
548. *Id.*
549. *Id.* at 7-9. Fees may still be required. Fees are amounts intended to defray court expenditures, while costs are amounts intended to defray the victor's expenses. *Id.* The Court may have also been swayed by the ultimate $10 million being assessed by Idaho, although this was not an overt basis for the opinion.
550. 43 U.S.C. § 666(a) (2000).
551. *Idaho Dep't. of Water Res.*, 508 U.S. at 6-8.
552. *Id.* at 7.

These issues have been described as a reverse *Erie* problem.[553] Under *Erie Railroad Company v. Tompkins*, an important federalism case in the 1930s, federal courts in diversity actions use their own procedure, but are required to apply state substantive law.[554] Thus, in general stream adjudications, states may apply their law, but only to the extent that it does not defeat the nature and extent of federal agency and tribal rights as determined by federal law.[555]

G. Service of Process, Notice, and Claimant Information

Another challenge for most general stream adjudications is effectuating proper notice to all water users in a basin in a manner that satisfies due process and provides a claimant with an easily understandable process. Notice must be "reasonably calculated, under all the circumstances, to apprise interested parties of the pendency of the action and afford them an opportunity to present their objections."[556] This due process requirement presents two challenges for the adjudication court: (1) how to provide *original* notice of the adjudication to water users, and (2) how to provide *ongoing* notice of adjudication rulings, and developments, especially as the adjudication may span decades and may involve thousands of parties. For both purposes, courts have usually relied on mailed notice to all reasonably ascertainable parties and publication notice to all others, rather than personal service.[557]

1. Initial Notice

Because of the sheer numbers of water users in the various river basins, states are concerned about proper initial notification procedures. For instance, in Arizona, the State Land Department and Department of Water Resources mailed adjudications summons to almost one million people who owned property in the state.[558] Indeed, most adjudication statutes assign a state agency with responsibility for notice and joinder of parties.[559]

The states vary widely in the way they have provided notice of their adjudications to water users. Without statutory guidance, the Wyoming court developed specific procedures that the state must follow for their

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553. *See, e.g.*, JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 828 (3d ed. 2000); Erie R.R. Co. v. Tompkins, 304 U.S. 64 (1938).

554. *Erie*, 304 U.S. at 78-80.

555. *See, e.g.*, United States v. City and County of Denver, 656 P.2d 1, 34-35 (Colo. 1982) (noting state forfeiture laws may not defeat dormant federal reserved water rights).

556. Mullane v. Cent. Hanover Bank & Trust Co., 339 U.S. 306, 314 (1950).

557. *See, e.g.*, ARIZ. REV. STAT. ANN. §§ 45-253(A)(2), (B) (2005).

558. *In re* Rights to the Use of the Gila River, 830 P.2d 442, 446 (Ariz. 1992).

559. A. Lynne Krogh, *Water Right Adjudications in the Western States: Procedures, Constitutionality, Problems & Solutions*, 30 LAND & WATER L. REV. 9, 17 (1995).

notification of the recommended action on a state based water right. The Amended Big Horn Adjudication Phase III Procedures contemplate similar procedures as those used by the Wyoming Board of Control for the adjudication of permits for ditches, enlargements, reservoirs and stock reservoirs. To this end, the Board of Control's staff reviews permits, determines the owner(s) of record under the permit, and notifies the owners via registered mail.[560] However, the Phase III procedures account for special circumstances, which, if met, allow the Board of Control to notify water users of its report and recommendation by publication. Publication is allowed under the following circumstances: "(1) mail is returned unclaimed, (2) the recipient denies ownership, (3) ownership cannot be determined, (4) expired permits regarding large projects, (5) owners of reservoirs cannot be identified, or (6) other special circumstances[.]"[561] Under the current procedures, municipalities and the Wind River Reservation are treated differently for purposes of notice; notice is provided only to the entity and not to the multitude of owners.[562]

The Oregon statute does not require notice by mail to water users, and publication in newspapers of general circulation is adequate.[563] Colorado provides notice by docket and regular monthly "resume" publication to possible objectors outside of the immediate adjudication area.[564] Although Montana's statutes provide for notice by publication, the statute also gives the Montana Supreme Court discretion to effectuate notice in any other manner that will carry out the purposes of the notice provision.[565] Thus, Montana may send out their adjudications summons with property tax assessments. Idaho prepares its notice from real property assessment rolls.[566] Arizona statutes require the Department of Water resources to serve notice on property owners.[567] Additionally, the department also serves persons who previously made some application or filing to the department of water resources or its predecessor agencies. In Arizona's Gila River adjudication, the presiding judge ordered the recording a *lis pendens* in all counties affected by the adjudication.[568] The cost of serving notice or summons is generally born by the issuing state agency, using funds derived from filing fees, state appropriation, or some other source.

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560. *See* WYO. STAT. ANN. §§ 41-4-210, 41-4-303, 41-5-502, 41-5-503, 41-5-504 (2005).

561. *In re* The General Adjudication of All Rights to Use Water in the Big Horn River System (Big Horn Adjudication Phase III Procedures), No. 86-0012, at 7 (5th D. Wyo. Jan. 21, 1986).

562. *Id.* at 8.

563. OR. REV. STAT. §§ 539.030 –539.040 (2003).

564. COLO. REV. STAT. § 37-92-302(3) (2005).

565. MONT. CODE ANN. § 85-2-213 (2005).

566. IDAHO CODE ANN. § 42-1408(2)(d) (2005).

567. ARIZ. REV. STAT. § 45-253(A)(2) (2005).

568. *In re* Right to the Use of the Gila River, 830 P.2d 442, 462 (Ariz.1992).

The Washington adjudication court, in *Department of Ecology v. Acquavella*, considered the issue of whether due process required personal service of process on all individual water users who get their water under contract from water distributing entities, or whether service of process on water distributing entities alone is sufficient.[569] Washington's Yakima adjudication involves only one watershed and includes the rights of a large Indian reservation.[570] Additionally, there are six hydroelectric plants in the basin: two operated by the Bureau of Reclamation ("BOR"), two by the Bureau of Indian Affairs ("BIA"), and two by a private company.[571] The Yakima basin also includes large irrigation projects constructed by both the BOR and the BIA.[572]

The Department of Ecology ("DOE") personally served initial, original notice on all persons, entities, and successors who filed claims with the agency and all parties that had received permits or certificates from the DOE.[573] In addition, the Washington adjudication statute contains language pertinent to the issue: "any persons claiming the right to the use of water by virtue of a contract with claimant to the right to divert the same, shall not be necessary parties to the proceeding."[574]

Acquavella first confirmed, "property owners have a vested interest in their water rights to the extent that the water is beneficially used on the land."[575] Though compelled to protect property owners' interests, the *Acquavella* Court reviewed the United States Supreme Court's *Mullane v. Hanover Trust Co.* decision and concluded:

> If a moderate number of water users was involved in the present case, we might find notice by mail or personal service was required. However, as the trial court noted, there are in excess of 40,000 persons or entities who receive water from the subject river basin. As the Supreme Court stated in *Mullane*, "[a] construction of the Due Process Clause which would place impossible or impractical obstacles in the way could not be justified." To require the DOE to compile the names and addresses of all ultimate water users in the basin would be an impractical obstacle.[576]

The *Acquavella* court justified its conclusion by holding water distributing entities had a special relation with their customers "akin to a

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569. *In re* The Determination of the Rights to the Use of the Surface Waters of the Yakima River Drainage Basin, 674 P.2d 160, 161 (Wash. 1983).
570. *Id.*
571. *Id.*
572. *Id.*
573. *Id.* at 162.
574. WASH. REV. CODE ANN. § 90.03.120 (West 2006).
575. *In re* The Determination of the Rights to Use of the Surface Waters of the Yakima River Drainage Basin, 674 P.2d at 163.
576. *Id.* (citation omitted).

trustee-beneficiary relationship."[577] This construct is bolstered by western water cases from other states including *Smith v. Enterprise Irrigation District* and *Combs v. Farmers' High Line Canal & Reservoir Co.*[578]

The Arizona courts have also addressed the sufficiency of notice under due process standards. The Arizona Supreme Court held that the original notice by postal service and publication satisfied the standards of due process necessary under *Mullane.*[579] The Arizona court then went one step further, and held that the mailing of over 849,000 summons "informing recipients of the pendency of the adjudication and notifying them of the procedure for submitting their water rights claims" was sufficient to constitute due process.[580] The court concluded that the notice to lienholders and mortgage holders by publication was sufficient because under *Mullane,* "impossible or impractical obstacles . . . could not be justified."[581] The court found the process necessary to personally serve lienholders and mortgagees - compiling title and records for names of all mortgagees and lienholders on approximately 800,000 parcels of land and sending notice to all - an unreasonable burden.[582]

Since adjudications have spanned decades in many western states, ongoing notice also raises due process concerns. Most adjudication courts have a docket system. Colorado's statute calls for a monthly resume.[583] The division water court clerk in each of Colorado's seven water divisions prepares such a monthly resume.[584] The resume provides notice of all applications pending before the water court each month.[585] The court publishes the resume monthly in a newspaper of general circulation in the county where the claims are located.[586] The clerk mails the resume to any potentially affected water users and to any subscribers.[587] A water user must file an objection to an application listed on the resume within two-months.[588]

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577. *Id.* at 164.

578. Smith v. Enterprise Irrigation Dist., 85 P.2d 1021, 1024-25 (Or. 1939) (holding the irrigation district had a fiduciary duty to the property owner to deliver water in order to charge an assessment); Combs v. Farmers' High Line Canal & Reservoir Co., 88 P. 396, 400 (Colo. 1907) (expanding the ditch company's duties as trustee to include the responsibility to respond to notice).

579. *In re* Rights to the Use of the Gila River, 830 P.2d 442, 455-56 (Ariz. 1992).

580. *Id.* at 446.

581. *Id.* at 449.

582. *Id.*

583. COLO. REV. STAT. § 37-92-302(3)(a) (2005).

584. *Id.*

585. *Id.*

586. *Id.* § 37-92-302(3)(b).

587. *Id.* § 37-92-302(3)(c)(I)(A).

588. *Id.* § 37-92-302(1)(c).

2. Ongoing Notice

Often, adjudication courts set up a mailing list for those parties who express the desire to stay current with the proceedings. The court's docket system is often the vehicle used for the purposes of ongoing notification to water users. In Idaho, the Idaho Department of Water Resources mails the original commencement order issued by the district court to identifiable claimants, as well as publishing and posting the notice.[589] The court provides ongoing notice by entries on the court's docket.[590]

Other states have created court-approved mailing lists that are constantly updated. Generally, a court informs all parties to contact the court to remain on the court-approved mailing list and receive copies of all filed documents. Arizona's Supreme Court approved of this method, stating that the mailing list process and the docket system were "well-designed under the circumstances to afford the litigants adequate notice of all filings in the adjudication."[591]

In Utah, the state engineer publishes the initial notice that requires claimants to provide the state engineer with their name and address.[592] The adjudication statute in Utah, however, provides an additional step that addresses ongoing notice. When the state engineer becomes aware of new persons with an interest in the water being adjudicated by the court, the state engineer adds these people to the court's mailing list and they are served with summons.[593]

Ongoing notice gets particularly tricky when one considers allottees and fractionated ownership. For example, in Wyoming, as the court and parties addressed state-issued permits in Phase III, a roadblock occurred while attempting to notify land owners holding permits issued by the Bureau of Indian Affairs. Some of the allotted land within BIA permits is "fractional" and Indians who inherited the property own small parcels. Additionally, as opposed to regular records, the ownership records are not part of county records; instead, the ownership records are part of Bureau of Indian Affairs records. Personal notification by mail to individual allottees under BIA permits is not necessary, so long as the United States and the tribes receive notice.[594]

Ongoing notice presents another challenge to the courts and the parties because adjudications have spanned so much time. What notice procedure exist when claimants or permit holders change, or land

589. IDAHO CODE ANN. §§ 42-1401A(3), -1408 (2005).
590. *Id.* § 42-1419.
591. *In re* Rights to the Use of the Gila River, 830 P.2d 442, 452-53 (Ariz. 1992).
592. UTAH CODE ANN. § 73-4-3 (2005).
593. *Id.* at § 73-4-22.
594. *In re* The General Adjudication of All Rights to Use Water in the Big Horn River System (Big Horn Adjudication Phase III Procedures), No. 86-0012, at 8 (5th D. Wyo. Jan. 21, 1986).

ownership changes, or water uses change? Arizona requires that parties contact the Arizona Department of Water Resources when a change of ownership occurs and make an assignment of the claim.[595] During the adjudication, the state water agency may update title records. For instance, Arizona updates title records when a hydrographic survey report is prepared for a particular watershed.

As adjudications age, claimants move, fail to notify the court or water agency, and mailing addresses become obsolete. Eventually, one wonders whether ongoing notices actually reach a majority of the claimants. In 1999, when the San Carlos Apache Tribe asked the Gila River adjudication court to approve a partial settlement, the court required the tribe to publish and serve notice by mail on other claimants.[596] It cost the tribe more than $35,000 to published notice.[597] Of the 27,069 notices mailed to claimants, the U.S. Postal Service returned 9600 as undeliverable.[598]

Most of the notice provisions are thought to be legally sufficient. However, does legally sufficient notice provide practical notice for lay water users — users who are not represented by lawyers? Once again, states have taken a variety of approaches. In Arizona, the Special Master's office publishes a periodic newsletter, the *Arizona General Stream Adjudication Bulletin*, which summaries recent developments, provides a schedule of upcoming proceedings, and includes "how to" and "common question" columns specially designed for lay readers.[599] The Nez Perce Tribe publishes a similar newsletter concerning Idaho's Snake River adjudication.[600] The Montana Water Court produced a videotape, available for a nominal cost, to help water users understand and navigate the adjudication process.[601] Washington and New Mexico have printed a variety of brochures to assist laypersons in participating in adjudications.[602] Idaho and Arizona are among the states with estab-

595. 2004 Ariz. Sess. Laws 859-60.

596. Partial Report of the Special Master on the Proposed San Carlos Apache Tribe Water Rights Settlement at 25, *In re* the General Adjudication of All Rights to Use Water in the Gila River System and Source, No. W1-204 (Maricopa County Super. Ct. Sept. 10, 1999).

597. *Id.* at 26.

598. *Id.*

599. ONLINE ARIZONA GENERAL STREAM ADJUDICATION BULLETIN (Office of the Special Master), Sept.-Dec. 2005, *available at* http://www.supreme.state.az.us/waternews.

600. Snake River Currents (Nez Perez Tribe Department of Natural Resources), *available at* http://www.nezperce.org/~srcurrents/index.htm.

601. Videotape: A Water User's Guide Through the Montana Water Court (Montana Water Court & KUSM Television), *available at* http://www.montanacourts.org/water/ (follow "Video Tape Flier" hyperlink).

602. New Mexico Office of the State Engineer, *available at* http://www.ose.state.nm.us/index.html (follow "Publications" hyperlink; then follow "Brochures" hyperlink) (last visited Apr. 10, 2006); Washington Department of Ecology, *available at* http://www.ecy.wa.gov/ecyhome.html (follow "Programs" hyperlink;

lished web sites on the Internet containing information about their adjudications.[603] In these and other ways, the courts and the administrative agencies address the issue of providing meaningful information about adjudications to water users.

H. Filing of Claims

In some states, filing a claim is the first step to ensure a water right is protected and begin the process for a possible adjudication. In Arizona, 24,000 persons filed approximately 66,000 claims in the Gila River Adjudication.[604] In another part of that state, 4,000 parties filed approximately 11,000 claims in the Little Colorado River Adjudication.[605] Idaho's Snake River adjudication involves 185,000 claims.[606] Montana's adjudication has the largest number of claimants, with over 210,000 claims.[607] In other adjudications, such as Nevada, only a dozen water users have filed claims.[608]

Typically, claimants reflect all types of water users: individual ranchers, farmers, and retirees; irrigation companies and districts; mining companies and other industrial concerns; utilities; cities and towns; and state and federal agencies. The United States almost invariably files claims as trustee in any adjudication where the water rights of Indian tribes may be at issue. On occasion, the Indian tribes may also file claims which parallel the United States' claims, or even exceed the trustee's claim.

Some states have adopted special procedures to allow certain water provider entities, such as irrigation districts or mutual irrigation companies, to file adjudication claims in behalf of their members. The next section discusses these procedures.

Usually, a statutory or court-established cutoff date is set for filing a claim in a general stream adjudication. Enforcement of these cutoff dates has proven elusive. In Montana, the original filing deadline for statements of claim was April 30, 1982.[609] The Montana Supreme Court enforced this deadline and held that water users forfeited any rights not claimed by that cutoff date.[610] The state legislature responded by

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then follow "Water Resources" hyperlink; then follow "Publications" hyperlink) (last visited Apr. 10, 2006).

603. Arizona Supreme Court, http://www.supreme.state.az.us/wm/(last visited Apr. 10, 2006); Idaho Department of Water Resources, http://www.idwr.idaho.gov/water/srba/mainpage/(last visited Apr. 10, 2006).

604. John E. Thorson, *State Watershed Adjudications: Approaches and Alternatives*, 42 ROCKY MTN. MIN. L. INST. 22-1, 22-37 (1996).

605. *Id.*

606. *Id.* at 22-39.

607. *Id.* at 22-3.

608. *Id.*

609. MONT. CODE ANN. § 85-2-221 (2005).

610. *In re* Yellowstone River, 832 P.2d 1210, 1212, 1216-17 (Mont. 1992).

reopening the filing period until July 1, 1996, for: (1) previously postmarked claims (mailed before the deadline, but received after the deadline), and (2) for other claims, which would be subordinate to any claims filed by the 1982 deadline.[611] In other states, like Arizona, even where the court has a liberal policy of allowing late intervention by parties who missed the filing deadline, the legislature passed legislation to allow late filing of claims, including after the special master has completed hearings concerning the affected water source.[612]

States that require filing of claims, also usually require claimants to pay a filing fee. In Arizona, the filing fee for an individual claimant is $20.[613] The filing fee for a corporation, municipal corporation, the State of Arizona or any political subdivision, or an association or partnership is two cents for every acre-foot of water claimed or $20, whichever is greater.[614] Idaho, however, adopted a special set of escalating filing fees for the Snake River adjudication, placing a particularly heavy financial burden on the United States because the fees increased as the number of claims increased.[615] This added up to approximately a $10 million tab for the United States, which by far owns the most land in Idaho and claimed a multitude of water rights.[616]

When the United States challenged Idaho's fee structure, the United States Supreme Court found the fee structure was more like an assessment of costs to the United States, a forbidden effort under the McCarran Amendment.[617] This result stemmed from the determination that the Court should strictly construe waivers of sovereign immunity, and Congress had not specifically indicated an allowance of such fees.[618] The Court did, however, leave open the opportunity for states to argue that they could impose traditional court costs and fees.[619] In a more recent decision, the Ninth Circuit Court of Appeals found Oregon's fee structure similarly violated the McCarran Amendment.[620]

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611. MONT. CODE ANN. § 85-2-221(3)-(4) (2005).
612. ARIZ. REV. STAT. ANN. § 45-182 (2005).
613. *Id.* § 45-254(H).
614. *Id.*
615. IDAHO CODE ANN. § 42-221 (2005).
616. United States v. Idaho *ex rel.* Dir., Idaho Dept. of Water Res., 508 U.S. 1, 3 (1993).
617. *Id.* at 8-9 (holding that Idaho's system for charging filing fees was biased against the federal parties and the court would not allow the state to extract $10 million from the federal government for its participation in the state process).
618. *Id.* at 6-7. *See also* United States v. Nordic Village, Inc., 503 U.S. 30, 33-37 (1992) (holding Congress had not waived sovereign immunity in the Bankruptcy Code and indicating waivers of sovereign immunity must be unambiguous and unequivocally expressed. If legislation is ambiguous, "legislative history has no bearing . . . . [i]f clarity does not exist [in statutory text], it cannot be supplied by a committee report.").
619. *Idaho*, 508 U.S. at 7-9.
620. United States v. Oregon, 44 F.3d 758, 770 (9th Cir. 1994).

A different result occurred in Colorado when the federal government challenged Colorado's fee structure. Colorado imposes the exact same fee upon any water user who files a suit with the water court.[621] The Colorado Supreme Court upheld the water court's determination that when the United State's consented to suit through the McCarran Amendment, the United States has to pay routine filing fees like all others.[622] The Colorado Supreme Court concluded Colorado had not impermissibly imposed a cost on the federal parties.[623] The federal government did not appeal the holding, and therefore, continues to pay fees in Colorado.

Claims are not filed in some adjudications. In Wyoming, for instance, the state board of control determines which streams shall be adjudicated.[624] The state notifies the water user of the recommendation and the water user has the opportunity to object and have a hearing before the district superintendent.[625] Similarly, in Texas, the commission makes preliminary determinations of claims to water rights under adjudication.[626] In Colorado, water users are not required to file with the district court, however they have a strong incentive to do so in order to preserve an early priority date and enable water right enforcement.[627]

I. Standing and Ownership of Rights

Who can participate in a modern general stream adjudication, that is, who has standing? Do only water users have standing? Is there a public interest basis for participation? Does the state have a public interest obligation to participate (in addition to its role as water user)? Do shareholders or the water users of an irrigation district have a right to participate? Do customers of a municipal provider? Do persons who lease water rights?

As leading legal authorities indicate,

> Courts have given varying answers to the abstract question of who "owns" the water that is distributed by a water organization. In the case of mutual water companies, most courts have held that the shareholders are the "real owners" of the water rights (even though the mutual might hold "naked title" to the rights) . . . . In the case of irrigation and other water districts, most courts have held that the district owns the water rights in trust for its landowners and to fulfill its

621. COLO. REV. STAT. § 37-92-302(1)(d) (2005); *See also* http://www.courts.state.co.us/chs/court/fees/fees.pdf.
622. United States v. City & County of Denver, 656 P.2d 1, 15 (Colo. 1983).
623. *Id.*
624. WYO. STAT. ANN. § 41-4-301 (2005).
625. *Id.* §§ 41-4-309, -312 (2005).
626. *See* TEX. WATER CODE ANN. § 11.309 (Vernon 2005).
627. *See* COLO. REV. STAT. §§ 37-90-301, -302 (2005).

> statutory purposes. The courts often speak of district owners as the "beneficial and equitable owners" of the water rights. . . . Abstract pronouncements on "ownership" of water, however, can be highly misleading when applied to specific questions.[628]

These authorities suggest that, in controversies between the water provider and its members, courts tend to assign ownership to the water users. In cases of conflicts between the water provider entity and third parties, courts tend to assign ownership to the entity.

This thorny problem arises in most stream adjudications and courts are reluctant to forego notice to the individual water users. Wyoming faces this issue in its Phase III proceedings. The district court has adopted and amended procedures so that the state does not have to contact all the individual water users. In the Phase III reporting, the state engineer contacts the affected body (like an irrigation district) which must contact its members, and the state engineer publishes notice.[629] The procedures allow for hearings on objections from either the irrigation district or individual users, but always include notification to the actual permit holder.[630]

How is standing handled when an individual member or shareholder of an irrigation district or similar entity may participate when the water provider entity is already a party to the case? The water distributor usually has the responsibility to defend the consumers' water rights as their representative. The Colorado Supreme Court held irrigation district shareholders are indispensable parties to an adjudication.[631] The court distinguished irrigation districts from other types of corporations and refused to apply common law corporation principles due to their unique character.[632] Since each shareholder stands in a different position and is likely to be affected differently, each should be joined to an action affecting the water district.[633]

This Colorado decision is similar to the law in other jurisdictions. A New Mexico court ruled individual water users must be joined in an adjudication of an acequia's water rights.[634] The court enjoined the Acequia de las Joyas del Llano Frio from interfering with the rights of senior appropriators.[635] The court ruled, however, that the injunction

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628. JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 636-37 (3d ed. 2000) (citations omitted).

629. *In re* The General Adjudication of All Rights to Use Water in the Big Horn River System (Big Horn Adjudication Phase III Procedures), No. 86-0012, at 7-8 (5th D. Wyo. Jan. 21, 1986).

630. *Id.* at 21.

631. Jacobucci v. District Court, 541 P.2d 667, 674 (Colo. 1975).

632. *Id.* at 672-73.

633. *Id.* at 675.

634. *See* Acequia del Llano v. Acequia de las Joyas del Llano Frio, 179 P. 235, 237 (N.M. 1919).

635. *Id.* at 238.

only applied to the acequia.[636] Individual members are not bound by the injunction unless they were parties to the original adjudication.[637] In Texas, a line of cases indicates that a member or customer of an irrigation company whose water use might be affected should be joined.[638] On a related note, an Alaska court held shareholders whose interests were not adequately represented by the corporation are not bound by decrees binding the corporation.[639]

Federal reclamation projects present different considerations. In some instances, the federal government assigned existing water rights to the Bureau of Reclamation to form the core of a project.[640] In other cases, the Bureau has directly applied for and received water rights from the state.[641] Also, some states distinguish between storage rights, which may be held in the Bureau's name, and secondary beneficial use rights, which may be held in the name of individual irrigators.[642] One commentator concludes,

> Water users have certain property rights in project water, but these rights are subject to important limitations. Districts, also, have significant rights and responsibilities . . . The United States has extensive powers and duties . . . with respect to project water, even though the federal government has largely deferred to state water law and does not hold the beneficial interest in project water rights.[643]

The special master in New Mexico's Pecos River adjudication used this approach in adjudicating the water rights of the Carlsbad Irrigation District. The master held that ownership rights to project water are jointly held by the landowners, the United States, and the irrigation district.

Another standing issue arises when dealing with non-Indian federal public land and state-owned public land. Generally, a federal reserved water right claim for federal land must be withdrawn from the public domain for a particular purpose.[644] Additionally, state land manage-

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636. *Id.* at 237-38.
637. *Id.*
638. *See* Watkins Land Co. v. Clements, 86 S.W. 733, 735 (Tex. 1905); Wilson v. Reeves County Water Improvement Dist. No. 1, 256 S.W. 346, 347 (Tex. Civ. App. 1923); Matagorda Canal Co. v. Markham Irrigation Co., 154 S.W. 1176, 1180 (Tex. Civ. App. 1913). *But see* Biggs v. Miller, 147 S.W. 632, 637-38 (Tex. Civ. App. 1912).
639. Alaska Foods, Inc. v. Nichiro Gyogyo Kaisha, Ltd., 768 P.2d 117, 121-24 (Alaska 1989).
640. Filings of Claims for Water Rights in General Stream Adjudications, 97 Interior Dec. 21, n.4 (Dep't of Interior July 6, 1989).
641. *Id.* at 25.
642. Reed D. Benson, *Whose Water is it? Private Property Rights and Public Authority Over Reclamation Project Water*, 16 VA. ENVTL. L.J. 363, 373 (1996).
643. *Id.* at 426.
644. Navajo Dev. Co. v. Sanderson, 655 P.2d 1374, 1379 (Colo. 1982).

ment agencies can file for water rights on state lands.[645] Often, an allottee or lessee of the government puts the water to beneficial use on these public lands. The question that thus arises is whether the water right accrues to the individual user or to the federal or state government. In the Little Colorado River adjudication in Arizona, federal attorneys conceded that the water right accrues to the person leasing the federal land.[646] The federal government, however, took the opposite position in the Gila River adjudication.[647]

Standing also was an issue in Idaho when the Idaho Conservation League, Inc., a non-profit public interest group attempted to engage in the adjudication proceedings. The outcome of this attempt resulted in a decision that water rights in Idaho are impressed with the public trust doctrine.[648] The Idaho Supreme Court held, however, that the Snake River adjudication court is not the appropriate forum to consider the public trust doctrine, although the court can conduct a local public interest inquiry.[649]

J. Role of the State Water Agency

Legal determinations that depend heavily on science from experts and knowledgeable decision makers. Hydrology is a notoriously inexact science with limited powers of prediction, dependent upon an array of interconnected variables, some of which are virtually unknowable. Factual uncertainty about water hampers a court's ability to reach a final determination of rights. Though claimants, and some courts, feel they do not need a state bureaucrat telling them which way the water flows, something more than an intuitive sense of the watershed is essential for producing an accurate and workable decree. State water agencies are often in the best position to assist the court by providing complete water use inventories and information based on certain hydrologic models.

Administrative agencies' duties in state adjudications range from nearly judicial to merely clerical. In states where adjudication proceedings are administrative in nature, the department of water resources or state engineer has a broad role. For example, in California, Idaho, Nebraska, Nevada, New Mexico, Oregon, Texas, Utah, and Wyoming, the state department or engineer's office provides notice, examines

645. *In re* General Adjudication of All Rights to Use Water in the Little Colorado River System, Civil No. 6417-033-9005, at 47 (Ariz. Sup. Ct. 1994) (mem.).
646. *Id.* at 39.
647. *See In re* General Adjudication of All Rights to Use Water in the Gila River System & Source, 35 P.3d 68, 73 (Ariz. 2001).
648. Idaho Conservation League, Inc. v. Idaho, 911 P.2d 748, 750 (Idaho 1995).
649. *Id.* at 749.

claims, conducts hydrographic surveys, and prepares other reports.[650] The agency then prepares a preliminary determination of water rights, rendering an opinion of fact and law.[651] In these states, the report is usually treated as prima facie evidence of the water rights, with the burden on the objector to rebut the agency's findings. The appropriate state court may then review the agency's final ruling.

In other states, such as Arizona, Washington, and Wyoming's Big Horn adjudication, a referee or special master first reviews the agency's work. For example, in Arizona, after the Department of Water Resources conducts the hydrographic survey, setting forth watershed file reports for each parcel of land under common ownership, the special master holds hearings and issues a report of findings of fact and conclusions of law.[652] Claimants have an opportunity to be heard or to object at nearly every level of fact finding. In Washington, the Department of Ecology makes the initial determination as to whether an adjudication is necessary, completes basin investigations, prepares a statement of facts and a list of necessary parties for the court, and assists in the service of summons.[653] The statute requires that the court formally refer the proceeding to the department to take testimony as referee.[654] The department's referee then holds pre-hearing conferences and conducts evidentiary hearings to receive factual information.[655] The referee files this report with the superior court judge who then hears objections and issues the final decree.[656] In Wyoming's Big Horn River adjudication, the Board of Control conducts the investigatory work and reviews the claims.[657] The Board reports on the claims to the special master and recommends the extent of the rights to be ad-

650. CAL. WATER CODE §§ 225, 1250, 1300 (West 2006); IDAHO CODE ANN. §§ 42-708, -1409, -1410 (2005); NEB. REV. STAT. §§ 46-227, -233 (2005); NEV. REV. STAT. §§ 532.150, 533.090, 533.095 (LexisNexis 2005); N.M. STAT. §§ 72-2-17, -4-13 (2005); OR. REV. STAT. §§ 537.130, 541.220 (2003); TEX. WATER CODE ANN. §§ 11.129, 11.132, 15.804 (Vernon 2005); UTAH CODE ANN. §§ 73-3-5 to -6, 73-4-1 (2005); WYO. STAT. ANN. §§ 41-4-302, -316, -326 (2005).

651. CAL. WATER CODE § 1347 (West 2006); IDAHO CODE ANN. § 42-1411 (2005); NEB. REV. STAT. § 46-235 (2005); NEV. REV. STAT. § 533.095 (LexisNexis 2005); N.M. STAT. § 72-2-17 (2005); OR. REV. STAT. § 537.027 (2003); TEX. WATER CODE ANN. § 11.134 (Vernon 2005); UTAH CODE ANN. § 73-3-8 (2005); WYO. STAT. ANN. § 41-4-326 (2005).

652. ARIZ. REV. STAT. ANN. §§ 45-256 to -257 (2005).

653. WASH. REV. CODE ANN. §§ 43.21A.064(4), 90.03.110, 90.03.130, 90.03.160 (West 2005).

654. *Id.* § 90.03.160.

655. *Id.*

656. *Id.*

657. Wyoming State Engineer's Office, http://seo.state.wy.us/about.aspx (last visited Apr. 11, 2006).

judicated by the special master.[658] The special master conducts hearings if there are objections to this report.[659]

State courts vary in how they utilize the findings of administrative agencies. In Wyoming, the Board of Control compiles dates and claims of water rights and enters orders that the state courts often ratified without significant change.[660] In Colorado, the state and division engineers are limited to providing summaries of consultations to water courts as the courts consider applications. In New Mexico, the attorney general enters suit on behalf of the state and defends the agency determination against water right claimants.[661]

In states where proceedings are more judicial in nature, the department or state engineer's role is reduced. In Montana, for example, the Department of Natural Resources and Conservation conducts field investigations and examines claims for preliminary decrees.[662] The water court resolves objections, with the department largely assisting the water court.[663] In Colorado, every two years the state engineer prepares a comprehensive tabulation of water rights that sets forth all the water rights established in a division.[664] The state engineer files the table with the court and the court hears objections to the tabulation.[665] Once the court approves the tabulation, the state engineer uses it to administer water rights.[666]

In South Dakota, the chief engineer prepares a tabulation of vested rights by county.[667] The Board of Water Management then hears and determines, in a *de novo* proceeding, any challenge to a claim for validation of vested rights.[668] In adjudication proceedings, the court may direct the chief engineer to deposit the relevant permits and documents with the court; but, otherwise, there are few statutory duties for South Dakota's chief engineer to fulfill in adjudications.[669] As these examples indicate, the role of the state engineer or department varies among states based on the structure of the proceedings – whether they are more administrative or more judicial in nature.

In states with little adjudication activity, such as Kansas, North Dakota, and Nebraska, administrative agency activity is similar to those

658. *In re* The General Adjudication of All Rights to Use Water in the Big Horn River System (Big Horn Adjudication Phase III Procedures), No. 86-0012, at 3-6 (5th D. Wyo. Jan. 21, 1986).
659. *Id.* at 17.
660. *See* WYO. STAT. ANN. §41-4-208 (2005).
661. N.M. STAT. § 72-4-15 (2005).
662. MONT. CODE ANN. §§ 85-2-231(6), -243 (2005).
663. *Id.* § 85-2-243.
664. COLO. REV. STAT. § 37-92-401(1)(a) (2005).
665. *Id.* § 37-92-401(2)-(3).
666. *Id.* § 37-92-401(7), (11).
667. S.D. CODIFIED LAWS § 46-2A-16 (2005).
668. *Id.* § 42-2A-17.
669. *See id.* § 46-10-2.3.

states engaged in current adjudication proceedings. In Kansas, the chief engineer determines and adjudicates vested water rights, subject to appeal in the district court.[670] The chief engineer may enforce water rights determinations by issuing a cease and desist order or may request the attorney general to seek an injunction.[671] In North Dakota, the state engineer prepares hydrographic surveys and conducts investigations of each stream system and source of water supply in the state.[672] The state engineer also evaluates private adjudications to determine if the public interest requires the state's intervention.[673] In Nebraska, the Board of Irrigation undertook a systematic adjudication of all the state's streams in 1895.[674] Today, Nebraska's Department of Natural Resources periodically reviews surface water rights throughout the state, often resulting in administrative proceedings before an administrative judge.

Conflict between administrative agencies and courts often hamper general stream adjudication proceedings. Disagreements arise as courts exert greater case management control, often in an attempt to ensure all water users due process. State administrative agencies have traditionally worked with their constituent state water users. In contrast, the court is a forum for resolving disputes among all the water users, including tribes and federal agencies. The court, however, relies on state administrative agencies to provide the necessary expertise to conduct these proceedings.

Adjudications in several states have gone through phases of court-agency conflict. In Montana, the court and agency have differed on how much scrutiny to give to water right claims when no one has objected. In Idaho, the court was uncomfortable with the department's mixed role as technical advisor and advocate. Legislation eventually resolved this tension by delineating the role of the director.[675] In Arizona, departmental personnel participated in legislative efforts to modify the adjudication. However, the state court nullified much of the resulting statute.[676] In New Mexico, the courts and state engineer have differed on the allocation of resources in adjudications.

K. Objections

Objections are the raw fuel of litigation and controversy in general stream adjudications. A water user who is dissatisfied with the way his

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670. KAN. STAT. ANN. § 82a-711, -714, -715 -724 (2004).
671. *Id.* §§ 82a-706b, -706d.
672. N.D. CENT. CODE § 61-03-16 (2005).
673. *Id.*
674. John E. Thorson et al., *Dividing the Western Waters: A Century of Adjudicating Rivers and Streams*, 8 U. DENV. WATER L. REV., 355, 417 (2005).
675. IDAHO CODE ANN. § 42-1401B (2005).
676. San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 199 (Ariz. 1999).

or her right has been addressed by the claimant, administrative agency, court, master, or referee can file an objection, also called a statement of opposition, contest, or exception. A water user can also file an objection against another water user's claims. The objection may be to the water user's claim or to the description of the claim in the water agency's report or determination. Objections may allege the nonexistence of a water right, claim a new water right will cause or increase injury to another user, or dispute one or more of the claimed characteristics such as priority date, quantity, type of use, or location.

While water users in small adjudications file only a few dozen of objections, objections can total in the thousands in large basin-wide adjudications. For instance, in Arizona's San Pedro River watershed adjudication, part of the larger Gila River proceeding, claimants raised approximately 81,000 individual issues against the state's hydrographic survey report for that watershed. While the claims filing process and the administrative agency's technical work may take years, hearing and resolving objections substantially lengthens the completion of most general stream adjudications.

An important question in any adjudication is who can object to claims or proposed water rights. Most commonly, an objector must be a person who filed a claim in the adjudication or an "interested person," a concept expressed in slightly different ways in various states.[677] Colorado allows "any person" to object.[678] In California's statutory adjudications, a person who has not filed a claim, but is described as a water user in a report, may object before the State Water Resources Control Board.[679] Oregon and Wyoming also allow a person owning a physical irrigation structure to object in the adjudication.[680]

The question of whether a person not claiming water rights in an adjudication proceeding may object based on the public trust doctrine or some other principle has arisen in several states. In Idaho, the

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677. *See, e.g.*, ALASKA STAT. § 46.15.065(c) (2004) ("person adversely affected by a determination"); ARIZ. REV. STAT. ANN. § 45-251(4) (2005) ("all persons claiming water rights"); IDAHO CODE ANN. § 42-1401A (2005) ("any person asserting ownership rights to the use of water"); KAN. STAT. ANN. § 82a-704a(b) (2004) ("persons interested and concerned"); MONT. CODE ANN. § 85-2-233(1) (2005) ("person who claims rights to the use of water from sources in other basins that are hydrologically connected to the sources within the decreed basin"); NEB. REV. STAT. § 46-229.04(1) (2005) ("interested person"); NEV. REV. STAT. § 533.145 (LexisNexis 2005) ("any person claiming any interest in the stream"); N.M. STAT. § 72-7-1 (2005) ("any applicant or other party dissatisfied with any decision, act or refusal... of the state engineer"); OKLA. STAT. tit. 82, § 105.11 (West 2006) ("any interested party"); TEX. WATER CODE ANN. § 11.318(a) (Vernon 2005) ("any affected person who appeared in the proceeding before the commission"); UTAH CODE ANN. § 73-4-11 (2005) ("any claimant dissatisfied"); WASH. REV. CODE § 90.03.200 (2004) ("any interested party").

678. COLO. REV. STAT. § 37-92-302(1)(b) (2005).

679. CAL. WATER CODE § 2604 (West 2006).

680. OR. REV. STAT. § 539.100 (2003); WYO. STAT. ANN. § 41-4-312 (2005).

courts have not allowed environmental groups asserting the public trust doctrine and related theories to participate in the adjudication.[681] In Arizona, the state legislature attempted to preempt the issue by declaring that courts should not consider the public trust in stream adjudications.[682] However, the court held this legislation an unconstitutional violation of separation of powers.[683]

Whether the state administrative agency can be an objector has been controversial issue in several states. In Colorado, the state engineer is specifically authorized to object in an action for an application for a new use or determination of an existing right.[684] In Montana, the Department of Natural Resources and Conservation filed over 10,000 objections in proceedings pending in the 1980s, believing these objections were necessary to ensure accuracy in the resulting decrees. Since then, the department has withdrawn many of these objections and has engaged in informal consultation with water users to reduce the number of ongoing objections.

Often a claimant must file objections by a certain deadline. The objection period varies greatly in the western states, and the actual deadline may be tied to certain events, such as the period for public inspection of evidence and testimony before the agency, the agency's determination or report, the hearing date, or deadlines established by the administrative agency or the court. The actual objection deadlines may range from as few as fifteen days following the testimony taken by the divisional superintendent in Wyoming, to 180 days for objections to Arizona's hydrographic survey reports for a watershed or reservation, to 180 days for objections to Idaho director's reports containing more than 5000 claims.[685]

A few states, such as Kansas and Nebraska, allow a person to object simply by appearing at a hearing.[686] Most often, objectors are required to file written objections, contests, or requests for hearing that normally require objectors to articulate "specific grounds" or "reasonable certainty" as the basis for the objection. Often, agents or attorneys can file these documents. Many of the states require the party to verify the documents or an attorney to certify the documents.[687] The Arizona

681. Idaho Conservation League, Inc. v. State, 911 P.2d 748, 749-50 (Idaho 1995) (stating trial court is not required to consider public trust as element of water rights subject to adjudication).

682. ARIZ. REV. STAT. ANN. § 45-263(B) (2005).

683. San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 199 (Ariz. 1999) (holding statute ordering courts to make the public trust doctrine inapplicable in water rights adjudication violated separation of powers and violated constitutional limit on legislative power to give away resources held in trust by state).

684. COLO. REV. STAT. § 37-92-302(1)(b) (2005).

685. WYO. STAT. ANN. § 41-4-312 (2005); ARIZ. REV. STAT. ANN. § 45-257 (A)(2) (2005); IDAHO CODE ANN. § 42-1411(6)(f) (2003).

686. KAN. STAT. ANN. § 82a-704a(b) (2004); NEB. REV. STAT. §46-229.04 (2005).

687. *E.g.*, TEX. WATER CODE ANN. § 11.313(b) (Vernon 2005).

Supreme Court has adopted a special exception to its unauthorized practice of law regulations to allow a corporate officer to appear in regard to the corporation's water rights.[688]

The states are not uniform in terms of what type of document parties must file. A written objection is the most common requirement. In states where the adjudication proceeds as a suit filed by the attorney general, the written objection takes the form of an answer or other responsive pleading. In a few states, standard forms are encouraged or required. Arizona has experimented with a set of uniform objection codes and requires major parties to enter their objections in a specified computer format.[689] Idaho allows major parties to enter pleadings on an electronic template and submit the information on-line. Colorado includes forms in its water court rules.[690]

Four basic procedures describe the requirements for serving objections on other parties. In a few states, litigants only need to serve the administrative agency or court. While there is no statutory requirement, when the right is contested, the agency often provides notice to the affected party.

The more common procedure is for an objector to file the objection with the agency or court clerk, who then serves all other necessary parties. In Alaska, for instance, the commissioner sends notice of an objector's requested hearing to each person who has filed a declaration.[691] In Montana, the objecting party files the objection with the court, and the clerk then notifies each party named in the decree that the objector has requested a hearing and the date for the hearing.[692]

Other states require the claimant to file an objection with the agency or court and serve copies of the objection to specific litigants, usually those persons who are interested in, or have been previously involved with, the issue or controversy. In Texas, the claimant in a contest before the commission must serve adverse claimants by certified mail.[693] However, when claimants have filed exceptions to the commission's report, the claimant only needs to serve the commission.[694] In Oregon, the objector must serve a copy of his or her exceptions on each claimant who is an adverse party.[695] In Washington, the objecting party must serve an even larger group of people. For example, when a claimant files objections to the referee's report, the claim-

688. ARIZ. SUP. CT. R. 31(d)(9) (2006).
689. ARIZ. SUP. CT. R. 124 (2006).
690. COLO. WATER CT. R. app. 1 (2005).
691. ALASKA STAT. § 46.15.065 (2004).
692. MONT. CODE ANN. § 85-2-233 (2005).
693. TEX. WATER CODE ANN. §11.313 (Vernon 2005).
694. *Id.*
695. OR. REV. STAT. § 539.100 (2003).

ant must serve copies of the objections personally or by registered mail upon all parties who have appeared in the proceedings.[696]

The process of resolving objections depends largely upon whether a state uses a predominantly administrative process, predominantly judicial, or a hybrid of the two. The following discussion addresses the four basic types of objection procedures which range from a process that is highly concentrated in the administrative agency to an objection process largely before the courts.

1. Administrative Agency Resolves Objections

In several of the western states, the administrative agency receives, hears, and finally resolves objections. The agency sets forth its resolution of objections in a final order of determination. Recourse to the courts is only by appeal from the final administrative action of the agency. Alaska, Kansas, Nebraska, Oklahoma, and divisions outside of the Big Horn basin in Wyoming use this approach.[697] Indeed, Wyoming provides a good example of this procedure. The divisional superintendent hears contests to the rights of other water users.[698] The superintendent submits the administrative record to the Board of Control, and the board, without further evidentiary hearing, adopts a final order of determination, thereby resolving all pending contests.[699]

2. Administrative Agency Hears Objections; Court Issues Final Order

Administrative agencies in many states prepare reports or preliminary orders of determination that are finalized only after the agency files the report with the court and the court acts upon the report. This is the procedure used in California, Nevada, Oregon, Texas, and Washington.[700]

Nevada provides a typical example of how this procedure works. Water users file objections to the state engineer's preliminary order of determination.[701] The state engineer then hears and resolves the objections and files his or her final order of determination with the court.[702] Water users may file exceptions to the state engineer's final order, and

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696. WASH. REV. CODE § 90.03.200 (West 2006).

697. ALASKA STAT. § 45.15.133(e) (2004); KAN. STAT. ANN. § 82a-704a (2004); NEB. REV. STAT. §§ 46-229.05, 46-230 (2005); OKLA. STAT. ANN. tit. 82, § 105.12 (West 2006); WYO. STAT. ANN. § 41-4-326 (2005).

698. WYO. STAT. ANN. § 41-4-313 (2005).

699. *Id.* §§ 41-4-317, -326.

700. CAL. WATER CODE § 2750 (West 2006); NEV. REV. STAT. §§ 533.160, .165, .185 (LexisNexis 2005); OR. REV. STAT. § 539.150 (2003); TEX. WATER CODE ANN. §§ 11.317, 11.322 (Vernon 2005); WASH. REV. CODE ANN. § 90.03.200 (West 2006).

701. NEV. REV. STAT. § 533.145 (LexisNexis 2005).

702. *Id.* §§ 533.160, 533.165.

the court must act on these exceptions before entering a final decree.[703] California has a variant on this typical procedure. When a state court has referred part of an adjudication to the State Water Resources Control Board, the board, as a referee, must consider objections to its hearing officer's draft report before filing the report with the court.[704]

3. Court Reviews Objections to Proposed Determination

In several states, the administrative agency prepares its proposed determination or hydrologic survey report. Although the agency may receive comments on the report, the formal objections are filed with, heard, and resolved by the court. Utah is the clearest example of this procedure, as water users make objections to the state engineer's proposed determination.[705] In Arizona, the objections are to the department's hydrographic survey report ("HSR") or any part thereof.[706] A special master usually hears these objections, and the special master's report on these proceedings is, in turn, subject to exceptions that are resolved by the superior court.[707] In Montana, water users can object to the temporary preliminary decree or to the preliminary decree.[708] In spite of the judicial-sounding titles of these documents, it is the Montana Department of Natural Resources and Conservation that is primarily responsible for preparing these documents.[709]

The Arizona statute requires a comment period on the department's preliminary HSR and the department carefully reviews these comments before the HSR is revised and finalized.[710] In Idaho, while the director of the department statutorily "may conduct any fact-finding hearing necessary for a full and adequate disclosure of facts," the practice is for the agency to prepare the director's report for the court.[711]

4. Entirely Judicial Objection Process

In a few of the states, the objection process is an integral part of the judicial proceeding. This is true in Colorado where water users file an

703. *Id.* § 533.170, 533.185.
704. CAL. WATER CODE §§ 2700, 2750 (West 2006).
705. UTAH CODE ANN. § 73-4-11 (2005).
706. ARIZ. REV. STAT. ANN. § 45-256(B) (2005).
707. *Id.* § 45-257(A), (B).
708. MONT. CODE ANN. § 85-2-233(2) (2005).
709. *See id.* § 85-2-231.
710. ARIZ. REV. STAT. ANN. § 45-256(C) (2005).
711. IDAHO CODE § 42-1410(1), -1411 (2005). While the director does not, as a matter of routine, prepare a report for federal claims, a claimant may contract with the director to prepare such a report. *See id.* § 42-1411; *id* § 42-1411A(5). Notices of the claims must be served by the United States on other parties, and the federal government may contract with the State of Idaho for this service. *Id.* § 42-1411A(4), (5). Other claimants file their objections to federal notices of claims. *Id.* § 42-1411A(8).

application for a new water right or for a determination of an existing water right directly with the water court clerk.[712] Other persons may file statements in opposition to these applications.[713] The referee or water judge hears these disputes.[714] The state and division engineer has an opportunity to provide technical consultation, but they must file any legal objections in the same manner as other objectors.[715]

Although not explicitly set forth in their statutes, other states follow similar procedures. In New Mexico, the state engineer completes the HSR, the attorney general initiates suits, and defendants can file responsive pleadings.[716] In other states, objectors state their protests in answers or responsive pleadings to lawsuits filed by the state attorney general.

5. Variations

While these are the four basic objection processes, some states have unusual additions to these basic procedures. In Montana, the statute allows the water court to consider objections to a federal reserved water right compact set forth in a preliminary decree.[717] In Wyoming, a declaratory judgment statute substitutes the district court for the board of control in adjudications involving federal water rights. In these proceedings, the board conducts the adjudication similar to other civil litigation with litigants raising objections in answers or other responsive pleadings.[718] Also in Wyoming, during administrative proceedings, claimants in one subbasin may contest claims in other separately adjudicated subbasins. Finally, in Colorado, water users can object to the state agency's biennial listing of priorities and a decennial listing of abandoned water rights.[719]

L. Case Management Strategies

Ideally, the water agency and court would collaborate at the moment the adjudication first arose, using a case management approach. More frequently, however, the court begins to make case management decisions when the claims, preliminary order of determination, proposed decree, or objections are actually pending before the court. In water rights adjudications, the number of parties, the amount of evidence, and complexity of issues can quickly lead to gridlock. Judicial

712. COLO. REV. STAT. § 37-92-302(1)(a) (2005).
713. *Id.* § 37-92-302(1)(b).
714. *Id.* § 37-92-302(4).
715. *Id.* § 37-92-302(1)(b).
716. N.M. STAT. § 72-4-15 (2005).
717. MONT. CODE ANN. §§ 85-2-233(5), (8) (2005).
718. WYO. STAT. ANN. § 41-4-311 (2005).
719. COLO. REV. STAT. § 37-92-401(3) (2005).

and administrative decision makers may find the tried and well-tested strategies for organizing smaller, traditional civil cases are inadequate for the task of water rights adjudication.

Because of the size and complexity of these proceedings, courts and agencies have experimented with creative case management strategies, limited by due process concerns and relevant statutes. A case management strategy often begins adjudications with fact-finding that identifies which parties and rights should be included in the proceeding, what conflicts will likely arise, and what issues must be resolved.

State agencies usually assume most of this burden, though claimants remain free to independently develop evidence in support of their claims. Arizona uses hydrographic survey reports prepared by the Arizona Department of Water Resources.[720] Wyoming's Board of Control provides initial reports and recommendations to the court for Phase III permits.[721] Early phases of most water cases revolve around mapping, hydrology, historical research, and claimant identification and notice. Courts tend to organize water cases, at least in their infancy, around such parameters as watersheds, land ownership, and type of beneficial use.

As water cases progress and become more adversarial, the preliminary amalgam of facts inevitably generates difficult substantive and procedural issues. These issues often present mixed questions of fact and law. Courts and agencies may proceed in one of two general directions. One strategy is to identify and resolve those major substantive or procedural issues that affect many other water rights early in the process. Courts may use a generic issues resolution process or litigate certain cases early to obtain precedential rulings applicable to future cases. In theory, when claimants know the legal rule in similar cases, they may be motivated to settle their claims, or to resolve them without significantly contesting certain issues. The conundrum here is that each claim has multiple issues, and each issue has many representative cases.

A second strategy is to proceed case-by-case, largely indifferent to larger substantive legal issues. Under this strategy, every single claim might illustrate many issues. Such a strategy reduces the number of participants and facts concerning individual water rights, resulting in faster and simpler decisions. Lawyers and courts are often more comfortable with this approach since it is similar to other civil litigation. Wyoming used this process for fact finding in the *Walton* claim process, and set aside a laundry list of global issues for determination after parties agreed upon the facts surrounding hundreds of claims.[722] The risk

720. ARIZ. REV. STAT. ANN. § 45-256 (2005).
721. *See In re* Bighorn River System, 85 P.3d 981, 994 (Wyo. 2003).
722. *See* United States v. Walton, 206 F. Supp. 257, 259-263 (D. Wyo. 1967).

with this approach is that it may not generate strong precedent because it treats each water right as *sui generis*.

Which claimant goes first has important equity implications. In some states, courts select powerful, competent, or well-financed claimants first, both to ensure full explication of issues and to relieve the pressure on other claimants. However, these initial cases may not represent the interests of smaller users. Additionally, if cases involving smaller users do go first, smaller litigants may incur burdensome legal expenses.

Many states use special masters or referees to bridge the gap between science and law. Special masters act as an important filter to the flood of information and claims that would quickly overwhelm a court. Special masters have broad discretion to consolidate claims and cases, review findings of fact, generate rules of procedure, and approve negotiated settlements. In some cases, special masters may assist the parties in using alternative forms of dispute resolution.

Pacing an adjudication within the financial and physical constraints of most courts and agencies, continues to challenge even the most seasoned case manager. Moving too quickly or too slowly invites intervention by legislators or administrative officials, or foments revolt among the parties themselves. In some instances, interlocutory appeals may disrupt a court or agency's pace. In other instances, an interlocutory appellate ruling may remove legal uncertainties and allow the case to proceed more rapidly. Newsletters, annual reports, and case web sites are useful tools to reduce anxiety and maintain a decent pace. Ultimately, however, pacing may depend upon the physical and mental toughness of the presiding judge or chief agency decision maker.

M. Court-Litigant and Court-Public Relationships

Communication between the adjudication court and litigants, and between the court and the public differs greatly among states. None of the western state adjudication statute provides guidance about this communications process. Instead, some states have developed their own methods. Arizona and Idaho have periodic newsletters available to both water users involved in the proceedings and other interested parties.[723] Many of the cases in the Gila River Adjudications have web sites to update interested parties and claimants on the progress of the cases.[724] The courts in Arizona and Oregon have held orientation sessions to provide procedural information to litigants and their attor-

723. Arizona Water Resource, *available at* http://ag.arizona.edu/AZWATER/awr/awrmain.html (last visited Apr. 24, 2006); Idaho State Bar Water Law Section Newsletter, *available at* http://www2.state.id.us/isb/sec/wtr/wtr.htm (last visited Apr. 24, 2006).

724. *See, e.g.*, Gila River Adjudication Pending Cases and Decisions, http://www.supreme.state.az.us/wm/Gila.htm (last visited Apr. 11, 2006).

neys. Arizona's Department of Water Resources has a toll-free phone number that water users can call to receive current information on that state's adjudication proceedings. Montana's water court produced a public service video available for interested parties.[725] Washington's Department of Ecology published brochures to assist small users in establishing their water rights in the subbasin pathway.[726] Additionally, the clerk of the court publishes the Yakima River Basin Water Rights Adjudication Notice, which includes a description of all pleadings and other documents filed with the court, a calendar of hearings before the judge and referee, and copies of important court notices or orders. The clerk publishes this notice monthly and mails it to all litigants in the adjudication. Nevada maintains a website with contact information, a frequently asked questions section, several databases, and monthly reports.[727]

Steering, advisory, and settlement committees provide mechanisms to improve relations between the court and the litigants in an adjudication case. In Arizona's Gila River adjudication, a steering committee, composed of eighteen lawyers representing major claimants in the case, meets regularly, makes recommendations to the superior court regarding adjudication procedures, and identifies legal issues that the court should take up.

N. Prior Decrees, Filings, and Administrative Decisions

The impact of prior decrees is connected to our earlier discussion of comprehensiveness. If prior decreed rights are not subject to review or challenge in a general stream adjudication, the result may be an insufficiently comprehensive proceeding. On the other hand, parties with previously determined rights should not always be subjected to unnecessary trouble and expense by being forced into an adjudication. Various states have addressed this problem through statutes or judicial determinations.

Approximately half the western states give previously decreed rights some weight in present adjudications. The amount of weight courts give these decrees varies considerably among these states, making it difficult to find a common pattern between these states. Arizona and

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725. Videotape: A Water User's Guide Through the Montana Water Court (Montana Water Court & KUSM Television), *available at* http://www.montanacourts.org/water/ (follow "Video Tape Flier" hyperlink) (last visited Apr. 11, 2006).

726. Washington State Department of Ecology Homepage, http://www.myspy.us/cgi-bin/nph-paidmember.cgi/111011A/http/www.ecy.wa.gov/biblio/wr.html (last visited Apr. 11, 2006).

727. Nevada Division of Water Resources, http://water.nv.gov/Water%20Rights/ (last visited Apr. 11, 2006).

Washington give prior decrees great weight. Arizona, for instance, maintains that water rights established in prior decrees will be binding on current adjudications.[728] Washington's code states that the adjudication will not modify existing riparian or appropriative water rights.[729]

Other states give prior decrees slightly less weight. In Alaska, the legislature validated water rights acquired before July 1, 1966, although the statutes do not specify the amount of weight courts should give to the decrees.[730] Similarly, North Dakota validates all rights appropriated before July 1, 1963, but does not specify the amount of weigh given to the decrees.[731] Similar provisions exist in Oklahoma[732] and Oregon.[733]

Colorado's situation is somewhat more complicated. The courts gave prior decrees *res judicata* effect,[734] but retained the right to determine the extent of these previously determined rights.[735] The Colorado Supreme Court in *United States v. Bell*, however, recognized a limitation on prior decrees. The court held that because of due process requirements, the United States, tribes, and persons who were not a party to the earlier decree cannot be bound by the decree.[736]

These concerns prompted Idaho to deny *res judicata* effect to prior decrees.[737] The Idaho Supreme Court determined that once a state decided to adjudicate a particular river, the state must include the entire river and its tributaries even if the courts previously adjudicated them.[738] The legislature found another rationale to deny the conclusiveness of prior decrees:

> The legislature finds that existing water rights are not uniformly described. Many old water rights were simply defined by source, priority date and diversion rate. Over time, the legislature and courts have made this original description of a water right more specific by the addition of other elements. Because of the increasing demand for water, it is important that the elements of a water right be standard-

728. ARIZ. REV. STAT. ANN. § 45-257 (B)(1) (2005).
729. WASH. REV. CODE ANN. § 90.03.010 (West 2006).
730. ALASKA STAT. § 46.15.060 (2004).
731. N.D. CENT. CODE § 61-03-17 (2005).
732. OKLA. STAT. ANN. tit. 82 § 105.2(B) (West 2006).
733. OR. REV. STAT. § 539.010 (2003).
734. Consol. Home Supply Ditch & Reservoir Co. v. Town of Berthoud, 896 P.2d 260, 264 (1995).
735. Orr v. Arapahoe Water & Sanitation Dist., 753 P.2d 1217, 1226 (Colo. 1988).
736. United States v. Bell, 724 P.2d 631, 642 (Colo. 1986).
737. *In re* Snake River Basin Water Sys., 764 P.2d 78, 83-84 (Idaho 1988) (holding adjudication must include all claimants on the Snake River and all of its tributaries within the state to subject the United States to jurisdiction).
738. *Id.* at 85.

ized to allow for fair and efficient administration of the limited water supply.[739]

Other western states are silent on how much weight, if any, they should give prior decrees in general stream adjudications. Although many of these statutes require joinder of all claimants in the adjudication, they do not mention the effect of prior rulings or decrees.[740]

Since the adoption of comprehensive water codes in many states, the water agencies have issued water rights under the permitting sections of the laws. The resulting question is whether parties in a general stream adjudication bound by these administrative determinations or must courts also join the permittees in the general adjudication.

As previously discussed, the United States Court of Appeals for the Ninth Circuit upheld an adjudication that excluded all post-1909 water rights granted by the state administrative agency.[741] The court left open the possibility of adding groundwater rights to the adjudication if necessary to protect federally defined reserved rights.[742] This rationale also would provide a basis for adjudicating any post-1909 water rights that potentially interfere with federal or tribal rights.

On the other hand, as recognized by the Colorado Supreme Court in *United States v. Bell*, many of these administrative procedures preceded the passage of the McCarran Amendment and courts could not construe these procedures as a "suit" without some formal linkage to an ongoing adjudication.[743] Without the sovereign immunity waiver provided by McCarran, state administrative agencies arguably could not have compelled the United States to appear before these administrative tribunals. The Courts have held that the doctrines of estoppel and laches will not run against the United States for failure to contest these administrative actions.[744] As a matter of law, state administrative determinations cannot be binding against the United States or the tribes unless they were present in those proceedings.[745] Arguably, some federal agencies may have consented jurisdiction before administrative agencies by applying for, and accepting, state-based water rights.

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739. IDAHO CODE ANN. § 42-1427(1)(a) (2005).

740. *See, e.g.* NEV. REV. STAT. § 533.130 (LexisNexis 2005); N.M. Stat. § 72-4-17 (2005); UTAH CODE ANN. § 73-4-24 (2005).

741. United States v. Oregon, 44 F.3d 757, 767-68 (9th Cir. 1994).

742. *Id.* at 768-70.

743. *See* United States v. Bell, 724 P.2d 631, 644 n.15 (Colo. 1986).

744. United States v. Ahtanum Irrigation Dist., 236 F.2d 321, 334 (9th Cir. 1956).

745. *See* Cappaert v. United States, 426 U.S. 128, 146-47 (1976). *Cf.* United States v. Ahtanum Irrigation Dist., 236 F.2d 321, 342 (9th Cir. 1956).

O. Burden of Proof, Evidentiary Rules, and Presumptions

Adjudications, whether before an administrative agency or a court, generally proceed under the state's usual rules of evidence for civil proceedings. In some states, the states specifically require the use of the civil rules of procedure and evidence.[746] In many of the states, including North Dakota, Nebraska, Oklahoma, Utah, New Mexico, and California, the statutes are silent on evidentiary rules. While normal civil evidentiary rules are applicable, the rigor in applying the rules in adjudication proceedings varies considerably. In cases involving small water uses, where only unrepresented persons appear, the agency or court may apply a very informal set of rules. Courts likely apply evidentiary rules more rigorously in cases involving larger water rights where all parties are represented by counsel.

A problem arising in all adjudications is which party has the burden of proof. The "burden of proof" concept itself is ambiguous as it confuses two more fundamental questions: who has the burden of persuasion, and who has the burden of producing evidence.

The burden of persuasion is upon the party who must prove all the necessary elements to establish a water right. In most states, the burden of persuasion in stream adjudications is upon the water user or claimant asserting the right. Idaho law is the clearest on this requirement: "[e]ach claimant of a water right acquired under state law has the ultimate burden of persuasion for each element of a water right."[747] Colorado places the burden of persuasion upon the claimant.[748] In Texas, by contrast, an objector must carry the burden of persuasion when contesting a preliminary determination made by the water commission.[749]

The burden of producing evidence is the obligation of a party to introduce sufficient evidence to avoid a ruling against that party on the issue. Thus, in Arizona the objector must establish a prima facie case that portions of the hydrographic survey report are invalid or inadmissible.[750] If the objector establishes a prima facie case, the burden then shifts to the water user or claimant to produce admissible evidence

746. *See, e.g.*, IDAHO CODE ANN. § 42-1411(5) (2005); NEV. REV. STAT. ANN. 533.170(5) (LexisNexis 2005).

747. IDAHO CODE ANN. § 42-1411(5) (2005).

748. In Colorado, an applicant for the determination of a water right, conditional water right, determination that conditional water right has become a vested water right, change of use application, approval of an augmentation plan, or finding of reasonable diligence in making an appropriation has the burden of proof. COLO. REV. STAT. ANN. § 37-92-302 (2005). *See also* Green v. Chaffee Ditch Co., 371 P.2d 775, 783 (Colo. 1962).

749. TEX. WATER CODE ANN. § 11.313(a) (Vernon 2005).

750. ARIZ. R. FOR PROCEEDINGS BEFORE THE SPECIAL MASTER § 13.05(3) (1991), *available at* http://www.supreme.state.az/wm/pdfs/RulesRev053105.pdf (last visited Apr. 24, 2006).

sufficient for the special master to determine the disputed legal characteristics of the water right.[751] Also, in Idaho, the director's report is "prima facie evidence of the nature and extent of a water right acquired under state law."[752] If the claimant objects to his or her water right as described in the report, the claimant has the burden of going forward with evidence to establish any element of the water right which is in addition to or inconsistent with the description contained in the director's report.[753] Evidentiary presumptions, often contained in the adjudication statutes, may help some parties satisfy the burden of persuasion or, at least, the burden of going forward with the evidence. Occasionally, courts give a presumption of validity to adjudication claims at issue, and continue to use that claim to administer the water source while the adjudication is pending. In Montana, for instance, the statement of claim constitutes prima facie evidence of its content until issuance of a final decree.[754] The court's temporary preliminary decree or preliminary decree, as modified by objections and hearings, supersedes the claim for administration purposes.[755] Similarly, Alaska recognizes a claimant's declaration of appropriation as correct until the commissioner either issues or denies the certificate of appropriation.[756]

In many states, statutes also give the reports of the state engineers or similar administrative agencies presumptive validity. Thus, in Kansas, the chief engineer's report to a court under an order of reference is "evidence of the physical facts found therein, but the court shall hear such evidence as may be offered by any party to rebut the report or the evidence."[757] In Nebraska, where the courts limit the proceedings to forfeiture and annulment matters, the department's verified field investigation report is prima facie evidence for the finding of a forfeiture and annulment of a water right.[758] Case law in Nevada creates a rebuttable presumption that the engineer or water commissioner has done their duty under law in preparing data and a preliminary order of determination.[759]

In 1995, the Arizona legislature adopted a schedule of water duties for irrigation rights and required the incorporation of these water du-

751. *Id.*
752. IDAHO CODE ANN. § 42-1411(4) (2005).
753. *Id.* § 42-1411(5).
754. MONT. CODE ANN. § 85-2-227(1) (2005).
755. *Id.*
756. ALASKA STAT. § 46.15.065(a) (2004).
757. KAN. STAT. ANN. § 82a-725 (1997).
758. NEB. REV. STAT. § 46-229.04 (2004).
759. *See* Humboldt Land & Cattle Co. v. Allen, 14 F.2d 650, 655 (D. Nev. 1926); Scossa v. Church, 187 P. 1004 (Nev. 1920) ("[U]ltimate findings of the state engineer are entitled to great respect" but such findings do not deprive court of power to grant relief to party whose rights have been infringed).

ties into a decree, along with diversion quantities and reservoir capacities as reported by the director, unless rebutted by a preponderance of the evidence.[760] However, the Arizona Supreme Court declared these provisions unconstitutional.[761]

P. Discovery

Fact-finding is the most labor and money-intensive activity in water right adjudications. Litigants need information to participate in contested proceedings, and they attempt to gain whatever advantage they can by discovery. Some litigants may find it more cost-effective to pursue discovery than to do their own hydrology, computer modeling, or historical research necessary to establish or contest a water right. Litigants often direct discovery requests to the state agency.

Colorado has required disclosure as a feature of its rules of civil procedure.[762] In Arizona, automatic disclosure became part of the Arizona Rules of Civil Procedure in 1992. [763] Other states follow traditional rules requiring parties to submit document requests or interrogatories to other parties to obtain information.[764]

In Idaho, continuous discovery motions aimed at the Idaho Department of Water Resources ("IDWR") were a major reason for legislative revision of the adjudication statutes. In its former role as a litigant, IDWR was an obvious and frequent target for discovery requests and the department expended an inordinate amount of resources fulfilling and defending against discovery motions. In its current role as neutral adviser, IDWR makes information available without fear of compromising the department's legal position.

Q. Mediation and Settlement

Settlement, an alternative to judicial resolution, is often touted as the cure to the seemingly endless litigation of a general stream adjudication. As with any lawsuit, settlement often provides a better result for the litigants than a court's decision. Rather than a narrow determination of water rights, settlements can include beneficial water management provisions that are beyond a court's capacity to order. Still, questions remain. Can a settlement resolve differences any faster or less expensively than litigation? Will the settlement be implemented if it depends on future actions and appropriations by Congress, state legislature, and tribal councils?

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760. ARIZ. REV. STAT. ANN. § 45-256 (6)-(7) (2005).
761. San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 197 (Ariz. 1999).
762. COLO. R. CIV. P. 26(a)(1)(A)-(B) (2005).
763. ARIZ. R. CIV. P. 26.1(a)-(b) (2006).
764. *See, e.g.*, Nev. R. CIV. P. 26(a) (2006); N.M. R. CIV. P. 1-026(A) (2006).

Settlements have played a large role in determining federal reserved rights in the west. States, tribes, and the federal government have reached settlements of tribal claims in Arizona, California, Colorado Florida, Idaho, Montana, Nevada, New Mexico, Utah, and Washington.[765] The earliest settlement occurred in 1862 between New Mexico and the Navajo Nation when the Navajo Nation gave up its claims in return for a federal reclamation project, a project that was later downsized from 500,000 acre-feet to 370,000 acre-feet.[766] More recent Indian water settlements often include federal funding for a project and other features including: (a) the ability to market water off-reservation; (b) use of treated effluent water; (c) multi-party water exchanges; (d) use of large federal project water that is otherwise being underutilized; (e) agreements with neighboring private parties; (f) protections for tribal fisheries and wetlands; (g) conservation measures for urban users; (h) resolution of co-existing non-water issues; (i) hard cash for tribal development; and (j) water banking provisions.[767]

A comprehensive Indian water settlement is the 1990 Fallon Paiute-Shoshone Truckee-Carson-Pyramid Lake Water Rights Settlement Act in Nevada. After decades of litigation in federal court, the settlement confirms the apportionment of waters of the Truckee River, the Carson River, and Lake Tahoe between the Pyramid Lake Tribe and the states of California and Nevada, including both agricultural and municipal use.[768] The agreement also includes protections for endangered fish and increased efficiency from the Fallon Naval Air Station.[769]

A more recent settlement is the comprehensive Arizona Water Settlements Act passed in late 2004.[770] The legislation settles the water rights claims of the Gila River Indian Community and the Tohono O'odham Nation, as well as separately resolving Arizona's repayment obligation to the United States for the Central Arizona Project's ("CAP") construction costs.[771] The settlement even provides New Mexico with 18,000 acre-feet of Gila River water to partially satisfy that state's Colorado River basin entitlement.[772] The Gila River Indian Community will receive 655,000 acre-feet of water from the CAP and the Gila, Salt, and Verde Rivers, as well as financial benefits of $200

765. DAVID H. GETCHES, ET AL., CASES AND MATERIALS ON FEDERAL INDIAN LAW: 837-38 (3rd ed. 1993).
766. *Id.* at 837.
767. *See generally* BONNIE G. COLBY, JOHN E. THORSON & SARAH BRITTON, NEGOTIATING TRIBAL WATER RIGHTS: FULFILLING PROMISES IN THE ARID WEST 79–92 (2005).
768. Truckee-Carson-Pyramid Lake Water Rights Settlement Act, Pub. L. No. 101-618, 104 Stat. 3294 (1990).
769. *Id.* 3310-12.
770. Arizona Water Rights Settlement Act, Pub. L. No. 108-447, 118 Stat. 3478 (2004).
771. *Id.* 3487, 3499-94.
772. *Id.* 3499, 3501.

million.[773] The total price tag of the settlement may reach $445 million by 2014.[774]

Western states have used a variety of approaches to negotiate these settlements. These settlements almost always include a federal negotiating team.[775] These teams arise from the federal trust responsibility for tribal resources and in recognition of the federal government's role in providing most of the funding needed to accomplish Indian water settlements.[776]

Frequently, executive agencies have been proactive in pursuing settlement. In Montana, the legislature created the nine-member Reserved Water Rights Compact Commission.[777] The legislature authorized the compact commission to negotiate water rights settlements with Indian tribes and the federal government, subject to ratification by the tribal council, state legislature and the appropriate federal authority.[778] A related statute also suspends the adjudication of Indian water rights during negotiations.[779] Through this process, the state, tribes, and federal agencies completed ten compacts, although legislative or judicial approvals are still pending for some of these agreements.

Idaho's governor appointed a team to work toward implementation of Indian water settlements. The recent Nez Perce Indian settlement resulted from a mandatory settlement process conducted by a seasoned mediator, with extensive experience in a variety of complex litigation settings.[780]

Utah negotiates directly with the tribes whenever necessary.[781] In the Gila River Adjudication, the Arizona Department of Water Resources hired an Indian water rights settlement facilitator.[782] Wyoming's state engineer has joined with the tribes of the Wind River Reservation to name a team to resolve conflicts as the tribes utilize the water awarded them in the Big Horn River adjudication.

In other settings, courts have initiated settlement processes. In Arizona's Little Colorado River adjudication, the presiding superior court judge appointed a settlement judge to facilitate potential settlement of Navajo, Hopi, and Zuni water claims. So far, this procedure

773. COLBY ET AL., *supra* note 675, at 134.
774. *Id.* at 134.
775. *Id.* at 60.
776. *Id.* at 14.
777. MONT. CODE ANN. §2-15-212 (2005).
778. *Id.* §§ 85-2-228, -702.
779. *Id.* § 85-2-17.
780. *See* Snake River Water Rights Act, Pub. L. No. 108-447, 118 Stat. 3431 (2004). The mediator was Francis McGovern, Duke University law professor and former U.S. District Court special master in complex litigation.
781. *See, e.g.*, UTAH CODE ANN. § 73-21-1 to -2 (2005).
782. ARIZONA DEPARTMENT OF WATER RESOURCES, INDIAN WATER RIGHTS CLAIMS: SETTLEMENT UPDATE, *available at* http:/www.azwater.gov/dwr (search "settlement update"; then click on text version for the first entry) (last visited Apr. 12, 2006).

has led to a settlement for the Zuni Pueblo's land in Arizona known as Zuni Heaven.[783] The presiding judge in the Gila River adjudication appointed the same settlement judge, Michael Nelson, to mediate remaining issues concerning the San Carlos Apache Tribe settlement.[784] Michael Nelson has also worked with parties in New Mexico's *Aamodt* adjudication to reach a tentative settlement of that litigation.[785]

As many states and tribes struggle for a negotiated result, the concern now is about the closing window of opportunity. Indian water settlements have relied largely on federal money.[786] States have also provided money to fund the settlement efforts, although the amounts pale in comparison to the United States' contributions.[787] As domestic and international demands on the federal budget increase, parties are concerned that the large amounts of federal money will not be available to fund Indian settlements. The federal deficit already may be changing the United States' willingness to settle Indian water claims, as witnessed in New Mexico, where the United States was expected to pay most of a $280 million dollar water project, but later reduced that commitment to $11 million.[788]

In most adjudications, finalized settlements eventually become part of the final decree. As a result, courts have developed procedures and criteria to evaluate proposed settlements before they become final. Anticipating this problem, the Arizona Supreme Court issued a Special Procedural Order in 1991 to guide the settlement approval process in the Gila River adjudication.[789] The order requires that participants to a proposed settlement give notice to all claimants in the adjudication.[790] Under the order, the superior court may require the department of water resources to prepare a technical assessment of the settlement.[791] Other claimants may object to the proposed settlement, and the supe-

783. Zuni Indian Tribe Water Rights Settlement Act, Pub. L. No. 108-34, 117 Stat. 782, 782-84 (2003).

784. *In re* General Adjudication of All Rights to Use Water in the Gila River System, No. W1-204 (Ariz. Super. Ct. Aug. 17, 1999) (minute entry), *available at* http://www.supreme.state.az.us/wm/_private/w1204/smme817.pdf (last visited Apr. 24, 2006).

785. COLBY ET AL., *supra* note 767, at 184.

786. *Id.* at 16.

787. *Id.* at 85.

788. Brandon Garcia, *Feds renege on Aamodt Settlement*, SANTA FE NEW MEXICAN, Jan, 13, 2005, at A1.

789. Special Procedural Order Providing for the Approval of Federal Water Rights Settlements, Including Those of Indian Tribes (Ariz. Sup. Ct. May 16, 1991), *available at* http://www.supreme.state.az.us/wm/bulletin/pdfs7-01/order51691.pdf (last visited Apr. 24, 2006) (hereinafter Special Procedural Order).

790. *Id.* ¶ E(2).

791. *Id.* ¶ B(3)(f).

rior court may refer these objections to the special master for hearing.[792]

The Special Procedural Order also sets forth nine specific criteria that must be satisfied in order to approve the settlement.[793] These include necessary findings that the settlement has been reached in good faith, the settlement will not result in material injury to other water right claimants, and "there is a reasonable basis to conclude that the water rights of the Indian tribe . . . established in the settlement agreement . . . are no more extensive than the Indian tribe . . . would have been able to prove at trial."[794]

Under this order, the first Indian water right settlement successfully incorporated into a general adjudication decree occurred in 1991 when the superior court approved the special master's report and adopted the Salt River Pima-Maricopa Indian Community water rights settlement.[795]

The Arizona Supreme Court articulated a somewhat different standard for approving reserved right settlements in the Little Colorado River adjudication. In its 2000 order, among other criteria, the court indicated that such settlements could be approved if "the settlement is fair, adequate, reasonable and consistent with applicable law, considering all of the circumstances surrounding the settlement and all of the consideration provided under the settlement."[796]

The Montana water court subsequently used the "fair and reasonableness" standard in 2001 to approve the compact between the State

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792. *Id.* ¶¶ C(1), D(4).

793. *Id.* ¶¶ (A) – (E); *see also* C. Bruce Loble & Collee Coyle, *Settlement in General Stream Adjudications – Fairness Standards*, 22-23 (18th Annual Water Law Conference Feb. 24, 2000) (summarizing the nine specific criteria) *available at* http://courts.mt.gov/water/rules/ABA%20Settlement%20Paper.doc (last visited Apr. 24, 2006).

794. Special Procedural Order, *supra* note 789, ¶ D(6)(a).

795. Loble & Coyle, *supra* note 793, at 23.

796. *In re* General Adjudication of All Rights to Use Water in the Little Colorado System and Source, No. WC-79-0006, ¶ D(6)(a), (Ariz. Sup. Ct. Sept. 27, 2000) (administrative order). The court also indicated that a settlement could be approved if:

> [T]he water rights claimed by the objector could not be established at a trial on the objector's water rights; the water rights of the objector, if established at trial, would not be materially injured either by the water rights of the Indian tribe(s) or federal agency established in the settlement agreement and set forth in the stipulation, or by the terms of the stipulation and settlement agreement; the objector is bound by the settlement agreement because the objector's interests were adequately represented by a party to the settlement agreement by virtue of the objector's relationship to such party; or under the express terms of the settlement agreement and the stipulation, the objector is not bound and, therefore, both the objector and the Indian tribe(s) or federal agency may pursue their remedies against each other in the adjudication
> . . .

Id. ¶ D(6)(b).

of Montana and the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation.[797]

Claimants have also used mediation to settle adjudication disputes other than those involving reserved water rights. The Montana water court maintains a roster of mediators and will appoint one if the parties request.[798] The Alternative Dispute Resolution Section of the Idaho State Bar has conducted mediation training programs for parties and attorneys involved in the Snake River adjudication. The district court has also established a mediation program, and trained mediators, for New Mexico's Lower Rio Grande adjudication.[799]

R. Quantification

With the exception of priority date, quantity is the most important characteristic of a water right. The water right quantity defines how much the owner and other users along the watercourse can legitimately use. This section reviews some of the basic issues that arise when water rights are quantified, followed by a discussion of the legal principles for quantifying rights based on state and federal law.

1. Basic Issues

In some unique instances, such as a fish farm, the state tailors the water right quantification to the circumstances of the water user. More often, the state uses a standard quantity of water to define rights in the same region having similar circumstances. This water duty commonly describes the total volume of water required to irrigate a crop, "including consumptive use, evaporation and seepage from ditches and canals, as well as the water eventually returned to the streams by percolation or surface runoff."[800] Water duty can also refer to a standard quantity of water used for other purposes, such as the amount of water used per capita for household uses or the amount of water per animal used for livestock watering.

The term "quantity" of a water right is misleading in some circumstances. States define some irrigation water rights only in terms of a

797. *In re* Adjudication of Existing and Reserved Rights to the Use of Water, Both Surface and Underground, of the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, No. WC-92-1 at 4-6 (Mont. Water Ct. Aug. 2001) (memorandum opinion), *available at* http:www.supreme.state.az.us/wm/bulletin/pdfs/ftpeck.pdf (last visited Apr. 24, 2006) (drawing an analogy between a compact and a consent decree so as to apply the same or similar standard of review).

798. MONTANA WATER COURT, STEP-BY-STEP GUIDEBOOK 25, *available at* http://montanacourts.org/water/guidebook.pdf (last visited Apr. 24, 2006).

799. New Mexico State Courts, *Annual Report* 6 (2003), *available at* http://www.nmcourts.com/newface/annualrp/ar2003/ar2003final.pdf (last visited Apr. 24, 2006).

800. *See* 6 WATERS AND WATER RIGHTS 1247 (Robert E. Beck ed., repl. vol. 2005).

flow rate, such as 1.5 cubic feet per second (cfs). Unless the state specifies a period of use, the actual volume of water the right authorizes is impossible to calculate, unless one assumes that the flow rate continues around the clock for 365 days per year, which is generally not the case even with a continual municipal supply. While all states specify the quantity of a water right in one manner or another, Montana law distinguishes between flow and volume.[801] Thus, a final decree for state law water rights must define quantity:

> (i) by flow rate or direct flow rights, such as irrigation rights; (ii) by volume for rights, such as stock pond and reservoir storage rights, and for rights that are not susceptible to measurement by flow rate; or (iii) by flow rate and volume for rights that a water judge determines require both volume and flow rate to adequately administer the right.[802]

By comparison, Idaho law appears to mix the concepts. For instance, the director is required to report:

> the quantity of water used describing the rate of water diversion or, in the case of an instream flow right, the rate of water flow in cubic feet per second or annual volume of diversion of water for use or storage in acre-feet per year as necessary for the proper administration of the water right . . .[803]

Another reoccurring problem in stream adjudications is where states measure water to calculate volume or flow. This presents only a minor problem when water rights holders divert water into pipes or concrete-lined canals and the quantity will likely be the same wherever measured, though limited by pipe or canal capacity. However, when water rights holders divert water into earthen ditches for transport to distant fields, water is lost to evaporation, leaking ditches, and seepage. If a decree quantifies a water right at the point of diversion, the amount of water actually delivered to the field may be substantially less. Thus, some decrees quantify water at the diversion with full recognition that the amount of water delivered to the field will be less due to these carriage losses. Other decrees have attempted to calculate and quantify the amount of the expected carriage loss. Still other courts have attempted to quantify the amount of water need at the field, thereby requiring the water administrator to divert sufficient water to make the required delivery. Of these possibilities, quantification at the point of diversion is the most common as it is the easiest to calculate and administer; but decrees can also limit the area served by water rights, which acts as a ceiling to diversions.

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801. MONT. CODE ANN. § 85-2-234(6)(b)(i)-(ii) (2005).
802. *Id.* § 85-2-234(6)(b)(i)-(iii).
803. IDAHO CODE ANN. § 42-1411(2)(c) (2005).

Unless water is delivered to a different watershed, some amount of irrigation water, and even domestic and municipal water, returns to the source as surface runoff, percolation or movement through the ground, or from sewage treatment facility outfall. Usually, downstream users can appropriate this water again. Water rights administration would be improved if the consumptive use portion of each right were determined; that is, the amount of water lost to the system because of absorption, evaporation, transportation, incorporation into a manufactured product, or transbasin diversion. Indeed, the calculation of this consumptive use portion is necessary if upstream users later change the location or purpose of a water right with possible detrimental effects to downstream users. Most states avoid calculating the consumptive use portion of water rights in a stream adjudication, preferring to leave this issue to case-by-case determination of specific water rights in proceedings before a state engineer or department of water resources.[804] Idaho, however, is one state that requires the court to calculate the annual volume of consumptive use during the general stream adjudication.[805] Colorado requires calculation of historic consumptive use credits when a court approves a change in a water right from its original beneficial use to another beneficial use.[806]

Reservoirs and smaller impoundments, such as stock ponds, present special quantification problems. There is some disagreement over whether water stored in an irrigation reservoir is entitled to a water right or whether the stored water is simply represented by an irrigation right appurtenant to the land served by the stored water. Colorado is one state that recognizes such storage water rights so long as the diverter beneficially uses the stored water within a reasonable time, although not necessarily the same year in which the water was diverted and stored.[807]

The state frequently specifies a period of use as part of the quantification of a water right. While some courts provide this information on their own, Idaho,[808] Montana,[809] and New Mexico[810] require a determined period of use when adjudicating rights. In Arizona, however, "the decreed capacity of a reservoir includes the right to continuous

804. *See, e.g.*, United States v. Alpine Land & Reservoir Co., 503 F. Supp. 877, 887-88 (D. Nev. 1980).

805. IDAHO CODE ANN. § 42-1411(2)(c) (2005).

806. Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson, 990 P.2d 46, 52-54 (Colo. 1999) (holding "an undecreed change of use of a water right cannot be the basis for calculating the amount of consumable water than can be decreed").

807. City & County of Denver v. N. Colo. Water Conservancy Dist. 276 P.2d 992, 999 (Colo. 1954); N. Sterling Irrigation Dist. v. Riverside Reservoir & Land Co., 200 P.2d 933, 935 (Colo. 1948).

808. IDAHO CODE ANN. § 42-1411(2)(g) (2005).

809. MONT. CODE ANN. § 85-2-234(6)(h) (2005).

810. N.M. STAT. ANN. § 72-4-19 (2005).

filling and refilling in priority throughout the year."[811] This appears to be the same result in California if a judgment does not specify a period of use.[812] Colorado applications routinely specify the period of use, which becomes particularly important if the court approves a change in a water right from a use that was historically limited to the irrigation season to a water right that may be used year round.

The final major conceptual issue when quantifying water rights is how the state takes into consideration other water sources. State adjudications of all forms of water in one proceeding present the easiest situation. Thus, if an irrigator uses both a surface diversion and a well drawing water away from the stream to irrigate his fields, he is likely to receive a decree for the total quantity of water necessary to grow his crops. Neither the state engineer nor the water user's neighbors are likely to care how the farmer varies the proportions of water drawn from the surface stream and well, as long as downstream users are not impacted by the acceleration in increased surface diversions or experience delays due to increased groundwater pumping.

The situation is much more complex where the state regulates surface water and groundwater under different legal regimes or there are other sources of water outside the jurisdiction of the adjudication court, such as transbasin diversions. This regulatory scheme raises the question of how the court should calculate the quantity of the farmer's water right when surface water, within the jurisdiction of the court, is applied to land along with groundwater and introduced water that does not fall within the jurisdiction of the court. Is the farmer adjudicated an amount of surface water necessary to cultivate the crops on his land, or only that amount of surface water that he actually uses, along with the other sources of water, to water his fields?

2. Quantification of State Law Water Rights

While more than half of the western states make no statutory mention of quantification, the courts in many of the western states have extensive experience since the late 1800s in quantifying water rights based on state law. Still, there is a surprising lack of uniformity in how the courts have approached this important question. While most of the states indicate they will quantify water rights on the basis of beneficial use, there is a wide range of interpretations as to what that concept means. In applying the beneficial use concept, some states emphasize the amount of water historically used. Thus, for vested rights, South Dakota's law requires quantification of the amount of water actually

811. ARIZ. REV. STAT. ANN. § 45-257(B)(1) (2005).

812. Pabst v. Finmand, 211 P. 11, 15 (Cal. 1922) (holding a judgment for a certain quantity of water by prescription, not limiting the use of the water to a particular time or season, is considered a continuous use).

and beneficially used prior to 1955 or the three years immediately preceding 1955.[813] North Dakota also relies upon the concept of actual beneficial use.[814] A Montana decision suggests that beneficial use will be the governing concept even after the court adjudicates a water right.[815]

Other states look to the maximum amount of water historically used, thus, for rights in Kansas vested before June 28, 1945, the state quantifies the "maximum quantity and rate of diversion for the beneficial use made thereof."[816] The Texas recording statute passed in 1967 requires water users to register the extent of maximum annual application of water to beneficial use without waste during any calendar year from 1963 to 1967.[817] Under that state's more recent Edwards Aquifer Act, the newly established aquifer authority must issue permits to existing users which equal the maximum beneficial use of water without waste during any one calendar year during the historic period of June 1, 1972 to May 31, 1993.[818] If insufficient water is available to satisfy all applicants, the authority may reduce the permits proportionately.[819] The statute also indicates existing irrigation users get no less than two acre-feet per acre actually irrigated, during one calendar year, during the historic period, and other existing users of three or more years duration get the average use during that portion of the historic period.[820] The Arizona Supreme Court found unconstitutional a 1995 amendment that required "the rate of water diversions shall be measured by the maximum theoretical capacity of the diversion facilities, and reservoir storage quantities shall be identified based on the maximum controlled capacity of the reservoir."[821]

Some states have considered whether reasonableness should be emphasized as an aspect of the beneficial use doctrine. The Washington Supreme Court, in *State v. Grimes,* indicated that the relative efficiency of irrigation systems was an important aspect of quantification, but the court rejected the referee's use of a long-used reasonableness test.[822] Colorado's law defines beneficial use as "that amount of water that is reasonable and appropriate under reasonably efficient practices

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813. S.D. CODIFIED LAWS §§ 46-1-9, 46-6-1 (2005).

814. *See* Baeth v. Hoisveen, 157 N.W. 2d 728, 732-33 (N.D. 1968).

815. McDonald v. Montana, 722 P.2d 598, 606 (Mont. 1986) (holding amount required for beneficial use controls even though it exceeds acre-feet determined in decree).

816. KAN. STAT. ANN. § 82a-701(d) (2004).

817. TEX. WATER CODE ANN. § 11.303(b) (Vernon 2005).

818. Act of June 11, 1993, ch. 626, 1993 Tex. Gen. Law page no. 2361, §1.16(a), (e).

819. *Id.* § 1.16(e).

820. *Id.*

821. ARIZ. REV. STAT. ANN. § 45-256(A)(7) (2002) *declared unconstitutional by* San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 197 (Ariz. 1999).

822. 852 P.2d 1044, 1052-54 (Wash. 1993).

to accomplish without waste the purpose for which the appropriation is lawfully made."[823]

Other western states have attempted to simplify the quantification question by adopting uniform values for certain types of uses. As early as 1919, Nebraska law authorized one cubic foot per second for every seventy acres of irrigation,[824] and present law embodies this figure which limits water duty to the lesser of one cubic foot per second per seventy acres or three acre-feet per year per acre.[825] Other states have used similar standard approaches.

North Dakota limits the amount of water for irrigation under a permit, or as determined in an adjudication, to no more than two acre-feet per year per acre, delivered on the land, except that during periods of sufficient water supply, the state engineer may increase this amount to three acre-feet per acre for the irrigation season so long as the irrigator uses the water beneficially.[826]

Under Oklahoma's groundwater law, temporary permits must allow not less than two acre-feet per year per acre or more, if the applicant can demonstrate by clear and convincing evidence that the additional water will not exhaust the groundwater supply in less than twenty years.[827] Wyoming's statute calls for no more than one cubic foot per seventy acres.[828] In Arizona, the court declared a 1995 legislative attempt to add presumptive on-farm water duties to the adjudication statute unconstitutional.[829]

States also specify such uniform duties for other uses. South Dakota statutorily defines vested domestic uses as no more than eighteen gallons per minute for households, schools, and other public recreation facilities.[830] Other states attempt to quantify small, *de minimis* uses, directly or indirectly by legislation. In Arizona, the court declared unconstitutional 1995 legislation that sought to quantify stock ponds at a claimed capacity of less than or equal to 15 acre-feet, domestic uses less than or equal to 3 acre-feet, and small business uses at less than or

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823. COLO. REV. STAT. § 37-92-103(4) (2005).

824. Irrigation and Water Power, ch. 190 art. V § 11, 1919 Neb. Laws 831, 837 (codified as amended at NEB. REV. STAT. § 46-231 (2004)).

825. NEB. REV. STAT. § 46-231 (2005).

826. N.D. CENT. CODE § 61-14-03 (2005).

827. OKLA. STAT. ANN. tit. 82 § 1020.11(B) (West 2006).

828. Wyo. Stat. Ann. § 41-3-113 (2005) (quantifying standards for supplemental rights).

829. ARIZ. REV. STAT. ANN. § 45-256(A)(6) (2005) *declared unconstitutional by* San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 196 (Ariz. 1999) (These provisions specified on-farm water duties of 6 acre-feet per acre for lands at less than 3000 feet in elevation, 5 acre-feet per acre for lands between 3000 and 5000 feet, and 4 acre-feet per acre for lands in excess of 5000 feet).

830. S.D. CODIFIED LAWS § 46-1-6(7) (2005).

equal to 3 acre-feet.[831] Oklahoma simply exempts some small uses, thereby indirectly quantifying their amount. For example, Oklahoma water law exempts domestic uses, including household-related irrigation of three acres of less.[832] Also, users may store an amount of domestic water not to exceed two years' supply.[833]

3. Quantification of Federal Water Rights

Western courts have less experience quantifying reserved water rights claimed by federal agencies or Indian tribes. In *Winters v. United States*, the United States Supreme Court's seminal decision recognizing federal reserved water rights, the Court suggested that enough water would need to be available to settle the previously nomadic Indians as "a pastoral and civilized people" on an irrigated agricultural reservation.[834] The decision also cites the Court's earlier decision, *United States v. Rio Grande Dam & Irrigation Co.*, where Justice Brewer indicated a state could not "destroy the rights of the United States as the owner of lands bordering on a stream, to the continued flow of its waters; so far at least as may be necessary for the beneficial uses of the government property."[835]

In the years following *Winters*, most people believed the tribes could return to court for increased amounts of water should their needs change over time. The open-ended nature of these early decrees, however, led to uncertainty for other junior water users in the same water source. In an effort to provide some certainty of the magnitude of Indian reserved water rights, Special Master Simon Rifkind suggested, and the United States Supreme Court adopted, the practicably irrigable acreage ("PIA") standard contained in *Arizona v. California*.[836] Because the government could objectively calculate the amount of water necessary for PIA, this calculation could yield a maximum claim of a tribe upon the watercourse. Other water users could plan and invest with reasonable knowledge of what future impact tribal uses might have on their own operations. In adopting PIA, the Court rejected Arizona's arguments for an equitable apportionment between a tribe and state water users, reasoning that the equitable apportionment doctrine was applicable only to allocations among states.[837]

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831. ARIZ. REV. STAT. ANN. § 45-258 (2005), *declared unconstitutional by* San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 195-96 (Ariz. 1999).
832. OKLA. STAT. ANN. tit. 82, §§ 105.1(B),1020.1(B) (West 2006).
833. *Id.* § 105.2(A).
834. 207 U.S. 564, 576 (1908).
835. *Id.*. at 577 (citing United States v. Rio Grande Dam & Irrigation Co., 174 U.S. 690, 703 (1899)).
836. Arizona v. California, 373 U.S. 546, 600 (1963).
837. *Id.* at 565-66.

In the years following its adoption, courts have used the PIA standard, though not uniformly. PIA received its most complete application in Wyoming's Big Horn River adjudication where the state supreme court ultimately awarded 500,000 acre-feet of water to the tribes based in large part upon the special master's application of PIA.[838] A divided United States Supreme Court affirmed this award without opinion in 1989.[839] More commonly, the parties involved in negotiating reserved water rights compacts come to the table with their own expert studies on PIA and the relative credibility of the parties' PIA determinations frequently influences the movement of those negotiations. Also, in New Mexico, the court of appeals affirmed a modest PIA award of 2322 acre-feet per year of water to the Mescalero Apache Tribe, rejecting the tribe's claims to 17,750 acre-feet.[840]

The PIA standard is not particularly well suited to quantify the fishing rights retained by the northwestern tribes under treaties with the United States. In *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n,* the United States Supreme Court upheld the district court's recognition that these tribes are entitled "to take fish . . . in common with all citizens of the Territory" up to fifty percent of the harvestable fish.[841] Writing for the Court, Justice Stevens indicated "the central principle here must be that Indian treaty rights to a natural resource that once was thoroughly and exclusively exploited by the Indians secures so much as, but no more than, is necessary to provide the Indians with a livelihood—that is to say, a moderate living."[842]

Some courts have advanced a "homeland" quantification standard as an alternative quantification standard. In his initial report on the tribal claims in the Big Horn adjudication, Special Master Roncalio determined the purpose of the Wind River Reservation was to provide a permanent homeland for the Indians "where they could establish a

838. *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys., 753 P.2d 76,100-01 (Wyo. 1988); *see also* Wyoming State Water Plan: Wind/Bighorn/Clarks Fork Rivers Current Issues, *available at* http://waterplan.state.wy.us/basins/bighorn/issues.html (last visited Apr. 24, 2006).

839. Wyoming v. United States, 492 U.S. 406 (1989). While Supreme Court affirmed the case without opinion, there was more to the story. In Justice Thurgood Marshall's collection of papers, researchers found Justice O'Connor's draft decision for five justices that would have modified the PIA standard by requiring that Indian rights be quantified with sensitivity to other existing uses. Justice Brennan also wrote an eloquent and biting dissent. Before the Court issued these opinions, Justice O'Connor recused herself, apparently because of family water rights claimed in Arizona's general stream adjudications. *See* Andrew Mergen & Sylvia Liu, *A Misplaced Sensitivity: The Draft Opinions in Wyoming v. United States,* 68 U. COLO. L. REV. 683, 684-85, 708 (1997).

840. State *ex rel.* Martinez v. Lewis, 861 P.2d 235, 237-38, 251 (N.M. Ct. App. 1993).

841. 443 U.S. 658, 675, 686 (1979).

842. *Id.* at 686. *See also* Michael C. Blumm & Brett M. Swift, *The Indian Treaty Piscary Profit and Habitat Protection in the Pacific Northwest: A Property Rights Approach,* 69 U. COLO. L. REV. 407 (1998) (discussing Native American fishing rights in the Pacific Northwest).

permanent place to live and to develop their civilization just as any other nation throughout history has been able to develop its civilization."[843] He proceeded to recommend a reserved water right for multiple purposes including irrigation, fisheries, wildlife and aesthetics, mining, and municipal uses.[844] The district court rejected his homeland approach, as did the Wyoming Supreme Court, and quantified the tribe's water right as water essential for agricultural purposes based on PIA.[845]

In 2001, the Arizona Supreme Court adopted a tribal homeland standard in reviewing an interlocutory decision by the trial court in the Gila River adjudication.[846] The supreme court held the purpose of a federal Indian reservation is to serve as a "permanent home and abiding place" to the people living on the reservation.[847] The court indicated the primary-secondary purpose test for quantifying a federal reserved right does not apply to Indian reservations.[848] The PIA standard is not the exclusive measure for quantifying water rights on Indian lands. To quantify an Indian reserved right, the court must undertake a fact-intensive, reservation-specific inquiry addressing numerous factors such as a tribe's master land use plans, history, culture, geography, topography, natural resources, economic base, past water use, present and projected future population, and other relevant factors.[849] The proposed uses must be reasonably feasible and the amount of water adjudicated by the court must be tailored to the reservation's minimal need.[850] This decision moves the PIA quantification process away from the mechanical exercise of developing proposed irrigation projects that in many instances the tribe will never build, to an inquiry more closely directed to what the tribe actually intends to do with its water.

More recently, in a case involving the Lummi Reservation in Washington, a federal district court indicated that, while a homeland standard may have merit, it is not an accurate statement of federal law for purposes of quantifying Indian reserved water rights.[851]

The basis for quantifying the reserved right claims of federal agencies has been no less controversial. The paramount water rights debate of the 1940s and 1950s, discussed in our earlier article,[852] led many

843. *In re* General Adjudication of All Rights to Use Water in the Big Horn River Sys., 753 P.2d 76, 94 (Wyo. 1988) (quoting special master's report).
844. *Id.* at 85.
845. *Id.* at 100-01.
846. *In re* General Adjudication of All Rights to Use Water in the Gila River Sys., 35 P.3d 68, 79 (Ariz. 2001).
847. *Id.* at 79 (quoting Winters v. United States, 207 U.S. 564, 565 (1908)).
848. *Gila River*, 35 P.3d at 77.
849. *Id.* at 79-80.
850. *Id.* at 81.
851. United States v. Washington, 375 F. Supp. 1050, 1065 (W.D. Wash. 2005).
852. *See* John E. Thorson et al., *Dividing Western Waters: A Century of Adjudicating Rivers and Streams*, 8 U. DENV. WATER L. REV. 355 (2005).

westerners to believe that federal agencies would claim large amounts of senior water rights throughout the region. The United States Supreme Court somewhat allayed this fear in *United States v. New Mexico*, by rejecting the federal government's claim for water rights for many secondary uses, limiting the reserved water right to only that amount minimally necessary to serve the primary purpose of the forest reservation.[853] This debate still remains however, as federal agencies and state officials continue to contest the purposes of different federal lands and whether water uses are primary or secondary.[854] With growing frequency, Congress, when considering new reservations of federal lands, has specified the amount of water it is actually reserving.[855]

S. Abstracts, Judgments, and Decrees

Developing water right decrees that can be the foundation for improved water management by water users, providers, and state, local, tribal, and federal water management agencies is a primary goal of general stream adjudication proceedings. A narrative description of the stream system and technical details, including the claimant's name, priority, type of use, quantity of water, point of diversion, location of acreage or use, and season of use generally characterizes these final decrees. Sometimes, as illustrated by Nevada, the state engineer's office prepares an order and the court enters a final decree.[856] In contrast, as illustrated by New Mexico, the clerk of the court may file the

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853. 438 U.S. 696, 711-16 (1978) (holding the United States, in setting aside the Gila National Forest from other public lands, did not reserve the use of the waters of the Rio Mimbres for purposes of recreation, aesthetics, wildlife preservation or cattle grazing). *See also* Sally Fairfax & A. Dan Tarlock, *No Water for the Woods: A Critical Analysis of United States v. New Mexico*, 15 IDAHO L. REV. 509 (1979); Alan E. Boles, Jr. & Charles M. Elliott, *United States v. New Mexico and the Course of Federal Reserved Water Rights*, 51 U. COLO. L. REV. 209 (1980); Frank Trelease, *Uneasy Federalism—State Water Laws and National Water Uses*, 55 U. WASH. L. REV. 751 (1980).

854. United States v. Jesse, 744 P.2d 491, 493-94, 503-04 (Colo. 1987) (remanding to the trial court to determine whether the specific purpose of the forest service's channel maintenance claims entitled the United States to reserved rights under the Organic Act); Potlatch Corp. v. United States, 12 P.3d 1260, 1269 (Idaho 1999) (recognizing express reservation of Snake River tributary water for Hells Canyon National Recreation Area). *See also* Wendy Weiss, *The Federal Government's Pursuit of Instream Flow Water Rights*, 1 UNIV. DENV. WATER L. REV. 151 (1998); Karin P. Sheldon, *Water for Wilderness*, 76 DENV. U. L. REV. 555 (1999); Brian E. Gray, *No Holier Temples: Protecting the National Parks Through Wild and Scenic River Designations*, 58 U. COLO. L. REV. 551 (1988); William A. Wilcox, Jr. & David Stanton, *Maintaining Federal Water Rights in the Western United States*, ARMY LAW., Oct. 1996, at 3, 10.

855. *See, e.g.*, 16 U.S.C. § 460uu-49 (2000) (reserving the "minimum amount of water required" to carry out the purposes of national monument and wilderness areas); 16 U.S.C. § 410aaa-76 (reserving water sufficient to fulfill purposes of wilderness area).

856. NEV. REV. STAT. ANN. § 533.185 (LexisNexis 2005).

decree with the state engineer's office.[857] On occasion, as in Colorado, the court maintains continuing jurisdiction to administer the decree.[858]

Procedures vary for the filing of the decree and distribution to water users. In Kansas, the chief engineer files the order in his or her office and files a copy of the order with the register of deeds in the county where the water rights are located.[859] The register of deeds then records the order like any other document affecting real estate.[860] In North Dakota, the court clerk must file a certified copy of the decree in the state engineer's office upon the completion of an adjudication of water rights.[861] In Nebraska, the Director of Natural Resources keeps the adjudication records in his or her office.[862] Oklahoma requires two certified copies, prepared at the expense of the parties, with one copy filed with the state engineer and the other copy filed with the register of deeds in each county in which the stream is located.[863] In Texas, the commissioner issues to each user a certificate of adjudication that is first transmitted to the county clerk for recording and subsequent delivery to certificate holder.[864]

Many states allow their courts to modify previously entered decrees. In California, for example, any affected party has three years to petition the court for a modification in the quantity of water appropriated to that party.[865] In Nevada, either the state engineer or a party may, within three years, apply to the court for modification of the decreed water duty.[866] After a hearing, the court may increase or decrease the water duty "consistent with good husbandry, and consistent with the principle that actual and beneficial use shall be the measure and limit of the right."[867] In Utah, there is no time limit on objections to the final decree. An aggrieved party may ask for a re-determination of a final decree, but must provide a good and sufficient bond in a sum fixed by the court at least equal to twice the estimated cost.[868] In Washington, after the department submits its report and schedule of rights to the court, the court regulates water pursuant to the report.[869] A party may post a bond, the amount determined by the court, and stay the regulation "as to him."[870] Colorado employs a retained jurisdiction

857. N.M. STAT ANN. § 72-4-19 (2005).
858. COLO. REV. STAT. § 37-92-203(1) (2005).
859. KAN. STAT. ANN. § 82A-704a(d), (e) (2004).
860. *Id.* § 82A-704a(e).
861. N.D. CENT. CODE § 61-03-19 (2005).
862. NEB. REV. STAT. § 46-230 (2005).
863. OKLA. STAT. ANN. tit. 82 § 105.8 (West 2006).
864. TEX. WATER CODE ANN. §§ 11.323 to 11.324 (Vernon 2005).
865. CAL. WATER CODE § 2900 (West 2006).
866. NEV. REV. STAT. ANN. § 533.210 (LexisNexis 1995).
867. *Id.*
868. UTAH CODE ANN. § 73-4-19 (2005).
869. WASH. REV. CODE ANN. § 90.03.210 (West 2006).
870. *Id.*

period in decrees, so that the court may revisit a decree upon complaint.[871]

A few western states, including California, Colorado, Idaho, and Wyoming, actually administer final decrees. Most of these decrees preceded modern general stream adjudications. Most states have not had finality in their adjudications for several decades and hence, have not issued comprehensive final decrees.[872] The states actually issuing final decrees tend to be those with more short-term water management goals, such as basin-wide adjudications in Nevada, as opposed to statewide adjudications in Montana.

This final stage of adjudications, the administration of final decrees, remains an area of greater uncertainty. Whereas there is considerably more experience in other aspects of adjudications, there is much less experience in the administration of modern final decrees. Moreover, federal administration of some water rights further complicates these proceedings. The U.S. Bureau of Reclamation is a de facto administrator of much western water, through such projects as Arizona's Central Arizona Project and California's Central Valley Project. The Bureau does this through contracts with individual water users and project rules, often in the absence of any state or federal decree.

The administration of final decrees is the next great challenge for general stream adjudications.[873] Little thought has been given about how decrees will be updated and administered, how water right changes will be processed, how new rights will be added to the decrees (if at all), and what will be the respective role of the court and state water agency in post-decree matters.[874] The McCarran Amendment suggests that, if federal and tribal water rights administration coexists along with other rights, the United States will need to be a party.[875]

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871. COLO. REV. STAT. § 37-92-304(6) (2005).

872. *See generally,* A. Dan Tarlock, *The Illusion of Finality in General Water Rights Adjudications,* 25 IDAHO L. REV. 271 (1989) (discussing the problems of issuing final decrees in general stream adjudications).

873. Interim administration is also an issue facing state water managers. Can individually decreed water rights be administered before the final basin or adjudication decree is entered? Many states, such as Montana, are attempting to issue temporary preliminary decrees for watersheds or subbasins. *See* Montana General Adjudication Basin Status, http://dnrc.mt.gov/wrd/water_rts/adjudication/adjstatus.pdf (last visited Apr. 13, 2006).

874. As Wyoming is closest to completing a modern comprehensive adjudication, the district court has turned its thoughts to post-decree issues and requested the state engineer and major parties to consult about such issues as document retention, public accessibility to important decisions, recording decree provisions, and conflict resolution procedures. Fearful of igniting new areas of controversy, the court's ad hoc committee has recommended that, in winding down the adjudication, "less is more." *See* AD HOC COMMITTEE, BIG HORN ADJUDICATION: RECOMMENDATIONS FOR CONCLUDING THE ADJUDICATION 8-10 (Nov. 26, 2005).

875. 43 USC § 666(a)(2) (2000). *See also* S. Delta Water Agency v. United States, 767 F.2d 531, 541 (9th Cir. 1985) (concluding that under the McCarran Amendment Con-

Traditional methods of judicial decree enforcement exist, such as injunctions and contempt citations, but courts and water administrators will need to adapt them to the size of these eventual decrees.[876]

Increasing population growth, pressures for water marketing, and recent drought throughout the western states are prompting improved water management and administration. Interested parties and scholars will closely study and discuss how states will continue to improve administration with their final decrees of general stream adjudications.

T. Appeals: Interlocutory and Final

A state's appellate procedure is an important part of a general stream adjudication since appellate courts are able to correct errors in lower court or agency determinations. In many instances, appellate courts issue precedential rulings on issues important to many water users. There is a distinction in appellate procedure between exceptions or objections to an agency or master's determination, which is a routine phase in the adjudication, and an appeal of an adjudication court's final decree or an administrative agency's final determination. This section of the article discusses the latter review processes, and the accompanying Table 3 provides a state-by-state comparison of these appellate procedures.

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gress intended a waiver of immunity under subsection (2) only after a general stream determination under subsection (1) has been made).

876. Such traditional methods include court-appointed water masters, river administration manuals, writs of assistance to back-up water masters, and contempt citations. Cases that have discussed these matters include Arizona v. California, 460 U.S. 605, 618 (1983) (holding that under art. IX of the decree, the court retains jurisdiction for the "purpose of any order, direction, or modification of the decree"); Texas v. New Mexico, 482 U.S. 124, 134 (1987) ("Absent some disinterested authority [such as the Court-appointed river master] to make determinations binding on the parties, we could anticipate a series of original actions to determine the periodic division of the water . . . ."); United States v. Alpine Land & Reservoir Co., 919 F.Supp. 1470, 1474 (D. Nev. 1996) (holding any party aggrieved by the state engineer's may appeal the order to federal district court).

Table 3: Appeals[877]

Procedure	States
Appeals from final determinations of state engineer or department of water resources to court (administrative-style adjudications)	Alaska, Kansas, Nebraska, Wyoming (not applicable in Big Horn River adjudication)
Appeals of final trial court judgments or decrees proceed like other civil or equitable actions, either by specific statute or by implication (hybrid or judicial-style adjudications):	
• To intermediate court of appeals	Arizona, California, Oregon (different time periods), Texas, Washington (different time periods)
• Directly to supreme court	Colorado, Nevada (different notice procedures), Oklahoma, North Dakota, South Dakota, Utah
• Directly to supreme court although case may be referred to court of appeals	New Mexico
Appeals of final trial court judgments or decrees governed by special statute or court order for adjudications	Idaho (by statute and supreme court order), Montana (by statute)
Appeals to supreme court authorized for interlocutory trial court decisions	Arizona (by supreme court order), Montana (by statute)

"Final" is an imprecise term in general stream adjudications. Modern adjudication decrees are not truly final, comprehensive decrees in the sense that all the valid water rights in a basin are inventoried, their

877. ALASKA STAT. § 46.15.185; 44.62.560 (2004); KAN. STAT. ANN. § 82a-724 (2004); NEB. REV. STAT. § 46-229.05; 61-207 (2005); WYO. STAT. ANN. § 42-2-111 (2005); ARIZ. REV. STAT. § 45-259 (2005); CAL WATER CODE § 2271 (West 2006); *See* ORE. REV. STAT. §§ 19.205; 19.245, 19.270 (2003); TEX. WATER CODE ANN. § 11.322 (Vernon 2005); WASH. REV. CODE ANN. § 90.03.200 (West 2006); *In re* Application for Water Rights of Certain Shareholders in Las Animas Consol. Canal Co., 688 P.2d 1102, 1105 n. 5 (Colo. 1984); COLO. REV. STAT. § 13-4-102(1)(d) (2005); COLO. CONST. art VI, §2(2); NEV. REV. STAT. ANN. § 533.200 (LexisNexis 2005); OKLA. R. CIV. P. § 952 (2006); N.D. CENT. CODE § 28-27-01 (2005); S.D. CODIFIED LAWS § 1-26-37 (2005); UTAH CODE ANN. § 73-4-16 (2005); N.M. STAT. § 72-7-3 (2005); 1917 N.M. LAW 144, IDAHO CODE ANN. § 42-1418 (2005); MONT. CODE ANN. § 85-2-235 (2005); *In re* Rights to Use the Gila River, 830 P.2d 44, 456 (Ariz. 1992); MONT. CODE ANN. § 85-2-235(3) (2005).

characteristics determined, and objections resolved. In a modern water adjudication, certain rights, categories of rights, or issues may be adjudicated and set forth in a partial final decree that may be appealed to a higher court. The Idaho Supreme Court has effectively reviewed certain partial final decrees to give prompt guidance to the trial court on important issues.

States such as Kansas, Nebraska, and Wyoming determine their water rights administratively, and the agency's order of determination is a final and enforceable document.[878] These decisions, however, are still subject to judicial review in a fashion similar to the judicial review of decisions by other administrative agencies.[879] In Kansas, for instance, the chief engineer's determination of vested water rights is "subject to review in accordance with the act for judicial review and civil enforcement of agency actions."[880] A similar provision exists in Nebraska.[881] In Wyoming, the normal adjudication procedures contemplate an administrative appeal from the Board of Control to the district court.[882] In the Big Horn River adjudication, however, the Board of Control does not determine water rights in its usual capacity; hence, the appeals of significance are from the district court to the state supreme court.[883] An unresolved question is whether, after adjudication is complete, appeals from the Board of Control will be lodged with the Big Horn adjudication court, since it arguably retains jurisdiction over all the parties pursuant to the McCarran Amendment, or with the appropriate district court under the state's Administrative Procedure Act.

In most of the states with judicial-style adjudications, an appeal of the trial court's final judgment or decree follows the normal procedure for civil appeals or appeals from equity proceedings. Often, the adjudication statute is explicit on this point.[884] Colorado allows direct appeal from water court determinations to the state supreme court.[885] In other states, such as Arizona, New Mexico, North Dakota, Oklahoma,

878. KAN. STAT. ANN. §§ 82a-704a(d), -705 (2004); NEB. REV. STAT. § 46-226 (2005); WYO. CONST. art. 8 § 2.

879. KAN. STAT. ANN. § 82a-724 (2004); NEB. REV. STAT. § 46-229.05 (2005); WYO. STAT. ANN. § 42-2-111 (2005).

880. KAN. STAT. ANN. § 82a-724 (2004).

881. NEB. REV. STAT. § 46-229.05, 61-207 (2005).

882. WYO. STAT. ANN. § 41-4-401 (2005).

883. *In re* The General Adjudication of All Rights to Use Water in the Big Horn River System (Big Horn Adjudication Phase III Procedures), No. 86-0012, at 21 (5th D. Wyo. Jan. 21, 1986).

884. *See, e.g.*, ALASKA STAT. § 44.62.560 (2004); CAL. WATER CODE § 2771 (West 2006); COLO. REV. STAT. § 39-92-304(9) (2005); NEV. REV. STAT. ANN. § 533.200 (LexisNexis 2005); TEX. WATER CODE ANN. § 11.322(c) (Vernon 2005); UTAH CODE ANN. § 73-4-16 (2005); and WASH. REV. CODE ANN. 90.03.200 (West 2006).

885. *In re* Application for Water Rights of Certain Shareholders in Las Animas Consol. Canal Co., 688 P.2d 1102, 1105 n. 5 (Colo. 1984); COLO. REV. STAT. § 13-4-102(1)(d) (2005); COLO. CONST. art VI, §2(2).

and South Dakota, the appellate procedure is the same as other civil cases because the adjudication statute is silent.

Several states have created special appellate procedures, either by statute or court rule. Montana's procedure is specific, indicating that under certain conditions a person can appeal a final water court decree to the state supreme court. If a person who requested and participated in a hearing on an earlier temporary preliminary or preliminary decree, or a person's water rights or priorities as originally set forth in the temporary preliminary or preliminary decree changed as the result of another person's objection, they may appeal.[886] In Idaho, the adjudication statute authorizes appeals to the state supreme court as provided by a rule or order of the supreme court.[887] The Arizona Supreme Court even adopted a special interlocutory appeals order with the goal of allowing expeditious direct appeals to that court on certain important issues that would shape the Gila River adjudication.[888] The well-intended process, however, was anything but expeditious. The court took ten years, from 1990 to 2000, to issue opinions on five interlocutory issues.[889]

Regardless of how a state proceeds, the appeals of partial, final, or interlocutory decrees, often with reversals and remands to the trial court, results in an ongoing conversation between the trial and appellate courts as the lengthy adjudication progresses.

U. Ethical Considerations for Judges and Attorneys

Water cases present unique ethical problems for which there are no easy answers. Because of the interconnection of water resources, lawyers often find themselves in the uncomfortable position of representing clients with possible adverse interests. Beyond these situations, the basic duty of competence may come into question in more complex water cases. A scarcity of qualified attorneys may lower the standards for competence or interfere with claimants' quality of representation in water right adjudications.

Water attorneys and judges may consult various sources when considering difficult ethical problems. Conflicts of interests are addressed in American Bar Association's ("ABA") *Model Rules of Professional Con-*

886. MONT. CODE ANN. § 85-2-235 (2005).

887. IDAHO CODE ANN. § 42-1418 (2005).

888. *In re* the Matter of the Rights to the Use of the Gila River, 830 P.2d 442, app. A at 456 (Ariz. 1992).

889. *In re* the General Adjudication of All Rights to Use Water in the Gila River Sys., 35 P.3d 68, 71 (Ariz. 2001); *In re* the General Adjudication of All Rights to Use Water in the Gila River Sys., 9 P.3d 1069, 1072 (Ariz. 2000); *In re* the General Adjudication of All Rights to Use Water in the Gila River Sys. 989 P.2d 739, 742 (Ariz. 1999); *In re* the General Adjudication of All Rights to Use Water in the Gila River Sys., 857 P.2d 1236, 1238 (Ariz. 1993); *In re* the Matter of the Rights to the Use of the Gila River, 830 P.2d at 445.

duct ("Model Rules"). The rules state that a "lawyer shall not represent a client if the representation . . . will be directly adverse to another client[.]"[890] However, if the lawyer reasonably believes his or her representation will not be adverse to either client, and each client consents, then the lawyer may represent both clients.[891] Thus, if the attorney is loyal to both clients and acts appropriately, the lawyer ordinarily will not run afoul of ethical considerations.

Colorado adopted this approach to ethical conflicts.[892] Attorneys may represent two or more clients in a river system, as long as in the course of litigation, representation of one client does not impair the water rights of the other client.[893] If there is actual or potential impairment of rights, however, the attorney must refrain from representing both.[894] Under this standard the Colorado Supreme Court construes the inability to pursue a particular course of action due to potential conflicts as impairment.[895]

Because of the relatively small number of water attorneys, those who practice can find themselves in the position of arguing adverse positions. This raises another problem: does arguing adverse positions on behalf of clients create a conflict of interest? The *Model Rules* allow an attorney to take two adverse positions as long as the clients' interests are not adversely affected and each gives informed, written consent.[896] The ABA recognized that by arguing an adverse position, an attorney may create a precedent harmful to a subsequent client.[897] Although some jurisdictions accepted this argument and banned such practices, others rejected it. California dismissed this argument because of countervailing considerations, including the fact that issue conflicts in water adjudications are very common, and a ban would create problems in small communities or in specialized water practices.[898] Also, detecting conflicts, particularly among large firms, would be difficult.[899] Finally, clients should have the freedom to choose counsel.[900]

The *Model Rules* also regulate conflicts of interest between present and former clients. The general rule is a lawyer should not represent a client if the lawyer previously represented another in the same or a substantially related matter, unless the former client consents.[901] The

890. MODEL RULES OF PROF'L CONDUCT R. 1.7(a)(1) (2003).
891. *Id.* R. 1.7(b).
892. COLO. RULES OF PROF'L CONDUCT R. 1.7(2)(b) (2005).
893. Colo. Bar Ass'n Comm. On Prof'l Ethics, Formal Op. 58 (1995).
894. *Id.*
895. COLO. RULES OF PROF'L CONDUCT R. 1.7 cmt. (2005).
896. MODEL RULES OF PROF'L CONDUCT R. 1.7 (2003).
897. ABA Comm. on Ethics and Prof'l Responsibility, Formal Op. 93-377 (1993).
898. Cal. Bar Ass'n Comm. on Prof'l Responsibility and Conduct, Formal Op. 1989-108 (1988).
899. *Id.*
900. *Id.*
901. MODEL RULES OF PROF'L CONDUCT R. 1.9(a) (2003).

rules construe a substantially related matter as one arising out of the same facts or occurrences.[902] If exposing confidences imparted by the previous client is likely, then the attorney should desist from representing the more recent client.[903]

The rules may disqualify a firm from representing clients under certain circumstances as well. The *Model Rules* state that if *any* firm lawyer individually could not represent the client, than no other lawyer in the firm can represent the client.[904] The rules may also disqualify a firm if it hires a non-lawyer staff member who has confidential information about the firm's opponent.[905] If a firm screens a paralegal or secretary from a sensitive case he or she was previously involved with, the firm can usually avoid disqualification.[906] However, screening will not normally allow firms to represent two adverse clients simultaneously.[907] This rule can cause problems with water law in localities with few water attorneys, many of whom may work in the same firm.

Ethical concerns can also arise when public officials enter private practice. The *Model Rules* state that an attorney "shall not represent a private client in connection with a matter in which the lawyer participated personally and substantially as a public officer or employee."[908] Arizona's state bar offered an informal opinion clarifying the status of clerks and interns employed by the adjudication court. These persons may represent clients in the adjudications after a two-year hiatus, as long as the employee did not directly and substantially deal with the particular contested case as a clerk or intern.[909] Thus, the Arizona State Bar follows Rules 1.11 and 1.12 of the *Model Rules.*[910]

Communications between the court and the water agency has raised ethical issues. By statute, the Arizona Department of Water Resources serves as the court's technical advisor.[911] In one instance, a special action proceeding challenged communications between the Arizona Department of Water Resources and the adjudication judge.[912] The Arizona Supreme Court held that the superior court judge's *ex parte* communications with the department did not require her disqualification.[913] The court also held the department's chief legal coun-

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902. *Id.* cmt. 3.
903. Cynthia F. Covell, *Ethical Issues in the Water Rights Context–A Conflict of Interest Quagmire?*, 42 ROCKY MTN. MIN. L. INST. 23-15 (1996).
904. MODEL RULES OF PROF'L CONDUCT R. 1.10(a) (2003).
905. Covell, *supra* note 903, at 23-20.
906. *Id.* at 23-20 to -21.
907. *Id.* at 23-25.
908. MODEL RULES OF PROF'L CONDUCT R. 1.11(a)(2).
909. Ariz. State Bar Comm. on Rules of Professional Conduct, Informal Op. 1434 (1993) (on file with author).
910. *See* MODEL RULES OF PROF'L CONDUCT R. 1.11-1.12 (2004).
911. ARIZ. REV. STAT. ANN. § 45-256(A) (2005).
912. San Carlos Apache Tribe v. Bolton, 977 P.2d 790 (1999).
913. *Id.* at 794.

sel's *ex parte* communications with the judge did not require his disqualification as department's chief counsel.[914]

A judge may be a claimant or water user in a stream system that he or she is slated to adjudicate. Early disclosure of interests by judges to parties can assist in these circumstances.[915]

V. Costs and Funding

The costs of general stream adjudications and the funding mechanisms of western states vary. The various state agencies and courts conducting these proceedings often have different sources of revenue. In Idaho, the adjudication's annual budget was approximately $5.4 million for combined department and court activities.[916] In Montana the combined expenditures for the water court and the Department of Natural Resources and Conservation was just over $1.2 million per year from 1980-2003.[917] In Wyoming, the state engineer's annual budget is approximately $8 million.[918] In 2006, the Nebraska Department of Natural Resources requested almost $4 million for water policy management.[919] The Utah legislature's annual appropriation to the Divi-

914. *Id.* at 796.

915. A particularly messy incident in Idaho indicates the problems that can occur when judges own water rights in the adjudications over which they preside. Judge Barry Wood, the presiding judge for the Snake River adjudication, ruled against some of the Nez Perce Tribe's claims. The tribe then filed a motion to disqualify Wood from the adjudication because he failed to disclose that he and family members held water right claims that could be adversely affected by such tribal claims. Wood denied the motion, but allowed the tribe to appeal to the Idaho supreme court. In the mean time, Wood's brother-in-law, Dan Eismann, had defeated incumbent Justice Cathy Silak for a position on the supreme court. After Eismann's election, the Idaho supreme court removed Judge Wood from the Snake River adjudication after the state judicial council determined that it would be a conflict of interest for Eismann to participate in reviewing his brother-in-law's decisions. *See* ENVIRONMENTAL POLICY PROJECT, GEORGETOWN UNIVERSITY LAW CENTER, CHANGING THE RULES BY CHANGING THE PLAYERS: THE ENVIRONMENTAL ISSUE IN STATE JUDICIAL ELECTIONS (2000), *available at* http://www.law.georgetown.edu/gelpi/sjelect/judicial_elections.pdf (last visited Apr. 24, 2006).

916. JOINT SENATE FIN. HOUSE APPROPRIATIONS COMM., 2005 LEGISLATIVE FISCAL REPORT, 58, 1st Sess., at 4-39, -46 (Idaho 2005), *available at* http://www.legislature.idaho.gov/budget/index.htm (follow "FY 2006 Legislative Fiscal report" hyperlink) (last visited Apr. 24, 2006).

917. Memorandum from Krista Lee Evans, Research Analyst to Mont. Envtl. Quality Council (Feb. 23, 2004), *available at* http://leg.state.mt.us/content/lepo/2003_2004/environmental_quality_council/staffmemos/adjudication_funding.pdf (last visited Apr. 14, 2006).

918. DEP'T OF ADMIN. AND INFO., WYOMING. STATE GOVERNMENT ANNUAL REPORT 2005, at 3.65, *available at* http://will.state.wy.us/slpub/reports/ (then follow "Engineer, State" hyperlink) (last visited Apr. 24, 2006).

919. NEB. DEP'T OF NATURAL RES., 2005 AGENCY SUPPLEMENTAL BUDGET REQUESTS, *available at* http://www.budget.ne.gov/das_budget/deficits06/deficit06req.htm (follow "Natural Resources, Department of "hyperlink) (last visited Apr. 24, 2006).

sion or Water Rights is a little over $6.5 million, while the Division of Water Resources receives approximately $10 million for adjudication-related work and the ten full-time employees that work on adjudication activities.[920] For the fiscal year of 2006, the New Mexico state engineer's budget was $17 million.[921]

States spend perhaps the greatest amount of money in these proceedings on hydrographic investigations and notice to water users. Yet, the cost of preparing hydrographic surveys also varies greatly across watersheds. For example, in New Mexico the legislature appropriated $101 million to complete the Pecos River Basin Hydrographic Survey and the prosecution of stream system adjudications.[922] Depending on the state's approach and the number of parties, the cost of notice differs substantially.

The funding mechanisms employed by western states also vary. Montana funded the water court with special state revenue funds from their renewable resource grant and loan account.[923] In 2005, the Montana legislature adopted a biennial charge on non-federal water rights.[924] The fee is $20 per water right for most water uses, with the charge capped at twenty water rights per person.[925] The state will use these revenues to defray court and departmental costs.[926] In Washington, the state allocates money for the Yakima adjudication, including state contracts for the legal assistant and a court clerk for the judge. The state Department of Ecology employees all other staff, including the referee, technical writers, and secretaries.

Many states rely on filing fees from water users to cover adjudication expenses. For example, South Dakota requires a $50 fee for filing

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920. OFFICE OF THE LEGISLATIVE FISCAL ANALYST, 2005-2006 APPROPRIATIONS REPORT, 2005 Gen. Sess., at 145 (Utah 2005), *available at* http://www.le.state.ut.us/asp/lfa/lfareports.asp (follow "FY 2006 Appropriations Report" hyperlink) (last visited Apr. 24, 2006).

921. NEW MEXICO LEGISLATURE, LEGISLATIVE FINANCE COMMITTEE, 2005 POST-SESSION FISCAL REVIEW, *available at* http://legis.state.nm.us/lcs/lfc/lfcpublications.asp (follow "Post Session Fiscal Review May 2005" hyperlink) (last visited Apr. 24, 2006).

922. NEW MEXICO LEGISLATURE, PECOS RIVER BASIN HYDROGRAPHIC SURVEY FISCAL IMPACT REPORT (2006), *available at* http://www.legis.state.nm.us/Sessions/06%20Regular/firs/HB0553.pdf (last visited Apr. 24, 2006).

923. LEGISLATIVE FISCAL DIV., LEGISLATIVE FISCAL REPORT 2007 BIENNIUM, at F-29 (Mont. 2005), *available at* http://leg.mt.gov/css/fiscal/2007_biennium/ fiscal_report.asp (follow "long-range planning" hyperlink under section F) (last visited Apr. 24, 2006).

924. MONT. CODE ANN. § 85-2-276(1) (2005).

925. *Id.* § 85-2-276.

926. This should produce $2.4 million per year through 2015 and another $890,000 through 2020 without adjusting for inflation. MONT. ENVT'L QUALITY COUNCIL, REPORT TO 59TH LEGISLATURE: MONTANA'S WATER – WHERE IS IT? WHO CAN USE IT? WHO DECIDES? 64-73 (2004), *available at* http://www.leg.state.mt.us/content/publications/lepo/2005waterreport.pdf (last visited Apr. 24, 2006).

and examining a claim.[927] Washington requires an applicant to pay a $25 filing fee for statements of claim with the clerk of the superior court.[928] Nevada requires a $50 filing fee for proof of claims for livestock and wildlife uses and a $100 fee for all other water uses.[929] Yet, many states have found filing fees inadequate in covering expenses. Oregon, for example, initially expected filing fees to cover administrative costs, but recently has turned instead to the state for additional funding.[930] North Dakota apportions the costs of an adjudication suit, including the state's costs and the cost of preparing hydrographic surveys, to each of the private parties based on the amount of the water rights allotted.[931] Oklahoma allocates the cost of the suit against each of the private parties in proportion to the amount of water rights allotted.[932] Alaska's commissioner may even assess extra costs against any participant who has, in bad faith, asserted a claim to water or has unreasonably delayed the proceeding.[933] Other states require no fees from water users. Kansas, for instance, does not charge a fee for filing of claims of vested rights. Utah covers administrative and litigation costs through state agency budgets, rather than filing fees from claimants. In New Mexico, parties incur fees only for the state engineer's preparation of the final decree.[934]

With the costs of adjudications skyrocketing, many western states, such as Idaho, Nevada, and Oregon, have looked to the federal government to pay filing fees in an effort to reduce the states' financial burden. Hostile to this approach, the federal government, with the federal judiciary behind them, reduced the possibility of substantial federal assistance in these proceedings.[935] Some western states have supported congressional legislation that would require all federal agencies filing water right claims in state adjudications to pay fees and costs to the same extent as a private party to the same proceeding.[936]

The overall costs of these proceedings are staggering and continue to grow. Accept for major governmental program initiatives, states and other agencies have compiled little financial information to indicate

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927. S.D. CODIFIED LAWS § 46-2-13 (2005).

928. WASH. REV. CODE §§ 36.18.016, 90.03.180 (West 2006).

929. NEV. REV. STAT. ANN. § 533.135(2) (LexisNexis 2005).

930. *See* Memorandum from Krista Lee Evans, Research Analyst to Mont. Envtl. Quality Council (Feb. 23, 2004), *available at* http://leg.state.mt.us/content/lepo/2003_2004/environmental_quality_council/staffmemos/adjudication_funding.pdf (last visited Apr. 24, 2006).

931. N.D. CENT. CODE § 61-03-17 (2005).

932. OKLA. STAT. ANN. tit. 82 § 105.6 (West 2006).

933. ALASKA STAT. § 46.15.165(h)(i)(4) (2004).

934. N.M. STAT. § 72-4-19 (2005).

935. *See* United States v. Idaho, 508 U.S. 1, 3 (1993) (forbidding the state of Idaho to extract $10 million from the federal government to participate in the state's adjudication proceedings).

936. *See* S. 447, 107th Cong. § 3 (2001); H.R. 705, 107th Cong. § 3 (2002).

total expenditures for parties, governmental agencies, and courts. For the period 1980-2003, Idaho estimates it has spent approximately $68 million on court and department costs combined.[937] Montana spent more than $37 million on its adjudication from 1980 to 2003.[938] These estimates do not include the unquantified costs incurred by claimants in either state. In Wyoming, ongoing litigation expenses alone, as of 1993, are estimated at $20 million throughout three phases of activity.[939] Texas, which has completed adjudication of surface water rights, estimates that the state has spent about $10 million in court costs and attorneys fees.[940] Even in the mid-1990s, Arizona estimated having spent approximately $100 million on that state's adjudications, which includes an estimate of the Department of Water Resources expenses and lawyers fees of major parties. Indian tribes in Arizona, especially the Apache Tribes, indicated that they spent almost $1.1 million in attorneys' fees and costs simply to challenge Arizona's 1995 adjudication legislation.[941] This cost is separate from other expenses these tribes have incurred due to the state's adjudication proceedings.

The financial costs of these proceedings have led many to wonder if they are indeed worth the expense. A cost-benefit analysis of such proceedings may reveal that such costs are economically unjustified. With the diffusion of costs across agencies, courts, and claimants, it is difficult to evaluate the efficiency and effectiveness of these proceedings. The next section provides a basic assessment of general stream adjudications.

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937. Memorandum from Krista Lee Evans to Mont. Envtl. Quality Council, (Feb. 23, 2004), *available at* http://leg.state.mt.us/content/lepo/2003_2004/ environmental_quality_council/staffmemos/adjudication_funding.pdf (last visited Apr. 24, 2006).

938. *Id.*

939. Teno Roncalio, *The Big Horns of a Dilemma, in* INDIAN WATER IN THE NEW WEST 209, 211 (Thomas R. McGuire et. al eds., 1993).

940. Doug Caroom & Paul Elliot, *Water Rights Adjudication - Texas Style,* 44 TEX. B. J. 1183, 1184 (1981).

941. OFFICE OF THE SPECIAL MASTER, ARIZONA GENERAL STREAM ADJUDICATION BULLETIN, October 1996, *available at* http://supreme.state.az.us /waternews/issues/oct96.htm (last visited Apr. 24, 2006).

IV. ASSESSMENT OF GENERAL STREAM ADJUDICATIONS

> Stay your course! Complete your adjudications. While these cases may be difficult, future generations will praise your wisdom and dedication if you complete your work. For then, the waters of your state will be under great pressure from increased population and utilization. Your decree will be the difference between civilization and anarchy along many of your rivers.[942]
>
> -Justice Gregory J. Hobbs, Jr., Colorado Supreme Court

All of the major general stream adjudications have been underway for at least three decades. In some parts of the American West, certain cases have been underway for almost a half-century. During this period, legislatures wrote most of the state and federal environmental laws. The energy crisis has blossomed and gone dormant. The Bureau of Reclamation has shifted from engineering dams to managing water for power, irrigation, and environmental needs, and may even be swinging back. The longevity of these cases is such that they have outlasted the original Volkswagen Bug (and seen its reemergence), the IBM electric typewriter, the Cold War, and Johnny Carson's Tonight Show.

General stream adjudications have been an important, if not the central, feature of the water policies of many western states. Unfortunately, many other elements of states' water management and development programs, such as the development of water plans and the enforcement of priorities, became hostages to the uncertainty and confusion that invariably beset the adjudications. Some of the pressures for stream adjudications in the 1970s, such as massive energy development, are no longer so troublesome. However, as the west rapidly develops, water will continue to be an important component of that growth. Water right records are not what they should be, and the majority of Indian and federal agency water rights remain unquantified and underdeveloped.

After several decades of conducting comprehensive adjudications, requiring the expenditure of millions of dollars of public and private money, it is appropriate to pause and evaluate these cases as public policy programs. Have these water adjudications achieved the goals originally set for them: (1) confirmation of existing water rights thereby providing title-security, (2) quantification of federal reserved water rights, and (3) the creation of a centralized listing of water

942. Gregory J. Hobbs, Jr., Colorado Supreme Court Justice, Remarks at a panel discussion titled "Two Decades of Water Law and Policy Reform: A Retrospective and Agenda for the Future" held during the conference *Clarifying State Water Rights and Adjudications* sponsored by the Natural Resources Law Center, School of Law, University of Colorado (June 13-15, 2001) (notes from discussion on file with author).

rights? More fundamentally, have the adjudications produced, or are they reasonably likely to produce, better water management in the arid West?

Alternatively, are these cases the modern day equivalent of the worst moments of the Reclamation Era, pushing large amounts of money in the face of the region's water scarcity problem with little consideration of the consequences? Are adjudications outmoded? Moreover, were they ever a tenable response to the uncertainty and fluctuating character of western water supplies and allocation? Are the basic concepts of adjudications, *comprehensiveness, certainty,* and *finality,* still meaningful in the context of western water rights? Should these adjudications be continued or abandoned?

The next section addresses these and other questions by applying the basics of public policy evaluation to assess the status and viability of western general stream adjudications. The section concludes by offering a scaled-down, but perhaps more realistic justification for continuing these cases.

A. Basics of Public Policy Evaluation

Public policy or program evaluation is simply one phase of the public policy cycle that starts with the diagnosis of a problem in the public sphere and continues through the planning of a general approach to address the problem, the selection of specific strategies, and the implementation of the strategies. Implementation is preferably accompanied by an evaluation phase that leads to necessary program modifications.

A judge's management of a single personal injury case rarely rises to the level of public policy importance that would justify program evaluation. Appellate courts can better address mismanagement or errors in a single case. No one would subject a judge's management of his or her entire caseload to a program evaluation, although voters or other officials may question the judge's case management procedures at the next election or in judicial performance or conduct proceedings.

However, a comprehensive water adjudication is not a typical law suit. The large number and diversity of parties, the duration of the cases, the wide geographic scope of the proceedings, the magnitude of public and private resources invested, and the life-giving, economic, and cultural importance of the water rights at issue all propel this litigation into the public sphere. Thus, the evaluation of these cases as public policy programs is an appropriate undertaking so long it does not compromise judicial independence and the parties' due process rights.

At a very basic level, program evaluation can analyze program either *effectiveness,* an "outcome" evaluation of how well the program did in meeting its originally stated goals, or program *efficiency,* a "process"

evaluation concerned with how well program resources are deployed to meet program goals, or undertake both inquiries.[943] Program evaluators use both quantitative and qualitative measures, although most experts prefer the former approach since it "endeavor[s] to approximate the scientific measures of the physical sciences."[944]

Because evaluation methodology is often complex, this article does not discuss these techniques in any detail because few comprehensive adjudications, whether in state or federal court, have undergone program evaluations of *any* kind. Often, the financial data is not available to begin such an evaluation. A legislatively funded study scrutinized the Montana state court adjudications in 1989, but the contractor was a Denver law firm more interested in the legal sufficiency of the adjudications than in their public policy merit.[945] More recently, both Washington and Montana recently undertook reviews of their adjudication programs. In Washington, the emphasis was on streamlining the adjudication process.[946] Montana's review focused on the objection process and the financial needs of the adjudication.[947]

To the extent adjudications rely on legislatively appropriated money, appropriations committees conduct a cursory review during annual or biennial sessions. However, few legislators or staffers have the tenure to understand the history of the litigation or appreciate its long-term cost. Some states disperse adjudications among relatively autonomous courts, making data gathering and analysis more difficult. Frequently, the main justification offered for continued funding of an adjudication is that, without a state-sponsored case, the litigation will shift to ("god-forbid," say some) federal court.

Federal court adjudications, which appear on the dockets and in the statistics as other "large, complex cases," equally escape analytical scrutiny. Many small water uses have questioned the large legal bills in these adjudications, but the users are rarely organized in an effective way to protest the costs. Major water users have typically considered their hefty legal bills as part of the cost of doing business, although

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943. ROBERT B. DENHARDT, PUBLIC ADMINISTRATION: AN ACTION ORIENTATION 256 (1991). *See also* HAL G. RAINEY, UNDERSTANDING AND MANAGING PUBLIC ORGANIZATIONS 207-22 (1991) (discussing different models for organizational effectiveness); COLE BEASE GRAHAM, JR., & STEVEN W. HAYS, MANAGING THE PUBLIC ORGANIZATION 229-245 (1986) (discussing purpose, approach, uses, and function of policy evaluations).

944. DENHARDT, *supra* note 943, at 259.

945. KRISTA LEE EVANS, CHRONOLOGY OF MONTANA'S WATER ADJUDICATION PROCESS, 1972-2003 8 (2003), *available at* http://www.leg.state.mt.us/content/lepo/2003_2004/environmental_quality_council/staffmemos/chronology.pdf.

946. WASHINGTON DEP'T OF ECOLOGY, No. 02-11-019, STREAMLINING THE WATER RIGHTS GENERAL ADJUDICATION PROCEDURES 2 (2002), *available at* http://www.ecy.wa.gov/pubs/0211019.pdf.

947. *See* MONT. ENVT'L QUALITY COUNCIL, REPORT TO 59TH LEGISLATURE: MONTANA'S WATER – WHERE IS IT? WHO CAN USE IT? WHO DECIDES? 65-66 (2004), *available at* http://www.leg.state.mt.us/content/publications/lepo/2005waterreport.pdf.

there are anecdotal indications that some large clients are requiring more justification for the mounting legal expenses incurred in these cases.

B. Informal Assessment of Adjudications

This article does not offer a rigorous program evaluation of the many adjudications identified in this article. The number of cases, the many years that they have been pending, and the fragmentary data all make such inquiries impractical. Yet, this article does offer an informal assessment of general stream adjudications based on the basic public administration principles presented above. Perhaps this initial effort will identify questions that academic researchers or governmental analysts can more thoroughly pursue.

The fundamental public policy objective of comprehensive general stream adjudications is to improve water management in the arid west. Three related goals could satisfy this public policy if water adjudications accomplished: (1) the confirmation of existing water rights; (2) the quantification of federal reserved water rights; and (3) the creation of a centralized listing of water rights. Implicit in this undertaking was the assumption that, once general stream adjudications accomplished these goals, western water titles would be final and certain.

From an *effectiveness* vantage point, it is difficult to demonstrate that adjudications have significantly improved water management in the region. This is true primarily because most of the adjudications are still incomplete, as courts have not issued final decrees for most of the existing water rights pending in these adjudications. Additionally, most of the federal reserved water right claims are still outstanding. Most states still yearn for a central list of water rights, although claims filed in the adjudications, agency fieldwork, and remote sensing technologies have provided state water managers with much more water use information. Even in areas where courts enter final decrees, there is little evidence to indicate that adjudicated rights lead to better water management. The exception may be Colorado, where, as a result of a century of ongoing adjudications, the court regularly administers decrees.

From an *efficiency* perspective, stream adjudications fare even worse. Governments and private parties have poured lavish amounts of time and money into these cases to achieve only a small number of finalized water rights. In most states, the enormous costs of the litigation, divided by the small number of water rights actually finalized, results in a gigantic per-right cost of adjudication.

Delay may be the most commonly shared characteristic of western adjudications. Given the dates when most western adjudications began, the life of these proceedings may be measured in decades. For example, claimants filed the bulk of New Mexico's adjudications from 1956 to 1984, including the *Aamodt* case, which is the oldest active case

pending before a federal trial court in the entire country.[948] In Utah, the adjudications have been continuous since the early twentieth century and are likely to continue indefinitely.[949] All of the adjudications commenced in the 1970s, including those in Arizona, Montana, Washington, and Wyoming, are ongoing.[950]

Some of these cases may even be perpetual. Colorado has effectively embraced this notion by creating water courts with ongoing, "rolling" adjudications.[951] Nebraska aspires to a fifteen-year cycle of review for all water rights in the state.[952] Thus, like Lazarus, even "finished" adjudications with "final" decrees rise up from the past. Courts in some states regularly reexamine previous decrees in the "new" general stream adjudications.[953]

Of the proceedings reviewed for this article, only Texas may have completed a comprehensive adjudication.[954] The Texas adjudicators, however, did not have to face the complexity of federal reserved water right claims or groundwater. Additionally, Texas faces the distinct possibility that it will have to adjudicate the Rio Grande as it enters Texas due to the burgeoning metropolitan growth in El Paso and other

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948. *See* New Mexico *ex rel.* Reynolds v. Aamodt, 537 F. 2d 1102, 1104-05 (10th Cir. 1976), *rev'd and remanded* (appealing an order from a suit brought in 1966); New Mexico *ex rel.* Reynolds v. Aamodt, 618 F. Supp. 993, 1010-11 (1985) (issuing an interlocutory order). The New Mexico District Court has yet to issue a final opinion on the Pueblo water rights under New Mexico law.

949. BUREAU OF LAND MANAGEMENT, UTAH WATER RIGHTS FACT SHEET (1991), http://www.blm.gov/nstc/WaterLaws/pdf/Utah.pdf.

950. BUREAU OF LAND MANAGEMENT, ARIZONA WATER RIGHTS FACT SHEET (1991), http://www.blm.gov/nstc/WaterLaws/pdf/Arizona.pdf; MONTANA ENVIRONMENTAL QUALITY COUNCIL, REPORT TO 59TH LEGISLATURE: MONTANA'S WATER – WHERE IS IT? WHO CAN USE IT? WHO DECIDES? 34 (2004), *available at* http://www.leg.state.mt.us/content/publications/lepo/2005waterreport.pdf.; WASHINGTON DEPARTMENT OF ECOLOGY, WATER RIGHT GENERAL ADJUDICATIONS, http://www.ecy.wa.gov/programs/wr/rights/adjhome.html; BUREAU OF LAND MANAGEMENT, WYOMING WATER RIGHTS FACT SHEET (2001), http://www.blm.gov/nstc/WaterLaws/pdf/Wyoming.pdf.

951. John D. Leshy, *Water Rights for New Federal Land Conservation Programs: A Turn-of-the-Century Evaluation*, 4 U. DENV. WATER L. REV. 271, 279 n. 39 (2001).

952. OFFICE OF THE SPECIAL MASTER, ARIZONA GENERAL STREAM ADJUDICATION BULLETIN, Dec. 1996, *available at* http://www.supreme.state.az.us/waternews/issues/dec96.htm.

953. Some adjudication statutes require the contemporary adjudication court to honor prior decrees. *See, e.g.*, ARIZ. REV. STAT. § 45-257(B)(1) (2005) ("when rights to the use of water or dates of appropriation have previously been determined in a prior decree of a court, the court shall accept the determination of such rights and dates of appropriation as found in the prior decree unless such rights have been abandoned."). Since most adjudications have numerous parties, there are invariably some water users who were not parties to the prior decree, are not bound by it, and can force its reexamination in the contemporary adjudication.

954. Otis W. Templer, *Texas Water Rights Law: East Meets West*, 85 J. OF CONTEMPORARY WATER RESEARCH & EDUC. 13, 14 (1991), http://ucowr.siu.edu/updates (follow "#85" hyperlink, then follow "Water Rights Issues").

neighboring cities.[955] While Nebraska has completed administrative adjudication of its surface water claims, its sense of finality may be breached by the potential water rights of five federally recognized tribes, the Iowa, Omaha, Sac and Fox, Santee, and Winnebago, who have land in the state and whose claims have not been addressed. Courts decreed Colorado's rivers more than a century ago, but the process of adjudicating and folding in rights for the national forests and other federal lands continues. Completion is always just over the horizon, or perhaps over the rainbow. Unless western legislatures curtail these adjudications or claimants embrace widespread settlement, most of these cases are likely to continue for a decade or more.

If finality as an objective has escaped western states, how far along are these states in completing the task? In many states, the degree of completion is difficult to assess. Some states have decided either not to undertake comprehensive adjudications, such as North Dakota and South Dakota, or to do so only in response to a crisis, like California and Nevada. Utah, New Mexico and other states have been gradually adjudicating their watersheds for decades and are likely to continue doing so for decades to come. Several states may take up to five years to complete major river system adjudications, including Wyoming's Wind River, Washington's Yakima River, Oregon's Klamath Basin. These states will then face challenging adjudications in other watersheds, such as Oregon's and Washington's coastal rivers. For states such as Arizona, Idaho, and Montana, which are undertaking essentially statewide adjudications, completion will likely take more than five years, perhaps even a decade or two. Table 4 provides information on the commencement of comprehensive adjudications in each of the states and provides an assessment of the degree of completion in each state.

955. Texas will, however, have to ponder New Mexico's recent commencement of an adjudication of the Rio Grande below Elephant Butte reservoir. *See* United States v. City of Las Cruces, 289 F. 3d 1170, 1177-78 (10th Cir. 2002). In the current proceeding, New Mexico will quantify rights to water for New Mexicans from a Bureau of Reclamation project that both states share. Texas is waiting to see what impact the New Mexico adjudication will have on its interstate compact rights.

Table 4: Status of Western General Stream Adjudications[956]

State	Year Started	Prognosis
Alaska	Not started	
Arizona	1972	There is no projected completion date. Pending actions exist in Arizona Supreme Court regarding Globe Equity No. 59 Decree (adjudicated decree). Proceedings in Little Colorado adjudication include claims to Show Low Lake. In the Gila River, some claims are proceeding in the San Pedro basin, including claims at Fort Huachuca. State trust land claims are at issue in both adjudications. Several Indian water settlements, most recently including Gila River Indian Community and Tohono O'dham rights were resolved in Arizona Water Settlements Act.
California	Administrative determinations since 1914	California has completed 27 statutory adjudications. Currently, the state undertakes adjudications only when need arises.
Colorado	Ongoing since 1879, 1891	Colorado has adjudicated all seven basins. The state continues to incorporate federal rights with both federal non-Indian claims and implementing the Colorado Ute Indian Final Water Rights Settlement. Continued water court proceedings are expected to occur indefinitely to adjudicate augmentation plans and water right changes.
Idaho	1987	Idaho has completed 8 out of 43 basins. Officials expect the Snake River Basin adjudication expected to be complete in 2009.

956. *See supra* text accompanying notes 263-411 for a more detailed explanation of adjudications in each of these western states.

State	Year Started	Prognosis
Kansas	1945	Kansas mostly completed administrative determination of pre-1945 "vested rights" in 1957, although final cutoff to file claims did not occur until 1980. Since 1945, "appropriation rights" have been established in accordance with the Kansas Water Appropriation Act. No General Stream Adjudications have been undertaken nor are any new proceedings underway. Under K.S.A. 82a-704a, the order of determination of a "vested right" is not deemed an adjudication of the relation between vested right holders.
Montana	1973	Montana's adjudications have no projected completion date. However, the state has issued temporary preliminary decrees in 36 basins with 89,176 claims, preliminary decrees in 11 basins with 23,135 claims, and final decrees in six basins with 16,354 claims. Additionally, the state is examining 17 other basins with 43,614 claims. Montana has also negotiated eight federal reserved rights compacts. There are still 15 basins with 46,379 claims yet unexamined.
Nebraska	1895	Nebraska DWR investigates and holds hearings "as often as necessary." In 2001-2002, DWR held 81 surface water hearings. Hearings determine grants for new rights, cancel unused rights and approve transfers. Appeal to Nebraska courts is available for claimants.
Nevada	1903	Nebraska has 77 ongoing adjudications in selected basins.

State	Year Started	Prognosis
New Mexico	1951	More than one-half of New Mexico's basins are involved in adjudications. Thirty-six percent of the active adjudications have received final determinations.
North Dakota	Not started	
Oregon	1909	Geographically, two-thirds of the basins are complete, but must Oregon must still complete Klamath, Willamette, and coastal range adjudications. It will take five years or more to complete Klamath adjudication
South Dakota	Statutory permitting system 1881, 1907, and 1955; judicial adjudication started in 1980 and canceled; the permitting system continues	South Dakota recognized vested riparian and groundwater rights by statute in 1955. The state has not addressed federal rights. The Water Management Board of seven appointed members is involved in permitting decisions.
Texas	1967 Water Rights Adjudication Act	Texas completed a statewide administrative adjudication of surface water in 1990, but no federal rights were included. The state continues to deal with groundwater issues. Texas's permitting regime includes 11,600 filed claims and 10,000 adjudicated claims.
Utah	1919	Utah complete 35% of its basins and adjudication is ongoing in the other basins. Utah created a water rights adjudication team within Utah's Division of Water Resources in 2004 to help hasten adjudication proceedings.

State	Year Started	Prognosis
Washington	1890, 1917, 1977 (Yakima)	Washington's Yakima River adjudication remains active, and includes 10% of Washington's land, 4000 claims, and 40,000 landowners. 170,000 water rights claims are largely unadjudicated. The superior court estimates it will complete the adjudication within a few years.
Wyoming	1890, 1977 (Big Horn)	Wyoming has adjudicated all Indian and non-Indian federal reserved rights, and the state has adjudicated all *Walton* right claims. Less than 100 state based "Phase III" claims are in process. The Special Ad Hoc Committee has recommended procedures to the court to finalize adjudication proceedings for Big Horn Basin. Projections indicate two years for completion.

In addition to many decades, these cases take millions of dollars to prosecute. In proceedings that involve so many people and such an important resource, financial information is surprisingly fragmentary and incomplete. However, even conservative estimates are daunting. Unfortunately, no state has made a systematic effort to document the cost of these cases or to evaluate the benefits relative to costs. In Arizona, one attorney has estimated that state agency expenses and attorney fees incurred by the major parties between 1974 and 1995 total somewhere between $50 million and $100 million. In Wyoming, the state agencies and courts have probably spent between $30 million and $40 million. The state of Idaho has spent $20 million since 1985. In Montana, state agencies and the water court have spent millions since 1979 and estimate needing between $47 and $52 million to complete the adjudication in the next fifteen years (2006-2021). Texas' completed its adjudications at an estimated cost to the state of $20 million. Except for the Arizona figures, the estimates do not include attorneys' fees and costs paid by private parties. None of the estimates includes the opportunity cost to governments or private parties because of these expenditures.

Because these cases concern so many water rights, they involve both the wealthiest and the poorest of litigants. Often the litigation over an individual's small water right is as expensive as it is for a small town. While courts and states have experimented with state litigation

grants and summary adjudication procedures, states need to develop better mechanisms needs to more equitably spread the cost of these proceedings.

Adjudications have resulted in non-financial costs as well. In many western states, these cases have created or exaggerated conflicts in local communities. Tensions over water rights have been in the background of many western communities for many years. In the eyes of many local residents, the adjudications have brought these conflicts to the surface and threatened the numerous working arrangements people previously used to share scarce water resources.[957] For instance, water users in New Mexico's Taos Valley take pride in creating a system for water sharing among the Indian, Hispanic, and Anglo residents.[958] If the state requires adjudications, the adjudication may undo this local level of cooperation and accommodation. In Arizona, elders of the Hopi Tribe have described their distaste for litigation with their non-Indian neighbors. Growth in the west will undoubtedly accentuate tensions over water, and adjudications are a catalyst to further conflict. Unfortunately, there are few readily accessible mediation pathways to resolve these tensions short of litigation.[959]

In view of these problems, western adjudications are not programmatically effective or efficient. While adjudications originally promised stability and certainty of title for western water right holders, the opposite has been true for two or more decades in almost every state that has initiated such proceedings. Ironically, by concentrating the attention of a host of litigants on each individual water right, litigation has eroded, at least over the short term, the security of water right titles in many watersheds. Where states have set modest goals for themselves in hope of speedy resolution, their progress may have come by sweeping difficult issues, such as federal reserved water rights and surface water-groundwater interface, under the carpet. For those states that have attempted to be comprehensive and exacting, the adjudications are

957. *See generally* Charlotte Benson Crossland, *Acequia Rights in Law and Tradition*, 32 J. SW. 278 (1990) (discussing the effect of water rights adjudications on the traditional water allocation methods of acequias in New Mexico); Frances Levine, *Dividing the Water: The Impact of Water Rights Adjudication on New Mexican Communities*, 32 J. SW. 268 (1990) (discussing the impact of water rights adjudications on the traditional water sharing and reallocation practices of communities in New Mexico); Frances Leon Quintana, *Land, Water, and Pueblo-Hispanic Relations in Northern New Mexico*, 32 J. SW. 288 (1990) (discussing the historical collaboration between the Puebloans and Hispanics to share water and the effects of current and future water projects on this historical system of water allocation).

958. *See, e.g.*, STANLEY CRAWFORD, MAYORDOMO: CHRONICLES OF AN ACEQUIA IN NORTHERN NEW MEXICO (1988).

959. Montana has established a mediation program. *See* MONT. CODE ANN. § 85-5-110 (2005). Since 2001, the Washington Department of Ecology, the Yakama Nation, the Bureau of Reclamation and major water users have significantly advanced the Acquavella adjudication through stipulated agreements.

fraught with delay and are becoming "black holes" that consume endless quantities of money and time. Where legislatures have tried to improve the process, their efforts often delay adjudications. While many water rights adjudications yield valuable hydrologic and water use information, they may never yield comprehensive, detailed final decrees that specify water rights in perpetuity. As law professor A. Dan Tarlock suggested a decade ago, finality and certainty will continue to elude western water users and managers.[960] Ultimately, this is not necessarily a failure of the adjudicators. Rather, the original assignment was unrealistic.

C. One Bright Spot: Reserved Water Right Settlements

The successful completion of reserved water rights settlements is probably the brightest achievement associated with western stream adjudications. Although some of these settlements eventually occurred even without litigation pending, "[t]here is no incentive quite so effective in stimulating voluntary negotiations and transfers as the threat of a protracted and costly court battle."[961] Among others, reserved rights settlements are final with the Fort Peck and Northern Cheyenne Tribes in Montana, the Salt River Pima-Maricopa Indian Community, the Fort McDowell Indian Community, and the Yavapai Prescott Indian Tribe in Arizona, and the Jicarilla Apache Tribe in New Mexico.[962] In addition, Montana has reached a settlement of the water rights for national parks and fish and wildlife reserves, and Wyoming and Washington have reached similar non-Indian reserved right settlements as part of their litigation.[963]

The sentiment is strong that these settlements encourage local cooperation, develop more lasting and satisfactory solutions, and avoid the expense and conflict of litigation. Still, negotiations often take a very long time to accomplish, nearly as long as litigation. In some

960. A. Dan Tarlock, *The Illusion of Finality in General Water Rights Adjudications*, 25 IDAHO L. REV. 271, 273-74 (1989) (discussing the inherent uncertainty of water rights).

961. Bonnie G. Colby, *Benefits, Costs And Water Acquisition Strategies: Economic Considerations in Instream Flow Protection, in* INSTREAM FLOW PROTECTION IN THE WEST 6-1, 6-15 (Lawrence J. MacDonnell & Teresa A. Rice eds., revised ed. 1993); *see also* ELIZABETH CHECCHIO & BONNIE G. COLBY, INDIAN WATER RIGHTS: NEGOTIATING THE FUTURE (1993).

962. *See* MONT. CODE ANN. §§ 85-20-201, -301 (2005); Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549; Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, 104 Stat. 4480; Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994, Pub. L. No. 103-434, 108 Stat. 4526; Jicarilla Apache Tribe Water Rights Settlement Act, Pub. L. No. 102-441, 106 Stat. 2237 (1992).

963. *See* Montana Reserved Water Rights Compact Commission: Federal Reserved Water Rights, http://dnrc.mt.gov/rwrcc/about_us/commissioners.asp; Wyoming State Water Plan: Wind/Bighorn/Clarks Fork Rivers, http://waterplan.state.wy.us/basins/bighorn/issues.html.

cases, the parties alternate between negotiations and litigation as they become disaffected with one or the other process. Reduced federal budgets are a real threat to the continued success of negotiated settlements. Without major infusions of federal money, negotiations are less fruitful and implementation becomes more and more speculative.[964] On balance, settlements represent real progress toward equitable sharing of scarce water. What remains to be seen is how well states will integrate settlements into final decrees from adjudication courts and whether settlements will contribute to improved water management.

D. Why This Lack of Progress?

Because delay afflicts so many western adjudications, this article discusses in more detail the apparent causes of this delay. The original proponents of comprehensive adjudications certainly did not expect courts to complete theses cases overnight. They knew that water right adjudications, like quiet title actions and other complicated civil cases, would require several years. Still, they had a rather simplistic expectation of what these adjudications would require. After all, many previous adjudications merely required a local judge to set a hearing date for all water right holders to come forward and present their claims.[965] The proponents of comprehensive adjudications did not appreciate that these cases, by joining federal reserved claims with all other rights in a river system, would bring jurisdictional challenges, immense technical work, and a staggering volume of rights, objections, and contested cases.

Nevertheless, the proponents of comprehensive cases probably expected that the completion of a river system adjudication would take about the same amount of time as the construction of a major dam. Since westerners had completed such technically magnificent structures as Boulder Dam and Grand Coulee Dam, adjudication proponents certainly never doubted that they could produce a "simple" pa-

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964. David Hayes, former Deputy Secretary of the Interior, responsible for the department's reserved water right settlement efforts, related this story about the difficulty of securing federal funds for negotiations. When asking for support for increasing the department's negotiation budget by $3 million dollars, an influential congressman responded: "Why should we give you more money to negotiate when you'll only bring us expensive settlements to fund?" John E. Thorson & Kathy Dolge, *Proposed Little Colorado River Settlement at Crossroads,* ARIZONA GENERAL STREAM ADJUDICATION BULLETIN (1998), *available at* http://www.supreme.state.az.us/wm/bulletin/ issues/2qtr98.htm#Proposed.

965. While even early adjudications were never that simple, the Arizona case of *Hurley v. Abbott,* resulting in the Kent Decree for the Salt River, provides a relative timeframe. The case arose in 1904 and involved 4800 defendants. The trial took place between 1907-1908. Judge Kent issued his decree on March 1, 1910. *See* KAREN L. SMITH, THE MAGNIFICENT EXPERIMENT: BUILDING THE SALT RIVER RECLAMATION PROJECT 1890-1917 126-30 (1986).

per accounting of existing water rights. Accordingly, one must ask why these expectations were not fulfilled at a quicker pace or with better results. Additionally, why is the completion of some adjudications in serious doubt? Other than the accurate but unsatisfying explanation that the cases are "big," what are the reasons that these cases are taking so long?

1. Uniqueness of Water

The original proponents of comprehensive general stream adjudications underestimated the unique character of western water. They did not appreciate the differences between fluid and static natural resources. Unlike land, water quantity, quality, and value changes rapidly. Interconnected water resources stretch over hundreds of miles and extend over many jurisdictional boundaries. Common law notions of property law, formed by over five centuries of case law, are not well suited to the scarce water resources of the American West. The prior appropriation doctrine is barely a hundred years old, and many of its dimensions and applications are still undetermined. Western state constitutions established water as a hybrid public-private resource incapable of fee-simple ownership. As state governments attempted to fulfill their responsibilities for water, they embarked on a series of hesitant, erratic, and even conflicting steps to urge people to exploit water resources, record their rights, submit to regulation, and validate their claims in a general adjudication.

2. Different Legal Regimes

If the uniqueness of water were not enough, federal law soon became an overlay on state water law, and a substantially different regime emerged for determining federal agency and Indian water rights. The premise of state water law is the use of the resource. In contrast, the premise of federal water law is on reserving the resource for eventual use. In recent years, Congress and federal agencies have added a host of regulatory considerations, sometimes called "federal regulatory water rights," including hydroelectric power licensing requirements, clean water criteria, and threatened and endangered species limitations, which have further complicated the "law of the river" in western watersheds.

Courts have found it difficult to reconcile the different premises of state and federal water law. In Wyoming, for instance, justices of the state supreme court wrote five separate opinions in the Big Horn III case, revealing a knowledge of the *Winters* doctrine that ranged from

workmanlike to the fanciful.[966] While this federal legal overlay is not the major cause of delay in adjudications, it has complicated the job of state courts.

3. Inherent Scale and Complexity

One reason for the delay in completing western stream adjudications is their scale and excruciating interconnectedness. Modern comprehensive water right adjudications have undertaken an enormous task that strains the limits of Anglo-American jurisprudence. General stream adjudications dwarf other examples of complex litigation or regulatory activity. In class action litigation, product liability, or antitrust cases, the dispute is invariably bipolar and the focus of the litigation is on the defendant's conduct. The plaintiffs appear through named representatives and a shared legal team. Even when the defendants are numerous, they have typically undertaken a common course of product development or marketing or have agreed among themselves to anti-competitive behavior. Beyond a core of relatively well-defined legal and factual issues, the litigation variables are limited to individual plaintiffs' damages and defendants' market share.

By contrast, adjudications often have no plaintiff and defendant camps. Water users often wage both offensive and defensive litigation strategies, as either route may enhance the water available to the user. Thus, they simultaneously seek to buttress their rights while challenging other water rights. The factual and legal issues applicable to individual water rights vary considerably as water users established the water rights involved at different times over 150 years, under different legal regimes, and for a wide range of purposes.

Property tax appraisals and assessments are another possible analog to water right adjudications because they involve thousands of land parcels and property owners. This regulatory program reliably produces revenues for local governments throughout the United States. Hence, our society has made a vast investment in the property tax collection infrastructure. Over the centuries, as early as the colonial days, the government has developed a body of assessment and collection laws and technologies. Thousands of local government employees appraise property and collect taxes from railroads, utilities, and other firms that engage in statewide business. Hundreds of others process tax appeals from local governments. Even this vast enterprise is premised on a bipolar relationship: the individual property owner and the tax assessor. Unlike stream adjudications, a landowner rarely seeks to modify his neighbor's assessed value or tax payments. In contrast, water right adjudications need to resolve a broader range of issues with a

966. *In re* General Adjudication of All Rights to Use Water in the Big Horn River System, 835 P.2d 273 (Wyo. 1992).

fraction of the resources available to tax collectors. Further complicating the matter is the fact that the adjudications themselves do not generate any revenue.

The determination of land titles provides a poor analogy to water adjudications. Although there have been many survey problems, the process of determining titles to western land has been an ongoing process, dating back to the original patents from the government, through an eventual succession of resurveys and transfers to the present owners. Where quiet title actions have been necessary, they have not been as complex as water adjudications. In the typical quiet title action, the plaintiff seeks to end a boundary dispute or to determine different parties' interests in a parcel of land. Large quiet title actions usually involve only the relative interest of several hundred persons in a tract of land of only several thousand acres. Water adjudications, by contrast, are retrospective, expedited, "catch-up" efforts to determine ownership characteristics for all rights initiated under the common law and numerous federal, state, Spanish, and Mexican statutes.

In order to approach the inherent scale and complexity of a comprehensive water adjudication, a quiet title suit would have to involve *all* parcels of land in a large watershed or an entire state. Additionally, the court would have to permit any landowner to raise any number of legal or factual controversies involving any parcel of land, regardless of ownership. The court would have to resolve issues involving cotenancies, boundaries, split surface and sub-surface estates, life tenant-remaindermen, adverse possession, easements, and legal descriptions regardless of whether they represented an existing, real controversy between the landowners. To simulate the interrelation of water availability and priority dates, the land parcels would have to change in size under certain conditions. The courts and property owners have never attempted, no less completed a quiet title suit of such a scale. Moreover, even if such a suit were commenced, the court certainly would not complete it within five years, or even fifty years, short of using summary and capricious processes totally antithetical to American notions of due process.

Class action lawsuits, property tax assessments, and even most quiet title actions are like a game of "tug-of-war" between two persons or teams at opposite ends of a rope. The line between winning and losing is clearly demarcated, and the rules are well established and understood. In contrast, water right adjudications are like bumper cars at a carnival—thousands of bumper cars, each car with a shot at every other, no holds barred, and winners never clearly declared.

4. Jurisdictional Struggles

Lengthy jurisdiction battles have also contributed to the delay in these water proceedings. Uncertainty about subject matter jurisdiction has bedeviled adjudications since the passage of the McCarran

Amendment. Only in the late 1970's did the Supreme Court clarify that federal and Indian reserved water rights were, indeed, before the court in McCarran Amendment adjudications.[967] Additionally, not until 1983 did federal and state courts determine that hearings involving Indian water rights were proper in state forums.[968] Finally, in 1994, the United States Court of Appeals for the Ninth Circuit held that the adjudication court does not need to revisit rights recognized in state administrative processes during the adjudication of senior federal and tribal rights.[969] Accordingly, despite passage of the McCarran Amendment in 1952, it took the judicial system forty-five years to resolve jurisdictional uncertainties about adjudicating federal and tribal water rights in state court proceedings.

Some parties continue to scrutinize state court proceedings for the single fatal flaw that will divest the court of jurisdiction under the McCarran Amendment. Future challenges to state court adjudication will likely occur, alleging that the proceedings are not sufficiently broad to include groundwater uses and certain small rights. Indeed, the United States Supreme Court may not have made its final comment on the McCarran Amendment.

5. Engineering Imperative

Another reason for slower-than-anticipated progress in the adjudications has been the engineering perspective shared by the state engineers, water resource departments, technical experts, and parties that comprise the western water community. The story of western water is one of dams, diversions, and drilling; one of physical solutions; and one of similar engineering feats that provided vitality for civilization on the dust of an arid landscape.

Proponents of comprehensive water rights adjudications have kept the faith of the Reclamation Era, believing that science and technology would enable a thorough and precise specification of all water rights in all major western drainages. Their engineering orientation, inherited from these Reclamation notions, both defined and constrained nascent general stream adjudications. These proponents did not anticipate that the hundreds and thousands of water rights, and the hydrologic and legal relationships among those rights, would geometrically complicate the task. They did not understand that, unlike the unified community support for reclamation projects, water adjudications themselves would be controversial, with many of the parties actively committed to delaying or avoiding them. Adjudication proponents

967. Colorado River Water Conservation Dist. v. United States, 424 U.S. 800, 809 (1976).

968. Arizona v. San Carlos Apache Tribe of Ariz., 463 U.S. 545, 563-65 (1983).

969. United States v. Oregon, 44 F.3d 758, 767-769 (9th Cir. 1994).

naively assumed that the cases would be candid exercises in truth telling. Instead, the cases have become poker games, with high stakes and well-hidden hands.

6. Legislative Changes

Because adjudications have public importance, state legislatures are a natural forum for well-meaning efforts to improve procedures, reduce costs, and serve constituents. Unfortunately, legislatures are also the forum for more covert efforts to influence the outcomes of these cases. Some argue that only the legislature can restore order to an out-of-control adjudication process. Others argue that procedural or substantive changes often result in a detriment to some party in the litigation, and that not all litigants have the political power or resources to compete at the legislative level. State legislatures must walk a fine line, on the one hand, between legitimate oversight and helpful changes in the adjudication structure and, on the other hand, becoming the active collaborator or unwitting agent of some adjudication parties seeking to influence the merits of the litigation.

In some states, legislative changes in the substantive or procedural law have created a climate of uncertainty and contributed to the delay in ongoing, pending adjudications. An iron law of adjudications may be that major legislative changes produce more litigation and retard forward progress. For example, litigation followed the adoption of the Colorado Water Rights Determination Act of 1969, the revised Montana adjudication statute in 1979, and the Arizona general stream adjudication statutes in 1979. More recently, the United States challenged legislation to modify the Snake River adjudication in Idaho. This led to an eighteen-month hiatus and the eventual holding by the Idaho Supreme Court that certain portions of the legislation were unconstitutional.[970]

970. State v. United States, 912 P. 2d 614, 626-27, 32 (Idaho 1995). During its 1994 session, the Idaho legislature adopted a comprehensive revision of the 1985 statues governing the Snake River adjudication. 1994 Idaho Sess. Laws, ch. 454-55. After the bill's passage, the trial court initiated basin-wide proceedings to resolve basic jurisdictional and constitutional issues raised by the new legislation. In an opinion issued on Pearl Harbor Day 1994, Judge Daniel Hurlbutt, Jr., declared most of the new legislation unconstitutional because it violated the separation powers doctrine. Memorandum Decision & Order on Basin-Wide Issue No. 3, In re SRBA, No. 39576 (Idaho 5th Dist. Dec. 7, 1994). He noted that "the majority of the essential provisions of the 1994 Act were adopted in order to reverse interlocutory SRBA court decisions or to legislate the outcome of issues which were pending before the court . . ." *Id.* at 121. The decision was immediately reviewed by the Idaho Supreme Court. In September, the court affirmed some portions of the trial court's decision and reversed others. State v. United States, 912 P.2d 614 (Idaho 1995).

In 1995, Arizona's legislature revised their adjudication statutes.[971] Litigants challenged the legislation on a host of federal and state constitutional bases, and on the argument that the state's proceedings no longer satisfy the McCarran Amendment.[972] The Arizona Supreme Court held that the intention of the statutes was to have an overall retroactive effect, and that such an effect is a violation of due process and separation of powers under the state constitution.[973] These legislative changes, and the accompanying legal challenges, resulted in a four-year delay in that state's stream adjudications. Rarely has legislative intervention had the automatic effect of reducing costs and increasing efficiency.

7. Comfort of the *Status Quo*; Fear of the Unknown

Many parties have opposed or delayed comprehensive stream adjudications out of a generalized fear of change or a specific strategy to preserve the *status quo ante*. Many users are uncomfortable with the process because they fear that any change will be bad, leading to divestiture or reallocation of their water. Some parties are happy to live with the present pattern of water distribution instead of making room for senior federal reserved rights, environmental water rights, or the legitimate, competing rights of others. For some claimants, their unquantified water rights have a talismanic power in ongoing or anticipated negotiations that a final decree would demystify and diminish.

Additionally, western water accounting, measurement, and reporting of water use are not accurate, and many users have carved out a niche in the surplus of some river systems. Final and certain rights, administered through a smoothly functioning priority system, might limit or displace some current uses and make others more expensive.

Whether the result of a litigation strategy, overwork, or a simple fear of the unknown, foot-dragging is readily apparent in most adjudication courts. Delay and lack of progress in these cases benefits certain users and attorneys. Dilatory practices often masquerade as jurisdictional challenges, countless objections, discovery battles, settlement negotiations, litigation moratoria, interlocutory appeals, and constitutional challenges.

E. Should Western States Continue to Adjudicate?

A quarter century has passed since the inception of many modern stream adjudications. Few of the original sponsors of these cases are

971. Act of April 13, 1995, ch. 9, Ariz. Sess. Law 17; Act of April 13, 1995, ch. 230, 1995 Ariz. Sess. Laws 1752. These acts revised numerous statutes dealing with surface water rights and the general adjudication process.

972. San Carlos Apache Tribe v. Superior Court, 972 P.2d 179, 186-88 (Ariz. 1999).

973. *Id.* at 188-89.

still professionally active. Most of the water managers, engineers, attorneys, and judges who are involved in the adjudications today inherited these cases from someone else. Accordingly, the adjudications are like a dusty trunk in the attic, without a key to explain the original reasons and context for these cases. More importantly, today's West is no longer the West in which these water adjudications were originally commenced. The participants in these cases and western decision-makers might appropriately ask, why are we adjudicating these cases?

A convincing argument is that general adjudications have landed wide of the original mark of improving water management by adjudicating existing rights, determining tribal and federal agency rights, and creating a centralized record of rights. The cost has been enormous, and the delay that is evident in all adjudications suggests that the achievement of these goals will not occur any time soon.

Yet, are there still convincing reasons to continue these adjudications? Before answering the question, it is worthwhile to reflect on the background reasons that resulted in the comprehensive adjudications and determine if these reasons "hold water" today. The original adjudications were a response to the rapid growth in the western region, interstate competition for water, federal-state tensions over water, the reemergence of tribal self-government, the assertion of federal reserved water right claims, energy shortages, and mistaken assumptions about the inadequacies of water supplies to meet growing demand. Do these forces still appear as a pentimento given the changes in the contemporary image of the American West? A review of two growing western cities, Las Vegas, Nevada, and El Paso, Texas, may help answer the question of whether general stream adjudications remain a valuable strategy in helping meet the West's water challenges.

1. A Tale of Two Cities

The West continues to experience incredible population growth, which has accelerated exponentially since the 1990s. From 1990-2000, the five fastest growing states in the nation were in the West.[974] Nevada led the growth rate with a 66% increase compared with the national increase of 13%.[975] Between 2000 and 2002, nine of the ten fastest growing cities of over 100,000 people were also in the West.[976]

974. U.S. Census Bureau, *Census 2000 Brief: Population Change and Distribution*, April 2001, at 3, *available at* http://www.census.gov/prod/2001pubs/c2kbr01-2.pdf (showing that the five fastest growing states were, in order, Nevada, Arizona, Colorado, Utah, and Idaho).

975. *Id.* at 1-3.

976. *Id.* at 6.

Consider the growth of Las Vegas. The city nearly doubled its population in classic Sunbelt style during the 1980s.[977] Seeking to secure supplies for this glittering city's future, the Southern Nevada Water Authority, which at the time serviced 900,000 people (65% of Nevada's present population), attempted a water grab reminiscent of Los Angeles's raid on the Owens Valley earlier in the century.[978] In its opening move to satisfy an insatiable thirst,[979] "the Las Vegas Valley Water District staked claims to nearly all unappropriated groundwater in a 20,000 square-mile area of southern and central Nevada."[980] For better or worse, "[t]he move puts Las Vegas at the center of reforms that are changing the way water is managed throughout the West."[981]

After a storm of protest over the groundwater applications, Las Vegas turned to the Virgin River, which originates in Utah and drains the southwestern part of the Colorado plateau as it winds through Arizona and Nevada toward the Colorado River. The Las Vegas Valley Water District filed an application with the Nevada State Engineer to appropriate 70,000 acre-feet per year on the Virgin River.[982] In some years, 70,000 acre-feet is less than the annual flow of the Virgin.[983] Both Arizona and California, which depend on the Virgin River as a tributary of the Colorado River, objected to Nevada's plan.[984]

Reaching even further from its borders, Nevada's Colorado Commission then made a "secret gentleman's agreement" with Chevron Shale Oil Company and Getty Oil Exploration Company to temporarily use 175,000 acre-feet of Colorado's apportionment of the Colorado River, with delivery from Lake Mead.[985] Nevada estimates it will tap out its own Colorado River water allotment under the Colorado River Compact (300,000 acre-feet of the 7.5 million acre-feet in the Lower

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977. Jon Christensen, *Water Forces Las Vegas to Choose: Gaming Town or Suburb of Los Angeles*, HIGH COUNTRY NEWS (Paonia, CO), Apr. 6, 1992, *reprinted in* WATER IN THE WEST: A COLLECTION OF REPRINTS, at Vb-1 (1997).

978. Jon Christensen, *Las Vegas Wheels and Deals for Colorado River Water*, HIGH COUNTRY NEWS (Paonia, CO), Feb. 21, 1994, *reprinted in* WATER IN THE WEST: A COLLECTION OF REPRINTS, at Vb-11 (1997).

979. Kurt Andersen, *Las Vegas, U.S.A.*, TIME, Jan. 10, 1994, at 50 (stating that Las Vegas uses an average of 350 gallons of water per person per day, compared with 200 gallons per person per day in Los Angeles, the traditional desert guzzler).

980. Christensen, *supra* note 977, at Vb-1.

981. Christensen, *supra* note 978, at Vb-11.

982. Jon Christensen, *Thirsty Sunbelt Cities Target Water in the Virgin River*, HIGH COUNTRY NEWS (Paonia, CO), Dec. 14, 1992, *reprinted in* WATER IN THE WEST: A COLLECTION OF REPRINTS, at Vb-8 (1997).

983. *Id.*

984. *See* Christensen, *supra* note 978, at Vb-13.

985. Jon Christensen, *Las Vegas Moves on Western Colorado's Water*, HIGH COUNTRY NEWS (Paonia, CO), Mar. 8, 1993, *reprinted in* WATER IN THE WEST: A COLLECTION OF REPRINTS, at Vb-10 (1997).

Basin entitlement) within a decade.[986] Other basin states and the Bureau of Reclamation, the federal entity which supervises the distribution of Colorado River water between the upper and lower basins states, all question how a "secret agreement" can occur under the Law of the River.

While Las Vegas was boldly maneuvering to acquire water regionally, an Indian tribe within the metropolitan area made its own claim on local water resources. Congress provided the long-displaced Las Vegas Paiute Tribe a small reservation near Las Vegas in 1986.[987] Seeking to share in the resort and gaming economy, the tribe constructed a golf course and started pumping groundwater.[988] The Nevada State Engineer immediately sought to enjoin the pumping and commenced an administrative groundwater adjudication of the Las Vegas Basin.[989] The tribe claimed 40,000 acre-feet per year of groundwater, more than the annual recharge to the system.[990] For now, litigation appears to have been averted by a settlement that provides the tribe with a 2000 acre-feet per year of "homeland" right water and includes a "national emergency" water right for the Air Force's local air base.[991] The question this settlement raises is whether adjudication that is even more comprehensive is in Las Vegas's future.

In western Texas, a similar need for municipal water has regional implications for the Rio Grande River. A brief overview of that river system identifies the stresses that have fueled adjudications in at least two basin states and continue to provide challenges for water policy planning.

The Rio Grande River originates in Colorado, winds through central New Mexico, crosses into Texas, and forms the border between Texas and the Republic of Mexico. Throughout this century, the Southwest has struggled over the control of the Rio Grande River. In 1906, the United States and Mexico settled disputes over allocation of upper Rio Grande water with the Convention of 1906. In this international treaty, the United States guaranteed delivery of 60,000 acre-feet per year to Mexico at the border with El Paso, Texas, in order to ensure the needs of Ciudad Juarez in Mexico in the face of rapid expan-

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986. *Id.* The 1922 Colorado River Compact allocates an overstated estimate of 15 million acre-feet between states in the Upper Basin (Wyoming, Colorado, New Mexico, Utah, Arizona) and the Lower Basin (Arizona, Nevada, California), with the dividing line at Lee's Ferry in Arizona. The Lower Basin receives 7.5 million acre-feet, of which Nevada is entitled to 300,000 or four percent. 43 U.S.C. § 617(c), (l) (2000).

987. Ramsey L. Kropf, *Basin-Wide Adjudications in the West: What Works, What Doesn't*, (Natural Resources Law Conference, Boulder, Colo.), June 8 – 11, 1999, at pt. F.

988. *Id.*

989. *Id.*

990. *Id.*

991. *Id.*

sion of upstream irrigation.[992] Later, in 1939, Texas, Colorado, and New Mexico negotiated the Rio Grande Compact, which sets forth a sliding scale of deliveries among the three states based on irrigation needs.[993]

Four major federal projects control an estimated 2.5 million acre-feet per year of water in the Rio Grande: the Closed Basin Project in Colorado, the San Juan-Chama Project in Colorado and New Mexico, the Middle Rio Grande Project in New Mexico, and the Rio Grande Project in New Mexico and Texas.[994] The Elephant Butte Reservoir is the largest reservoir on the river from which nearly 200,000 acre-feet evaporates annually.[995]

All three Rio Grande Basin states, Colorado, New Mexico, and Texas, experienced rapid growth in the 1980s and 1990s. Just south of the New Mexican border, wedged into the far western corner of the Texas, is the burgeoning city of El Paso. The population of El Paso County is experiencing a 2.7% annual growth rate each year.[996] For its metropolitan water, El Paso has historically relied on groundwater supplies from the Hueco Bolson in southern New Mexico, which at the current rate of use will be depleted by 2030.[997] Accordingly, El Paso must find additional available surface water supply as part of their strategy to adequately deal with the continuing growth of the city.

As El Paso searches for more surface water, the status of the adjudications in both New Mexico and Texas fail to provide any reassurance for the thirsty city. First, El Paso is concerned with the lack of progress in New Mexico's adjudications. Because New Mexico has not adjudicated the river segment within the Rio Grande Project, "there is almost no priority administration of water use or basis for evaluating the priority of a particular water right."[998] Citing New Mexico's failure to adjudicate Rio Grande waters and the lack of adjudicated rights, El Paso asserts that: (1) water market development is precluded; (2) El Paso has less ability to make a long-term financial plans; and (3) the region's ability to draft a drought management plan is hampered.[999] The Texas state engineer's office perceives New Mexico's attempts at adjudication as "abysmal."[1000]

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992. Convention Between the United States and Mexico Providing for the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes, 34 Stat. 2954 (1906).

993. Rio Grande Compact, ch. 155, 53 Stat. 785 (1939).

994. Lee Wilson, *Overview of Rio Grande System*, tab 6, p. 1 (15th Annual Water Law Conference Feb. 20-21, 1997).

995. *Id.*

996. Risher S. Gilbert, *Transition from Agricultural to Municipal and Industrial Use In an Interstate Context*, tab 8, p. 2 (15th Annual Water Law Conference Feb. 20-21, 1997).

997. *Id.*

998. *Id.* at 6.

999. *Id.*

1000. *Id.* at 8.

Though Texas has maintained that its surface water adjudications were complete in 1990, El Paso's needs also have forced Texas back into the adjudication process. In 1995, at the request of the El Paso County Water Improvement District, the Texas Natural Resource Conservation Commission undertook initial steps to adjudicate the Rio Grande from the New Mexico-Texas border south to Fort Quitman, below El Paso.[1001] Complicated jurisdictional issues left the adjudication of this segment of the Rio Grande incomplete, making it the last segment still needing adjudication in Texas.[1002]

The federal government is also a large player in the Texas water market. The Bureau of Reclamation, which operates Elephant Butte Dam, expects to play a large role in any adjudication of the Rio Grande. The Bureau's position is that neither the New Mexico state courts nor Texas's administrative judges have jurisdiction to adjudicate the Rio Grande under the McCarran Amendment, because neither state would address the entire river system.[1003] Furthermore, the listing of the Silvery Minnow as an endangered species brings additional federal pressure on the Bureau and the river because the critical habitat of the minnow is within the Rio Grande system. Under the Endangered Species Act, the Bureau of Reclamation operation of the dam and diversions in the lower river will be constrained if such action would harm the Silvery Minnow in its critical habitat.[1004] Reclamation is even required to augment flow in the Rio Grande with stored water in order to preserve the Silvery Minnow. Finally, because the Rio Grande passes through several New Mexico Indian Pueblos, both the United States and those Native American peoples have asserted *Winters* and aboriginal water rights, in both state and federal courts.[1005]

The problems faced by Las Vegas and El Paso demonstrates that the historic factors that originally led to comprehensive water adjudications — population and economic growth, assertions of tribal sovereignty, reserved water right claims, interstate competition, federal-state conflicts, international obligations, diminishing groundwater supplies, and environmental pressures — all remain major cross-currents in western water policy. These two cities are not alone in confronting these challenges, as most western cities continue to grow at high rates and their governments seek additional, certain water supplies. The reality is that the West is a very urban region of the country and future growth will continue to be urban.

1001. Gilbert, *supra* note 996, at 8.
1002. *Id.* at 8-9.
1003. *Id.* at 9.
1004. Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1538 (2000); Christopher B. Rich, *A Federal Perspective on Rio Grande Issues,* tab 7, p. 7-8 (15th Annual Water Law Conference Feb. 20-21, 1997).
1005. *See* Wilson, *supra* note 994, at 5.

Moreover, the call for improved water management is even more profound now than when comprehensive adjudications commenced in the 1970s. The question is, given what we know about the history and problems of these cases, are adjudications a useful contemporary tool for addressing these severe water problems?

2. Contemporary Justifications for General Stream Adjudications

Originally, comprehensive adjudications designed simple accounting exercises to aid government in the *allocation* of water. The government measured existing uses and reserved rights and then compared those totals with the available water supply. If surplus water appeared available after this tally, the state could allow new appropriations. If water rights exceeded supply, then the river was over-appropriated. The government would then reject new appropriation requests and in times of shortage base the administration of water on the seniority of rights.

The rationale for adjudications today has shifted. Water users and managers all assume that most western waterways are over-appropriated; they do not need an adjudication to come to that conclusion. Even without reaching final decrees in watersheds, the submitted adjudication claims, department field work, remote sensing geographic information systems, and hydrologic models all have contributed to an improved understanding of water supply, existing water uses and, hence, better water management. Many Indian tribes and federal agencies have ended protracted litigation designed to establish the theoretical reach of their reserved water right claims. The tribes in particular are now more interested in securing a reasonable amount of water and an adequate source of funds to use that water for a range of purposes, including domestic uses, agriculture, fisheries, industrial development, protection of cultural values, or off-reservation marketing.[1006] Even a tabulation of priorities, theoretically necessary before senior rights holders can place a call on the river in times of drought, has proved less essential as water users have developed innovative, often *ad hoc* arrangements, to secure the level of drought protection they desire.

Contemporary adjudications could be helpful in aiding the *reallocation* of existing water supplies.[1007] A water market, where most of the reallocation will occur, is developing in the West and promises to: (1) move water to places in need; (2) price water more closely to its actual

1006. COLBY ET AL., *supra* note 767, at 31.

1007. "Reallocation" has many meanings in western water policy including the often-feared notion that government agencies or adjudication courts will take without compensation existing water rights and apply them to different uses. The use of "reallocation" in this article is to refer to voluntary buy-sell transfers where exchange is for fair consideration.

cost; and (3) promote conservation. To be viable, markets require many conditions, including accurate information and unconstrained buyers and sellers. However, one important prerequisite is *marketability* of the commodity; that is, sellers being able to deliver title to buyers. If existing water rights remain clouded by a "hodge-podge" of prior decrees, certificates, filings, and potential senior and reserved rights, and the allowable uses for the water remain undetermined, then all these rights will be devalued in any emerging water market. As a result, water marketing will be a less valuable tool in reallocating water to match the needs of western cities.

The title-certainty function of water adjudications does not necessarily mean that western adjudications should continue in their present form. If title-certainty is a major goal of adjudications, adjudications should strive to quantify the water rights that users are most likely to transfer, including large agricultural rights near cities and Indian reserved water rights.[1008] If the McCarran Amendment's comprehensiveness requirement was not an issue, concentrating on these rights only could considerably downsize the scope and time of adjudications.

One aspect of the title-certainty function is especially problematic — to what extent should adjudications scrutinize the beneficial use of water? Adjudications provide an opportunity for the technical agency, adversarial parties, and court to correct water right records in light of actual use. Like land deeds, it is desirable to have accurate boundaries for the property. One view is that the adjudications should carefully scrutinize beneficial use. After all, only an independent court is likely to have the fortitude to take the politically unpopular step of reducing inflated water right claims down to reasonable levels. State engineers and water resource departments have largely declined to perform this function. If adjudication courts can do this task now, it will aid the marketability of these rights because the amount of water used subject to decreed rights will have the judicial seal of approval.

The opposing view is that careful scrutiny of beneficial use is an over-kill, akin to inspecting all residential lots for possible encroachments on neighbors. Such scrutiny will bog down the adjudication courts in endless litigation and significantly increase the cost of litigation, especially to parties that can least afford it. Instead, the parties would be better off waiting for the court to identify specific rights that might be transferred to other areas or purposes. When actual contro-

1008. The off-reservation marketability of Indian reserved water rights is an unsettled question. Located along the upper portion of the Missouri River, the Sioux and Assinobine Tribes of the Fort Peck Reservation have the opportunity to market their reserved rights in cooperation with Montana. In Arizona, the state government has opposed such off-reservation marketing although Indian water right settlements near the Phoenix area have included complex exchanges and leases that are the functional equivalent of off-reservation marketing. In contrast, the Yakama Nation in Washington continues to hold to a policy of no off-reservation transfer of any water right.

versies, usually called transfer or change of use proceedings, are before administrative agencies or courts, parties are usually motivated to focus their scrutiny on real rather than hypothetical data and transfer impacts.

This article does not resolve the debate about how rigorously adjudication courts should scrutinize beneficial use, other than to recommend the obvious, minimum measure: adjudication courts should deflate highly exaggerated claims to water that are unsupported by any reasonable interpretation of the data. It would be more productive for courts to settle claims based on the individual historic, cultural, economic, and water needs of each state.

However, if security of title, albeit dressed up in the contemporary "reallocation-water marketing" label, remains an important purpose for water adjudications, then the quantification of federal, predominately Indian, reserved water rights, is a justification for continuing adjudication of these cases. Here again, the rationale has shifted. The original proponents of these adjudications sought the quantification of reserved rights as one of the important *outcomes* of these cases. At the end of the day, the tribes would have established paper entitlements to large amounts of undeveloped water. However, the judicial outcomes do not fully address the development of paper rights, or how the tribes could actually use their water.

Recent experience has demonstrated that the quantification of federal reserved rights will not be an outcome or end result of these cases. Rather, the time-consuming, expensive, and often chaotic process of the adjudications has dramatically increased the costs of litigation. Accordingly, the parties are tending to favor settlement of these federal rights. The quantification of most federal and tribal rights will not occur as a result of all the parties successfully clearing every hurdle along the track to the final decree. Rather, quantification of most to the rights currently under the pressure of pending adjudications will occur through settlements that shorten the litigation and provide mutual benefits for the settling parties. For the tribes, settlements often include money that enables them to develop their reserved rights. For non-Indian parties, settlements finally define the extent of tribal uses, provide measures to mitigate the impact of senior rights, and occasionally create opportunities for non-Indians to lease or acquire Indian water. In short, final decrees of federal and tribal rights are likely to be process induced rather than outcome produced.

Many writings in the last decade discussed the merits and status of Indian water right settlements. Other than to mention some references on the topic[1009] and to list the major settlements, this article em-

1009. *See generally* CHECCHIO & COLBY, *supra* note 961; COLBY ET AL., *supra* note 961; Charles DuMars & Helen Ingram, *Congressional Quantification of Indian Reserved Water Rights: A Definitive Solution or a Mirage?*, 20 NAT. RESOURCES J. 17 (1980); JON C. HARE,

phasize only a few points. First, settlements give the parties almost unlimited ability to fashion an agreement that meets a multitude of the parties' needs. The Montana-Northern Cheyenne Tribe Compact, for instance, provided for the reconstruction of an unsafe dam.[1010] Negotiations in Arizona's Little Colorado River adjudication have factored in irrigation projects, a pipeline for domestic and industrial uses, rectification of coal tax cases, groundwater management plans, the dedication of existing reservoirs to recreational uses, and water for cultural and spiritual values.[1011] Indeed, negotiators must balance the exciting possibilities of such settlements with the practical need to finalize workable agreements within a reasonable time.

Second, even as negotiations are underway toward settlement, the pressure of adjudication must remain constant so that the parties make reasonable progress and can promptly resume litigation if negotiations fail. Since 1979, Montana has postponed the filing of reserved water right claims by individual Indian tribes so long as they remain in negotiations with the state's agent, the Reserved Water Rights Compact Commission.[1012] Some of the federal and tribal parties seem to maintain just enough interest in negotiations to avoid having their rights referred to the water court for adjudication. While that state has reached final settlement with the Northern Cheyenne Tribe, it took almost twenty years to negotiate the Northern-Cheyenne Compact.[1013] To date, negotiations in northeastern Arizona have taken twelve years and may take many more before final approval and implementation.[1014] Prompt adjudication of federal and tribal rights must remain the credible, next step to failed or stalled negotiations.

Third, before negotiating Indian or federal agency water right settlements, thereby expending considerable time and money, negotiators and the court must be reasonably sure that the parties will implement the final agreement. This is exceedingly difficult for state, federal, and tribal government, all of whom have a multitude of persons or agencies to coordinate and a leadership that is often changing. Also, negotiators and the court need to realistically ponder whether the parties can clear all the hurdles in the settlement process. These hurdles include an agreement among the parties, Department of the

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INDIAN WATER RIGHTS: AN ANALYSIS OF CURRENT AND PENDING INDIAN WATER RIGHTS SETTLEMENTS (1996); PETER W. SLY, RESERVED WATER RIGHTS SETTLEMENT MANUAL (1988); John E. Thorson, *Resolving Conflicts through Intergovernmental Agreements: The Pros and Cons of Negotiated Settlements, in* INDIAN WATER 1985 25 (Christine L. Miklas & Steven J. Shupe eds., 1986).

1010. HARE, *supra* note 1009, at ch. 7.

1011. *See* COLBY ET AL., *supra* note 767, at 132-133, 137.

1012. *See* HARE, *supra* note 1009, at ch. 7.

1013. Barbara Cosens, *Northern Cheyenne Compact, in* NEGOTIATING TRIBAL WATER RIGHTS: FULFILLING PROMISES IN THE ARID WEST 124, 124 (2005).

1014. COLBY ET AL., *supra* note 767, at 133-34.

Interior approval, United States Justice Department approval, clearance by the Office of Management and Budget (OMB), congressional approval and funding, state legislative approval and funding, and final approval by the adjudication court.[1015]

The unfortunate story of Animas-La Plata illustrates this problem. The Animas-La Plata project, part of the 1988 settlement of water rights for the Ute Mountain Ute and Southern Ute Mountain Indians of Colorado, has doggedly survived since the 1930s as a possible project.[1016] A closer look at the project nicknamed the "A-LP" provides some insight into both the future of general stream adjudications and major settlement efforts.

Animas-La Plata originated far earlier than the 1988 settlement of Indian rights. First authorized by Congress in 1968, A-LP's origins "go back at least to the 1930s, when early boosters envisioned a huge dam close to the headwaters of the Animas River, high in the San Juan Mountains."[1017] The proposals sought to transfer over 250,000 acre-feet of water.[1018] Scaled back, re-engineered and "wrapped in its Indian blanket," the A-LP concept survived, largely because it anticipated settling Indian reserved rights and provided a significant amount of water to the traditional agricultural community.[1019] Importantly, the A-LP settlement was also justified because it avoided years in Colorado's adjudication court.[1020] Proponents claimed the 1988 settlement would avoid fifteen to twenty years of litigation, which would arise due to the claims of the Ute Mountain Utes and the Southern Utes.[1021]

"The Ute Mountain Ute and Southern Ute reservations, created in 1868, include a small portion of the aboriginal homelands of the Ute, which encompassed much of Colorado, northern New Mexico, and eastern Utah."[1022] In 1984, after seven years of litigating tribal *Winters* claims, the Ute Tribes, the United States, non-Indian water users, and the states of Colorado and New Mexico began negotiations.[1023] These negotiations produced the Colorado Ute Indian Water Rights Settlement Act of 1988, which provided for the allocation and administra-

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1015. *See* CHECCHIO ET. AL., *supra* note 1009, at 30, 34 fig.6.
1016. Ed Marston, *Cease-Fire called on the Animas-La Plata Front,* HIGH COUNTRY NEWS (Paonia, CO), Nov. 11, 1996, at 1, 10.
1017. *Id.* at 10.
1018. *Id.*
1019. *Id.*
1020. *See* Steve Hinchman, *Animas-La Plata: The Last Big Dam in the West,* HIGH COUNTRY NEWS (Paonia, CO), Mar. 22, 1993, at 10.
1021. *Id.*
1022. *See* CHECCHIO & COLBY, *supra* note 961, at 54.
1023. *Id.*

tion of tribal water rights.[1024] In addition, the act authorized $49.5 million in "Tribal Development Funds" for the tribes.[1025]

New water, seemingly pulled out of Colorado's thin air, resolved the Indian claims and supplied water to the non-Indian irrigators and the growing City of Durango.[1026] Designed in phases, Phase I of the A-LP project planned to deliver 65,700 acre-feet of water to irrigators, while only 2,600 acre-feet of Phase I water would reach Ute farmers.[1027] Phase II would provide the Ute tribes with their full entitlement of water, but funding was to come from local water user fees instead of federal dollars.[1028] Still, building the Animas-La Plata Project, at an ever-escalating cost, was the key component to satisfying demands from all comers.[1029]

An excruciating five years followed, in which A-LP was downsized and reconfigured.[1030] Groups not involved in the original negotiations, environmentalists and the Navajo Nation, proved to be formidable opponents as their previously left out or discounted interests had to be taken into account by project developers.[1031] Sierra Club Legal Defense Fund[1032] lawsuits, protecting the Colorado Squawfish, a federally listed endangered species, stalled A-LP.[1033] In a separate assault, the Navajo Nation also claims *Winters* rights in current A-LP negotiations.[1034] Additionally, no states adjacent to the large reservation have adjudicated their *Winters* rights. A Phase I deadline of January 1, 2000 allowed the tribes to resume their water rights litigation.[1035] The deadline also helped produce congressional amendments that finally resolved A-LP in Colorado.

What then does the Colorado Ute Settlement Act mean for general stream adjudications and settlement initiatives? If the true value of a general stream adjudication is to create the impetus for water users to reach settlement about allocation and administration, what happens

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1024. Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973.

1025. *Id.* § 7(a), 102 Stat. 2977.

1026. Scott McElroy, *Colorado Ute Water Rights Settlement, in* NEGOTIATING TRIBAL WATER RIGHTS: FULFILLING PROMISES IN THE ARID WEST 138, 140 (2005).

1027. Hinchman, *supra* note 1020, at 14.

1028. A quantity of 26,500 acre-feet of municipal and industrial supplies was slated to go to the Southern Ute Tribe and 32,400 acre-feet to the Ute Mountain Ute in Phase II. *Id.*

1029. A-LP costs estimate have run anywhere from $640 million to $710 million, and up to $1 billion. *See* Hinchman, *supra* note 1020, at 11-12; Marston, *supra* note 1016, at 1.

1030. McElroy, *supra* note 1026, at 142.

1031. Marston, *supra* note 1016, at 12.

1032. The Sierra Club Legal Defense Fund in now EarthJustice.

1033. Hinchman, *supra* note 1020, at 11.

1034. *See* Marston, *supra* note 1016, at 12.

1035. *See* Hinchman, *supra* note 1020, at 10.

when negotiations stall or even fail? If the parties had litigated rather than settled, would they be better off, or would the case still be tangled up in litigation? Is simultaneous litigation and negotiation just a wasteful double expenditure of time and money?

F. Conclusion

We have observed that western adjudications have largely failed to achieve the purposes originally specified for them three decades ago. They have fallen short of the goals principally because they remain incomplete. This disappointing assessment is a result of unrealistic expectations of the original adjudication proponents, the great size of these proceedings, and many other factors. Due to the daunting complexity of these cases and the need to safeguard judicial independence, scholars have been reluctant to evaluate these cases from a public policy perspective. Anecdotal evidence abounds that many water adjudications have been both inefficient and ineffectual.

The historic trends that provided the original impetus for states to adjudicate their water continue to exist today. The 1990s have brought enormous population growth to western cities, which in turn pressures states and water suppliers to adjudicate water rights. Rivers often run through many political boundaries — state lines, international borders, and Indian reservations — with residents of different states and tribes competing for water. Western water projects, largely run by federal entities, play by federal rules and policies, often in opposition to state desires. A panoply of federal environmental laws, passed at the same time western adjudications commenced, now complicate water adjudications.[1036] Indian Tribes seeking new water development opportunities continue to assert their claims for a share in the precious desert resource, destabilizing traditional but junior allocations. Though not as severe as the energy crisis of the 1970s, energy resources are short and a single terrorist event could aggravate the situation. More loudly today than ever, all of these tensions argue for better water management.

Thus, this article concludes that water adjudications should continue in western states, although the adjudication of an entire state or large river system may be unnecessary or impossible. We reach this conclusion by simply adding up the basic realities of the contemporary West: the West remains arid; western population continues to grow; water markets could enable the West to promote this growth; water markets are somewhat stagnant because reserved rights are unquantified and there is no confirmation of titles to state-law water rights; and

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1036. *See, e.g.*, Endangered Species Act of 1973, 16 U.S.C. § 1531 (2000); Clean Water Act, 33 U.S.C. §§ 1251-1387 (2000); Safe Drinking Water Act, 42 U.S.C. § 300f to 300j-26 (2000).

water adjudications afford the means to confirm water right titles and to encourage settlements of federal and tribal rights.

Water adjudications can be important water management tools although they will never again be the central element of a state's water policy. Carefully fashioned adjudications can help water users and managers adapt to the intensive water management and reallocation period the West is now embarking on. Adjudications can also be the lever to successful settlement of reserved right claims, thereby allowing many tribes to chart their own future by securing some of the promise of the *Winters* doctrine and ending many of the longstanding resource controversies between Indians and non-Indians in western watersheds. Adjudication processes, however, need improvement and the remainder of this article address that concern.

V. ALTERNATIVES TO PRESENT ADJUDICATIONS

While adjudications are inherently clumsy structures, westerners should probably get used to living with them. This does not mean that they have to be slaves to outdated purposes or structures. The length, cost, and, in some places, the animosity and conflict created by general stream adjudications, has prompted water users, attorneys, and legislators to call for changes in these proceedings.

After three decades of rigorous general stream adjudication activity, participants and scholars have learned a lot about what does, and does not work, in these proceedings. Participants should benefit from this knowledge. The possibility of changes in the structure and processes of water adjudications is not a new topic, although there have been recent calls for reforms or complete over-hauls of some of the cases. Many have tried to quantify western water rights, particularly since the significant decision of *Arizona v. California*, which established the possible scope of senior federal and tribal water rights.

The following discussion begins by reviewing some of the alternatives to general stream adjudications. Based on the assumptions that many adjudications will continue in the West, and some new adjudications may actually commence, this section addresses how existing cases might improve management and how any new cases could improve their design. Finally, there is a summary of observations of judicial officers involved in adjudications. This discussion is by no means an exhaustive list of possibilities, but rather a starting point for developing tailored improvements to ultimately enhance the process for all parties involved.

A. Structural Alternatives

Since the passage of the McCarran Amendment in 1952, a host of additional proposed federal legislation has addressed the challenge of outstanding, unquantified federal agency and Indian reserved water

rights. Most of these original efforts arose due to concerns about the *Pelton Dam* decision,[1037] and the introduction of bills into Congress that required federal agencies to acquire their water rights under state laws and procedures. Congress has not passed legislation altering or amending the McCarran Amendment since its adoption. Yet this has not halted the array of proposals offered to enhance or clarify the role of the federal government in these proceedings. In recent years, Congress has primarily played a role in the approval of state settlements with Indian tribes.[1038] Possible federal responses include strict adherence to state law by federal and tribal entities, an administrative inventory of federal and Indian reserved water rights, legislative quantification of Indian water rights, amendments to the McCarran Amendment, and federal court adjudication of Indian water rights.

1. Adherence to State Law

The first of these proposals was the Western Water Rights Settlement Act, introduced by Senator Barrett of Wyoming in 1956.[1039] Early versions or alternatives to this bill would have required explicit congressional declarations that the government was reserving water for federal purposes, compensation for state-created water rights that were affected by federal rights, and assurances that reserved rights would not affect water rights established before withdrawal of reservation land from the public domain.[1040] These settlement act proposals, however, either exempted Indian water rights or treated them ambiguously.

After the United States Supreme Court decided *Arizona v. California* in 1963,[1041] western-state residents began to understand that Indian reserved water rights, not agency rights, presented the greater challenge to their state-created water rights. Many western state legislatures amended their adjudication statutes to adapt to the realities of Indian reserved water rights. Indeed, modern general stream adjudications are the result of these pressures.

1037. Fed. Power Comm'n v. Oregon (*Pelton Dam*), 349 U.S. 435 (1955).

1038. *See, e.g.*, Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, 104 Stat. 4480; Ak-Chin Indian Community Water Rights Act of 1983, Pub. L. No. 98-530, 98 Stat. 2698 (1984); Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, 96 Stat. 1274.

1039. S. 863, 84th Cong. (1956).

1040. *Id.*

1041. Arizona v. California, 373 U.S. 546, 598-600 (1963) (holding that prior to adopting the Boulder Canyon Project Act the United States reserved water rights for Indian reservations and other stated federal establishments).

2. Administrative Inventory

After *Arizona v. California*, the federal government proposed new measures for addressing federal agency and Indian reserved water rights. Most of these resulted from work for, or recommendations of, the Public Land Law Review Commission, which filed its final report, the National Water Commission, in 1970, and completed its work in 1973.[1042] The Public Land Law Review Commission proposed a national water rights procedure that would allow federal land agencies to "ascertain and give notice of their projected water requirements for the next 40 years for reserved areas . . . ."[1043] At the request of state water rights administrators or holders of conflicting rights, federal courts, except in instances where the adjudication of rights had already occurred, could review these administrative determinations.[1044] The creation of future reserved rights could not occur without the express reservation of unappropriated water by Congress.[1045] Congress would also provide compensation if reserved water rights interfered with state water rights that had vested under state law prior to the 1963 *Arizona v. California* decision.[1046]

The National Water Commission differed somewhat with this approach, finding that quantification of non-Indian reserved rights would be too expensive and would encounter resistance by federal officials likely to make inflated claims. With regard to federal agency rights, the commission recommended that the federal government act in conformity with state law in establishing, recording, and quantifying both existing and future water uses. Priority dates for existing uses would be the dates of the reservation or withdrawal of the land from the public domain. For future uses, the priority dates would be the dates water was actually put to use, not the dates of reservation or withdrawal.

The National Water Commission also recognized that an inventory and quantification of Indian reserved rights should occur and would probably require judicial proceedings.[1047] Whether adjudicated or not, the commission recommended that existing water uses on Indian reservations be quantified and recorded in state water right records to provide notice to other users.[1048] In addition, the Commission recommended that the federal or tribal authorities file notices with the re-

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1042. National Water Commission Act, Pub. L. No. 90-515, 82 Stat. 868 (1968).

1043. U.S. PUB. LAND LAW REVIEW COMM'N, *supra* note 30, at 147. Interestingly, Senator McCarran proposed such an inventory as part of his bill in 1951. *See* S. Rep. No. 82-755 at 1-2 (1951). While the inventory proposal passed out of committee, it did not pass the Senate.

1044. *See* U.S. PUB. LAND LAW REVIEW COMM'N, *supra* note 30, at 147-48.

1045. *Id.* at 149.

1046. *Id.*

1047. NAT'L WATER COMM'N, *supra* note 31, at 477-78.

1048. *Id.* at 478.

spective states that outlined the elements of unquantified Indian water rights.[1049] Recognizing that eventual use of Indian rights might dislodge existing state-based uses, the commission recommended that on fully-appropriated streams the federal government should offer to lease all or part of the Indian water right for up to fifty years.[1050] If such an approach could not mitigate the interference caused by the exercise of Indian water rights, the United States would be obliged to compensate state water right holders or provide them alternative supplies of water for impaired rights initiated prior to 1963.[1051]

In 1975, the Ford Administration's Department of Justice proposed a bill, known as the "Kiechel Bill," entitled "A Proposed Bill to Provide for the Inventorying and Quantification of the Reserved, Appropriative and Other Water Rights to the Use of Water by the United States." However, the administration never introduced the bill in Congress. The bill would have required the head of each federal agency to prepare, within five years of enactment, a detailed state-by-state inventory of all reserved, appropriative, or other water rights asserted by that agency.[1052] The Secretary of the of the Interior would promulgate rules for developing this inventory. The agency would then publish the resulting inventory in the *Federal Register* and submit it to the respective states for comment and approval. The inventoried rights and the administrative determinations in the inventory would be subject to judicial review in federal district court. Western states strenuously opposed the bill.

The Carter Administration initiated a similar procedure as a result of the President's water policy statement of June 6, 1978.[1053] The presidential directive required prompt administrative inventory of all non-Indian reserved water rights, as well as an effort to quantify these rights using a reasonable standard that reflected true federal needs "rather than theoretical or hypothetical needs based on full legal extension of all possible rights."[1054] The inventory process would proceed in high-priority areas. The policy was vague in regard to Indian water rights,

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1049. *Id.*
1050. *Id.* at 481.
1051. *Id.* at 482-83.
1052. A similar proposal in 1974 recommended that a neutral federal agency independent of the Department of the Interior and Department of Justice should inventory and quantify federally-owned water rights. This agency or commission would include some Indian representatives, water scholars, and resource planners. Susan Millington Campbell, Note, *A Proposal for the Quantification of Reserved Indian Water Rights*, 74 COLUM. L. REV. 1299, 1320 (1974); *see also* Walter Kiechel, Jr. & Kenneth J. Burke, *Federal-State Relations in Water Resources Adjudication and Administration: Integration of Reserved Rights With Appropriative Rights*, 18 ROCKY MTN. MIN. L. INST. 531, 538 (1973) (arguing that quantification of reserved rights by administrative process is a better approach).
1053. President's Water Policy Statement on Federal and Indian Reserved Water Rights (June 6, 1978), *reprinted in* GAO REPORT, *supra* note 33, at app.II.
1054. *Id.*

requiring only that the Bureau of Indian Affairs "submit a plan for the review of Indian water right claims to be conducted within the next 10 years."[1055]

3. Legislative Quantification

Over the years, several proposals came about for a congressional inventory and quantification of Indian water rights. In 1977, the Federal Reserved Water Rights Task Force, appointed by President Carter, recommended a comprehensive legislative solution. The bill would have set forth procedures and criteria for quantifying reserved water rights, as well as providing compensation to holders of state rights injured by the exercise of federal reserved rights.

In the same year, a legislative proposal was introduced in the House of Representatives to confirm existing Indian reserved water rights with a priority date based on the reservation date.[1056] The proposed bill set the standard of quantification at the highest annual water use during the five years preceding January 1, 1977.[1057] The bill did not, however, address the quantification of undeveloped Indian water rights.

4. Amendments to McCarran

Several proposals to amend the McCarran Amendment have occurred over the years. Michael D. ("Sandy") White, a former Colorado special master and attorney for the State of Wyoming in the Big Horn River adjudication, recommended a change to the McCarran Amendment to remove the requirement of a "suit" as a precondition for a waiver of federal sovereign immunity.[1058] White noted that, at the time,

> [s]ince very few of the Western states still use general adjudications in water right determinations as a matter of course, having adopted a more streamlined administrative permit system in their place, the most appropriate resolution procedure in those states would be the same administrative approach used for all other water rights.[1059]

White also argued for narrowing the general or comprehensive requirements, believing that such requirements increase the complexity of the adjudication.[1060] He proposed to amend the McCarran Amendment to allow a focused determination of federal water rights, as "the

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1055. *Id.*
1056. H.R. 9951, 95th Cong. (1977).
1057. *Id.*
1058. Michael D. White, *McCarran Amendment Adjudications–Problems, Solutions, Alternatives,* 22 LAND & WATER L. REV. 619, 628 (1987).
1059. *Id.*
1060. *Id.*

result would be a very clean and straight-forward determination of federal water rights."[1061] He also recommended that the United States be liable for litigation costs.[1062]

More recently, Representative Mike Crapo (R-ID) introduced the State Water Sovereignty Protection Act in Congress on October 30, 1995.[1063] Though referred to the House Committee on Resources' Subcommittee on National Parks, Forests and Lands, as well as the House Committee on the Judiciary, the bill never made it through the 104th Congress to become legislation. Similar to the Western Water Rights Settlement Act of the 1950s, this bill provided that when the United States seeks to appropriate state waters, it will be subject to state law and fees.[1064] The bill also expanded on the waiver of federal immunity found in the McCarran Amendment.[1065]

Section 2 of the bill subjected the United States to state law to the same extent as any private person whenever it seeks to acquire water rights.[1066] The bill also required the federal government to join in a proceeding and waive its sovereign immunity in both judicial *and* administrative proceedings.[1067] Additionally, the bill also subjected the United States to private suits in some water-related cases. Section 3(b) required the United States to waive its immunity to suit where non-governmental entities bring claims relating to the management and control of state waters.[1068] Section 4 made the United States subject to the imposition of costs and fees to the same extent as a private party.[1069]

The bill also addressed federal reserved rights. The bill provided that, "[t]he withdrawal, designation or other reservation of lands by the United States for any purpose (whether by statute or by administrative action) does not give rise by implication to a Federal reserved right to water relating to such purpose."[1070] It is uncertain whether Section 2(c) would have eliminated only non-Indian reserved rights or *Winters* rights as well. Earlier versions of the bill, which drafters did not incorporated into the final draft version, expressly mentioned tribal water rights. The bill's sponsor explained that the only impact intended by the bill was on non-Indian federal reserved rights, such as those connected to wilderness preservation areas. Other authorities, however,

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1061. *Id.*
1062. *Id.* at 629.
1063. State Water Sovereignty Protection Act, H.R. 2555, 104th Cong. (1995), *available at* http://thomas.loc.gov/cgi-bin/query/z?c104:H.R.2555.IH:.
1064. *Id.* §§ 2(a), 4.
1065. *Id.* § 2(b)(2).
1066. *Id.* § 2(a).
1067. *Id.* § 2(b).
1068. *Id.* § 3(b).
1069. *Id.* § 4.
1070. *Id.* § 2(c).

expressed concern that the construction of Section 2(c) would abrogate tribal *Winters*-type rights as well.

5. Federal Court Adjudication of Indian Water Rights

Other commentators agree with Sandy White that a focused adjudication of Indian rights is desirable, but they argue that this litigation should take place in federal court. Attorneys Scott McElroy and Jeff Davis, who frequently represent tribes, note that there has only been a complete adjudication of two tribes' Indian water rights in state court in the twenty-year period since the Supreme Court recognized state court jurisdiction over these rights.[1071] They agree that such quantification is necessary because "[w]ithout such quantification, tribes face the risk that non-Indian reliance on the use of water to which the tribes are rightfully entitled will ultimately defeat tribal uses."[1072] They believe that the adjudication of these tribal rights can proceed more expeditiously and fairly in federal court.[1073]

The federal district court partially adjudicated the reserved rights of the Klamath Tribe in Oregon in the *Adair* litigation.[1074] Before the state initiated its adjudication of the Klamath River, the United States filed, and the Klamath Tribe intervened in, a federal court suit against 600 landowners within the former reservation.[1075] The federal district court then proceeded to acknowledge the federal reserved rights for fishing, hunting and other activities.[1076] The federal court, however, left the quantification of the reserved rights to the state court.[1077]

6. Regional Settlements; Model Agreements

Case-by-case Indian water right settlements are occurring throughout the West with some success. Many states and tribes argue, however, that the federal government is not providing sufficient resources for the negotiations or implementation of resulting settlements. Former Secretary of the Interior Bruce Babbitt suggested that in the light of budget cuts and the attitudes of western politicians and water interests, tribes should join forces to seek regional solutions or settlements of their Indian water rights claims.[1078]

In the last three decades, however, some scholars and government officials have proposed regional watershed settlement of Indian water

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1071. McElroy & Davis, *supra* note 8, at 648.
1072. *Id.* at 600.
1073. *Id.* at 648.
1074. United States v. Adair, 723 F.2d 1394 (9th Cir. 1983).
1075. *Id.* at 1397.
1076. *Id.*
1077. *Id.* at 1399.
1078. Keith Bagwell, *Babbitt to Indians: Unity May Aid Water Fight*, ARIZ. DAILY STAR, Mar. 19, 1997, at 2B.

rights. The Assistant Secretary for Indian Affairs recommended such a strategy in 1978 as part of the National Indian Water Policy Review.[1079] A bill to bring about a regional settlement in Arizona, the Central Arizona Indian Tribal Water Rights Settlement Act of 1977, would have authorized the Secretary of the Interior to acquire by purchase or condemnation non-Indian lands with surface water rights and transfer these lands and water rights to five Arizona Indian tribes in satisfaction of their present and future reserved rights for farming.[1080] The recent Arizona Water Settlements Act of 2004, which addressed the rights of the Gila River Indian Community, New Mexico's rights under the Colorado River Compact, and Arizona's dispute with the Bureau of Reclamation over repayment of the Central Arizona Project, might be considered as such a regional settlement.

One commentator has suggested the creation of an Indian water rights commission composed of members appointed by the President.[1081] The function of this commission would be a forum for coordinated water resource planning, database generation by neutral third parties, and, most importantly, the drafting of model water rights settlement agreements.[1082] This last function would be similar to the work of the American Law Institute in formulating model laws in numerous substantive legal fields. In the area of Indian water rights, the commission would develop guidelines for model agreements, standardized alternative means for computing practicably irrigable acreage, and guidelines for conducting negotiations.[1083] A five percent surcharge on water and power sales from Reclamation projects would fund the commission's activities, and some of the negotiated agreements reached under its authority.[1084]

7. Other Possibilities

Others have proposed simplifying adjudications by reducing the number of necessary parties. The National Water Commission recommended that federal courts have exclusive jurisdiction for the adjudication of Indian water rights.[1085] The commission also suggested legislation that would allow a state to move for permission to represent its non-Indian water users, subject to conflict of interest considerations, under the *parens patriae* doctrine. This doctrine has been used by states

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1079. GAO REPORT, *supra* note 33, at 46-47.

1080. S. 905, 95th Cong. (1977).

1081. Lloyd Burton, *The American Indian Water Rights Dilemma: Historical Perspective and Dispute-Settling Policy Recommendations*, 7 UCLA J. ENVTL. L. & POL'Y 1, 47 (1987).

1082. *Id.* at 48-49.

1083. *Id.* at 50.

1084. *Id.* at 54.

1085. Susan Brienza, *Wet Water vs. Paper Rights: Indian and Non-Indian Negotiated Settlements and Their Effects*, 11 STAN. ENVTL. L.J. 151, 165 (1992).

to justify standing to protect quasi-sovereign interests such as health, comfort, and welfare of the people, interstate water rights, or the general economy of the state.[1086] As applied to water adjudications, the *parens patriae* doctrine finds some support from *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, where the United States Supreme Court recognized Colorado's authority to negotiate an interstate compact modifying water rights of some of its citizens, even where a state has granted water rights before entering into the compact.[1087]

Also, class action procedures tailored for water adjudications could both reduce the number of parties before the court and spread around the financial cost of participating. An amendment of the McCarran Amendment might be necessary, as the courts have sometimes ruled that some types of representative litigation do not qualify as comprehensive adjudication.[1088]

John Leshy, former Solicitor of the United States Department of the Interior, in a discussion draft memorandum of understanding, proposed general guidelines for improved state-federal relations in adjudications.[1089] Leshy's initiative was an attempt to improve working relationships, within applicable legal limits, between the federal agencies, primarily the Forest Service, the Park Service, the Fish and Wildlife Service, and the Bureau of Land Management, as well as with state water rights agencies.[1090] He recommended that in situations where a federal agency asserts unadjudicated reserved rights, the federal agency should notify the state promptly.[1091] In turn, states should notify federal agencies of proceedings involving state water rights, such as changes in use of existing appropriations.[1092] In addition, state and federal agency parties should cooperate to identify and conduct needed research.[1093] Leshy also called for better coordination of federal

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1086. BLACK'S LAW DICTIONARY 1144 (8th ed. 2004).

1087. Hinderlider v. La Plata River & Cherry Creek Ditch Co., 304 U.S. 803, 809 (1938) (stating that "[w]hether the apportionment of the water of an interstate stream be made by compact . . . or by a decree . . . the apportionment is binding upon the citizens of each State and all water claimants, even where the State had granted the water right before it entered into the compact.").

1088. *See, e.g.*, Miller v. Jennings, 243 F.2d 157, 159 (5th Cir. 1957).

1089. John D. Leshy, Discussion Draft, Memorandum of Understanding, Nov. 21, 1994. Leshy notes, "This is, in other words, my own work – a discussion draft the purpose of which is to determine if states have an interest in pursuing discussion further." Letter from John D. Leshy to D. Craig Bell Accompanying Memorandum of Understanding (Nov. 23, 1994) (on file with authors). His memorandum was not designed to change any law or waive any rights and can be terminated by either the state or the federal government with thirty days notice. John D. Leshy, Discussion Draft, Memorandum of Understanding, Nov. 21, 1994.

1090. John D. Leshy, Discussion Draft, Memorandum of Understanding, Nov. 21, 1994.

1091. *Id.*

1092. *Id.*

1093. *Id.*

land management and state water rights administration.[1094] Leshy's memorandum specifically excluded Indian water rights.

B. Strategies for Completing Individual Adjudications

The more one studies the history of water law and adjudications in the West, the more one appreciates that these cases are difficult because they are only the latest incarnation of many unresolved conflicts over western natural resources, the pentimentos of the past. Thus, one would be wise to ponder the admonition given by law professor Dan Tarlock almost a decade ago that the expectation of finality in western stream adjudications, like the distant puddle on the highway, is an illusion.[1095] Recognizing the need for a long-term perspective, this article suggests the following strategies for pending or eminent western general stream adjudications.

In states where adjudications have been particularly difficult, one solution is to discontinue the proceedings. The assigned judge for Arizona's Little Colorado River adjudication once considered dismissing the entire adjudication for "lack of justiciability."[1096]

States wishing to continue these proceedings, however, may seek to simplify their adjudications. Indeed, the states that have been modest in their approaches, such as Nevada, Utah, and California, seem more likely to achieve their objectives. Also, the Yakima River basin adjudication in Washington is an example of how simplifying assumptions, such as allowing water provider entities to represent all of their members, streamlines proceedings. States that provide for a more flexible adjudication of water rights are more likely to make the necessary adjustments and improvements to their procedures, thereby minimizing the likelihood of conflict. In contrast, when states have attempted a major overhaul of their adjudication statutes, the result has often been more complicating litigation.

Below are additional strategies for completing existing adjudications or planning new ones.

1. Flexible Statute

Start with a bare-bones, flexible statute and do not change it. The length and complexity of state adjudication statutes varies considera-

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1094. *Id.*

1095. Tarlock, *supra* note 872 , at 274 ("Buying a water right should not be like buying a penny stock in Salt Lake City or Denver. But, there is an equal need to recognize that water rights systems, in a basin or even sub-basin, are like the federal budget: in the end, the precise numbers are unknowable and the notion of an equilibrium is illusory.").

1096. E-mail from Allen Minker, Judge for Arizona's Little Colorado River adjudication to John E. Thorson, Special Master for Arizona General Stream Adjudication (Aug. 15, 2005) (on file with author).

bly. Arizona, Montana, and Idaho are among the longest and most complex.

Long and complex organic statutes have numerous problems. First, they result in legislative micro-management of the adjudication process. At best, these omnibus statutes appear designed to "help" the court, but more often, they create rigid structures and procedures that inhibit the court's ability to solve the unexpected problems that invariably arise. At worst, these omnibus statutes implicitly suggest that the court does not know how to manage a complex case.

Second, while some simplifying assumptions are necessary for adjudications to be manageable, this often leads to an unfair process against some users. Third, long and complex statutes make it difficult for laypersons to participate. Even the best statutes use terminology, such as "hydrographic survey report," that only a water lawyer, hydrologist, or engineer would understand and love.

New Mexico, North Dakota, and Wyoming all have bare-bone, flexible statutes.[1097] All of these statutes have been in effect, relatively unchanged, for long periods of time. Under these statutes, the courts have significant discretion. For example, North Dakota's statute has five basic sections that have been in place since 1905.[1098] New Mexico's statute also has five basic sections that have been largely unchanged since their initial enactment in 1907.[1099] These sections provide authority for the state engineer to prepare a hydrographic survey and for the attorney general to commence suit.[1100] Most of the other provisions concern venue, service of process, costs, and filing location of final decrees.[1101] Indeed, the New Mexico statute has provided adequate authority and structure for numerous adjudications over ninety years.

Wyoming's statute, enacted in 1977, has only one basic section.[1102] Ironically, Judge Harold Joffe felt compelled to ignore that sole provision by appointing an independent lawyer as special master, rather than the Board of Control, as the statute requires.[1103]

2. Avoid Forum Fights

In many western adjudications, there has been an endless struggle over whether these comprehensive adjudications will be heard in state or federal court. Some tribes and federal attorneys continue to scruti-

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1097. *See* N.M. STAT. ANN. §§ 72-4-13 to -19 (2005); N.D. CENT. CODE §§ 61-03-15 to -20 (2005); WYO. STAT. ANN. §§ 1-37-106, 41-4-301 to -331 (2005).

1098. *See* N.D. CENT. CODE §§ 61-3-15 to -19 (2005).

1099. *See* N.M. STAT. ANN. §§ 72-4-13, -15, -17 to -19 (2005).

1100. *Id.* §§ 72-4-13, -15.

1101. *See Id.* §§ 72-4-16 to -19.

1102. WYO. STAT. ANN. § 1-37-106 (2005).

1103. *Id.* § 1-37-106(a)(i)(A)(I); *In re* General Adjudication of All Rights to Use Water in the Big Horn River System (*Big Horn I*), 753 P.2d 76, 85 (Wyo. 1988).

nize state adjudications for the "fatal flaw" that might provide the grounds for removing the litigation to federal court. Many westerners blindly disbelieve that a federal court will be fair to their interests.

In Arizona, the filing of the basic cases occurred in 1974, but state court jurisdiction was not firmly established until 1985.[1104] In Montana, the state established a system for adjudications in 1973; however, the state courts did not have jurisdiction until 1985.[1105] In Oregon, the federal government and tribes resisted state jurisdiction from 1975 until 1994.[1106]

Only New Mexico has escaped most of this jurisdictional struggle. Starting in the 1950s, the state engineer and the United States agreed that parties could file adjudications in either state or federal court. The flexible, general state statute allowed the state engineer to prepare hydrographic surveys for use in federal court.[1107] This arrangement did not prevent all jurisdictional "tug-o-wars,"[1108] and it certainly has resulted in some inefficiencies and lack of coordination. On the other hand, the arrangement did remove one source of conflict, freeing up energy and resources for other work.

Based on this review of western adjudications, this article concluded that the jurisdiction battles actually do not result in any appreciable gains for any major party. State courts have often issued rulings quite favorable to tribes and federal agencies. Two examples of such rulings include the tribal water rights awarded in Wyoming's Big Horn River adjudication[1109] and the Arizona Supreme Court's 1985 decision clarifying parts of legislation challenged by tribes.[1110] In addition, federal courts have often issued rulings favorable to non-tribal, non-federal water users. For example, the United States Supreme Court's recognition of the binding nature of Nevada's Orr Ditch Decree, which rebuffed the efforts of the Paiute Tribe to reopen the Truckee River litigation.[1111]

3. Specialized Court or Agency

The states have staffed their adjudication in a variety of ways. Montana and Idaho have semi-permanent water courts with many full-time

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1104. *See* United States v. Superior Court of Maricopa County, 697 P.2d 658, 663-66 (Ariz. 1985).

1105. State *ex rel.* Greely v. Confederated Salish & Kootenai Tribes of Flathead Reservation, 712 P.2d 754, 759-60, 68 (Mont. 1985).

1106. *See* United States v. Oregon, 44 F.3d 758, 762-67 (9th Cir. 1994).

1107. N.M STAT. ANN. § 72-4-13, -17 (2005).

1108. *See, e.g.*, State *ex rel.* Reynolds v. Lewis, 545 P.2d 1014 (N.M. 1976).

1109. *In re* General Adjudication of All Rights to Use Water In the Big Horn River System, 753 P.2d 76, 91 (Wyo. 1988).

1110. United States v. Superior Court of Maricopa County, 697 P.2d 658, 669-70 (Ariz. 1985).

1111. United States v. Nevada, 412 US 534, 535-37 (1973).

personnel. While the adjudications in these states will take years to complete, these courts are working progressively toward the completion of their work and have achieved a stability that other "up-and-down" adjudications do not enjoy.

New Mexico and Washington have used full-time or part-time judges *pro tempore* or senior judges. Arizona, Colorado, New Mexico, and Wyoming have used full-time masters or referees who work under the direction of a judge who devotes part of his or her time to water cases. In Kansas, Nebraska, and Oregon, an administrative agency performs a substantial amount of the adjudication work with a judge presiding over the last phases of the process. Indeed, Kansas and Nebraska have essentially completed the adjudication of their state-law water rights. While the absence of federal or tribal claims aided their task, the states success was in large part due to the concerted effort of these professional agencies to accomplish the task.

This article recommends that states create a specialized court or agency, or appoint a full-time master or referee, to undertake large adjudications. Structures with full-time personnel can focus, plan, and generally have the necessary financial resources to do their work. Such entities may, however, tend to perpetuate themselves. Part-time arrangements may be "lean and mean," but the personnel may lack resources and, due to other commitments, the ability to focus.

4. State Water Agency as Party

This article proposes that the state engineer, department of water resources, or similar state administrative agency should be a party to the stream adjudications in that state. The agency should have a clear, factually based role in the adversarial proceeding.

Many states have historically characterized their state engineer or water resources department as a "neutral" party. This notion is an outgrowth of both the scientific management era's belief that science and engineering could provide the "right" answers to almost any problem, and the related progressive conservation movement, premised on a belief that government can implement in a benevolent, neutral way these "right" answers.

This problem was evident in Idaho where the judiciary spent several years in an acrimonious relation with IDWR. However, once the department's role was clarified, it became easier to move the Snake River Basin adjudication forward.

Even the most professional water management agencies are not always right or neutral. These agencies exist in a complex political environment and usually have responsibilities for a range of water issues. Also, many of the most important issues in water adjudications today do not present scientific or technical problems. An agency cannot discover the "right" answer for a mixed legal-economic-technical issue such as practicably irrigable acreage.

Also, the adversarial process does not always work well when "neutrals" are involved as major participants in the case. The rules of civil procedure usually do not contemplate such a role. Additionally, the relationship between the agency and the judge often presents ethical questions that one cannot easily answer.

5. Strategically Determine Areas and Rights to Adjudicate

The myth of comprehensiveness has led some states to adjudicate some areas and some types of rights that, from a water management perspective, do not need adjudication. Legislators and state water resource managers need to weigh the advantages and disadvantages of adjudicating a certain areas and make informed, careful decisions about what and where to adjudicate. Wyoming is an example of a state where adjudications have been limited to basins that truly require adjudications. That is, basins with extensive federal and tribal claims and a history of conflict.[1112]

The legislation establishing an adjudication should exempt small uses,[1113] and holders of these rights should have the option of claiming them if they want a firmer right. For cases underway, a court might consider summary adjudication of these small rights.[1114]

6. Limit Summons

In an attempt to be comprehensive, some states have served summons on every identifiable water user. Arizona, for instance, served every property owner in the state, totaling approximately one million summonses.[1115] Such an approach involves many thousands of water users who are customers or shareholders of other water provider entities in the adjudication, further complicating the proceeding. Involving all of these parties also leads to subsidiary battles between majorities and minorities in irrigation districts and similar organizations.

To avoid this situation, states should serve only the water provider entities and not individual members. The quantity of water adjudicated in the case of water provider entities should be the total collective uses of their customers or members. The actual division of the adjudicated right should be left to the members who, if necessary, may resort to the courts in separate proceedings outside the stream adjudication.

1112. McElroy & Davis, *supra* note 8, at 624-25.

1113. *See, e.g.*, MONT. CODE ANN. § 85-2-212 (2005) (exempting stock and small domestic rights).

1114. *See, e.g., In re* General Adjudication of All Rights to Use Water in Little Colo. River System, Civil No. 6417-033-9005 (Ariz. Sup. Ct. 1994) (mem. decision).

1115. Thomas H. Pacheco, *How Big is Big? The Scope of Water Rights Suits Under the McCarran Amendment*, 15 ECOLOGY L.Q. 627, 637 n. 58 (1988).

For example, Washington only served process on the major water provider entities in the Yakima River basin.[1116] This limitation avoided service of process on the 40,000 plus individual users or members of these entities, whose presence would have vastly complicated the adjudication.[1117]

7. Address Federal and Tribal Claims First

The priority and extent of previously unadjudicated reserved water right claims are the great unknowns in many adjudications. After ascertaining these rights, the federal and tribal parties are in a better position to focus on potentially superior and interfering state law claims. For this reason, it is often advantageous to litigate reserved water right claims first, as did Wyoming in the Big Horn River adjudication. If states do not address federal and tribal claims initially, these parties may feel compelled to object to all other claims in the adjudication to protect their unascertained rights.

8. Provide a Settlement Forum

Most often, Indian water settlements have been the result of alternative dispute resolution. These settlements significantly lessen the court's task. They are successful, in part, because they involve a smaller numbers of parties and claims, and the issues are limited to those that directly concern the parties. Most Indian water settlements are creative resolutions for bringing federal reserved rights into the state administration system. States or courts should adjudicate federal reserved rights asserted by non-Indian agencies separately from the general litigation path for state water users. In several states, settlement of non-Indian federal reserved rights has been successful, in part because of the separation. In addition, once federal reserved rights are removed from the adjudication of state water rights, the process becomes much smoother because stakeholders can debate the contentious issue of state-based rights without having to engage in unnecessary discussions about the extent of the federal rights.

Both Montana and Wyoming have used this approach. First, in Montana, a compact commission handles all federal claims to remove the federal reserved rights debate from the determination of state rights.[1118] Second, in Wyoming's Big Horn River adjudication, the litigation proceeded on different tracks, and the procedure litigated Indian

1116. *See, e.g., In re* Determination of Rights to Use Surface Waters of Yakima River Drainage Basin, 674 P.2d 160, 162 (Wash. 1983).
1117. *Id.* at 163.
1118. MONT. CODE ANN. § 2-15-212; 85-2-702 to -703 (2005).

federal reserved rights in the first track.[1119] The second phase resulted in the settlement of non-Indian federal reserved rights for federal public lands.[1120] The third phase proceeded separately on all the state-based rights.[1121]

There are, however, some drawbacks to the settlement process. As illustrated by the Animas-La Plata project, if a settlement does not include all affected parties, there may be impacts on the non-represented parties. Unrepresented parties give rise to due process concerns, and those parties may challenge the legitimacy of such settlements. Settlement talks are also inherently slow. The time it takes to reach consensus may slow the litigation process, causing frustration for both the court and the water users.

Similarly, litigating federal reserved rights too early may force the major parties to devote all their resources to trial preparation, putting settlement possibilities out of reach. In Wyoming, the unfortunate results of immediately litigating the tribal reserved rights were impasse and community animosity. The balance between litigation and settlement may be quite delicate.

Federal money, which may be less available in poor economic times, is another important component of Indian water settlements. In the 1980s and early 1990s, Congress passed legislation to fund many Indian water settlements. In contrast, between 1993 and 2000, a more fiscally sensitive Congress approved very few Indian settlements.[1122] One strategy, again successfully employed in Montana, was to approach Congress without support from the federal negotiating team, and sell a settlement having tangible benefits for both the state and tribe. Obtaining state financial support is very important, because settlements that have financial support are more successful.[1123]

The contemporary reason to adjudicate resurfaces. Many features inherent to litigation create pressure on parties to find their own solutions. Different states have used different methods to push parties to agreement, rather than litigating an outcome. In fact, Montana's

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1119. *In re* General Adjudication of All Rights In Big Horn River System 753 P.2d 76, 85 (Wyo. 1988).

1120. *Id.*

1121. *Id.*

1122. Congress approved two settlements during this period: the Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994, Pub. L. No. 103-434, 108 Stat. 4526 and the Chippewa Cree Tribe of The Rocky Boy's Reservation Indian Reserved Water Rights Settlement and Water Supply Enhancement Act of 1999, Pub. L. No. 106-163, 113 Stat. 1778.

1123. Northern Cheyenne Indian Reserved Water Rights Settlement Act of 1992, Pub. L. No. 102-374 (settlement included a provision to improve the safety of the Tongue River Dam and increase its storage capacity); Telephone Interview with Faye Bergan, attorney for the Montana Reserved Water Rights Compact Commission (stating that the settlement benefited all Montana citizens and persuaded the Montana legislature to authorize significant funding for improvements to the dam).

compact commission members and staff refer to the Big Horn case as a sad stepchild and hope never to reach that point. They believe that the litigated outcome in Wyoming made neighboring water users into lifelong enemies and split the community between Anglo water users and Native American water users.

9. Simplify Procedures

Even if states handle the hard issues and large claimants first, the McCarran Amendment still requires a comprehensive proceeding that includes many water users.[1124] How can this be effective and efficient?

To promote progress, an adjudication can be organized so that state and federal rights are separated during earlier stages of the proceeding. Montana does this by temporarily separating litigation from negotiation of federal reserved rights.[1125] Wyoming was able to separate state and federal rights early in the adjudication, but only with the stipulation that if federal parties agreed not to object initially to state rights, such rights could be reviewed at the very end. The Phase III adjudication in that state largely deals with state permit holders, which are 95% uncontested processes with court oversight but no actual litigation. For the most part, large water users and the federal parties do not take part in the Phase III process. Moreover, the consideration of small, junior rights does not pose a threat to tribal claims, other federal claims, or large state claims.

In Colorado, not all water users on a river system participate in every adjudication. Instead, water users learn of a proceeding through the water court's docket/resume system, and then may choose to participate if they feel the proceeding affects their interests.[1126]

With the pressure to move cases through the court system, adjudicating smaller water rights may seem desirable. However, the limited resources available to these small users may cause delay. Instead, courts may want to consider starting with a large, real party in interest. As an experienced attorney has observed, "[r]esolving the major parties' claims early eliminates precedent-setting contests over negligible amounts of water conducted by parties with tangential interests rather than real parties in interest."[1127]

Wyoming has been able to complete litigation of federal reserved rights, a task few other states have duplicated. The state completed the adjudication, in part, because it addressed the big, knotty, and complex water rights first. Dealing with the major water users first lessens

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1124. 43 U.S.C. § 666 (2000).

1125. MONT. CODE ANN. § 85-2-217 (2005).

1126. COLO. REV. STAT. § 37-92-302(3) (2005).

1127. Charlotte Benson, *General Stream Adjudication: State Party Perspective,* pg.3 (15th Annual Water Law Conference Feb. 20-21, 1997).

the burden on smaller users. In the appropriate case, it might be possible to start with stakeholders or class-representative litigants.

Courts should still make early efforts to finalize the adjudication of smaller rights. If these users can finish early, it will lower their transaction costs and anxiety. They will be less inclined to approach the legislature for a "fix" that may only complicate matters in the long run. In both Idaho and Arizona, legislative intervention, designed in part to help small users, resulted in added delay, complexity, and cost to the adjudications.

10. Build Lean, Flexible Structures

One principal organizational theory is that, in the case of an uncertain, contingent, and turbulent environment, one should build modest, tentative structures, evaluate their success or failure, and make the necessary refinements until there is identification of the right mechanism.[1128] Unfortunately, rather than starting small and learning what works and what does not, western states have built large and complex adjudications, investing millions of dollars in personnel, equipment, and structure. Once launched, these massive vessels are very hard to steer or modify. If states commence adjudications in the future, or more likely, restructure existing cases, decision makers should consider structures and procedures that are more adaptable. Courts, the state agencies, and litigants should be prepared to adapt as circumstances change.

11. Periodically Evaluate

After twenty years of adjudications, almost everyone has a proposal for improvement. However, a systematic, hard look at adjudications should precede change. This article suggests that those directly involved in adjudications should undertake periodic evaluations of the process. Judicial oversight should be invoked to ensure that evaluation, which in turn may suggest alternative dispute resolution methods to help achieve constructive results. Federal and state parties should work together to make the process easier for all parties involved. If one set of major parties acts unilaterally to change or improve an adjudication, history suggests that more litigation will follow.

C. View From the Bench

In June 2005, a group of judges, special masters, and referees met to discuss the significance of general stream adjudications and suggest improvements. One of their most important conclusions was that

1128. Robert P. Biller, *Public Policy and Public Administration Implications for the Future of Cross-Cultural Research and Practice*, 9 KOREA OBSERVER 253, 264-66 (1978).

states must realistically estimate the cost of an adjudication, and, if the state decides to goes forward, commit funding to the court and the state water agency sufficient to prosecute the case from start to finish. Additionally, policymakers should give careful thought to the goals of the adjudications and appropriate, rational procedures. Lastly, decision makers need to pay more attention to the sources of water to be adjudicated, what parties should be involved, and how water quality will be considered, if at all.

These judicial officers also believe that trial courts must manage adjudications more aggressively. Trial judges would benefit from more education in complex case management and water law. The judge should set firm deadlines and avoid delays that reduce pressure for settlement. Other entities, such as the appellate courts and state legislatures, should be prudent about taking actions that interfere with the trial court's case management plan.

States should seamlessly integrate alternative dispute resolution processes into the adjudication process. Special outreach and educational efforts may be necessary for *pro se* parties. Lastly, the court, parties, and state policymakers need to give more thought to the post-decree administration and the means for updating final decrees.

VI. CONCLUSION

For much of its history, America has escaped widespread social disruption over land, water, and other natural resources. The vast American West provided an escape valve for landless and dispossessed Americans and European immigrants to begin anew. Through hard work and good fortune, those who traveled west could achieve a more happy and affluent life. Land and resources were available for everyone. The major federal policies of the nineteenth century hastened this westward movement. Unfortunately, using the West as an escape valve required the removal of entire Indian societies, a historical injustice that, like slavery, America has yet to fully address.

Prior to World War II, only 27 million people lived in the West.[1129] By contrast, the last three decades have brought unprecedented growth to the region. Population estimates for the future alarm us all. With a projected 120 million people living in the West by 2020, we approach a critical moment.[1130]

The issue is not our threatened farmland, congested cities, polluted air, or scarce water supplies. Rather, the critical question is whether we can achieve a just, civil society in the West in spite of intensified competition for water and other resources. German philosopher

1129. U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 4-5 (1941).
1130. U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 35 (1997).

Georg Wilhelm Friedrich Hegel predicted just this moment for American society when he wrote over one hundred sixty years ago:

> Only when, as in Europe, the direct increase of agriculturists is checked, will the inhabitants, instead of pressing outwards to occupy the fields, press inwards upon each other—pursuing town occupations, and trading with their fellow citizens; and so form a compact system of civil society, and require an organized state.[1131]

For many decades, rural residents have been leaving the farms for city occupations. Yet as we look back upon the twentieth century, we see a transitional period between the rural West of the nineteenth century and the radically urbanized West of the future. Life in the dozen or so big western cities, populated by residents who, for several generations, no longer directly rely on the land, will be a fundamentally different experience for everyone. As we "press inward" on one another, will we be able to foster the new forms of governance needed to achieve civility and justice in all human affairs, particularly the allocation of water resources?

The development of general stream adjudications over the next decade may be a bellwether of westerners' abilities to govern wisely in the twenty-first century. The water adjudications in the early years of the twentieth century were relatively friendly and simple affairs. By mid-century, western water policy grew much more complicated. State-federal competition over water dominated the 1950s. Indian water right claims overshadowed those tensions in the following decades, as did the water demands of energy projects, interstate competition for natural resources, environmental concerns, and the growing water needs of western cities. Even the basic federal structure has changed, devolving more responsibilities from the national government to states and localities. Old or new, all of these themes reverberate through most western water adjudications.

If these tensions were not enough, western adjudications have become the "court of last resort," saddled with the extra task of resolving a host of political and economic issues. These issues are the pentimentos that have long bedeviled the West. We have called upon courts to make sense of the artificial legal distinction between surface and groundwater. Adjudication courts must undertake the politically difficult task of "making honest" water uses, which harken from a century ago, by using a rigorous application of the beneficial use principle. Courts must also ensure water quality and rectify the environmental damage to many waterways, a truly daunting task. Many communities see adjudications themselves as a divisive force that disrupts traditional

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1131. GEORGE WILHELM FRIEDRICH HEGEL, THE PHILOSOPHY OF HISTORY 86 (J. Sibree trans., Dover Publications 1956) (1899).

arrangements concerning water.[1132] All the while, tribes view state adjudication courts with suspicion, looking for any sign of anti-Indian bias. Finally, adjudication courts occupy the margin between the arid reality of the West and those users who deny that reality.

These tensions and competing issues constitute a burden that is unreasonably heavy for most courts to bear. Capable as they are, judges do not have the wisdom, much less the political power, to find the answers that have eluded western decision-makers for a century. Given this difficult assignment, western stream adjudications have understandably met with mixed success.

We need to realistically appraise what we can expect from western stream adjudications. Adjudication courts are not legislative bodies responsible for making water law and policy, although they are frequently required to fill in the interstices left by the legislatures. Adjudication courts are not engineering firms capable of exact specification of water rights, although their decisions are based on good science and technology. Further, adjudication courts are not forums for unbridled public commentary, although they can spark a beneficial citizen dialog about water. Finally, adjudications do not produce self-enforcing decrees. Courts and states need a rigorous post-decree enforcement mechanism to ensure effectuation of their work.

For decades, general stream adjudications have stood as the central water policy feature in many western states. That prominence was unwarranted because these cases never had the ability to meet the expectations placed upon them. However, it would be a mistake to conclude now that adjudications are irrelevant to western water policy. Rather, they remain vital because we have lavished huge amounts of water in areas that cannot sustain such consumption. Though we have divided western waters between state and federal law, stream adjudications can provide an avenue for incorporating federal and tribal water rights into state water right systems. Realistically appraised, general stream adjudications provide an opportunity for achieving an integrated, reasonable, and beneficial use of the West's surface and groundwater. The cases can generate useful information about water supply and use, thereby aiding water resource managers in conservation efforts. The cases can also serve as the platform for broader, more inclusive public discussions about the governance of western watersheds. General stream adjudications provide a fertile opportunity for achieving responsible, integrated management of western watercourses for the benefit of our children, and our children's children.

1132. The words of Colorado District Judge Victor Elliott, uttered in 1880 bear repeating here: "I cannot consent . . . to go around to determine, without being solicited, what are the rights of the respective owners of ditches in these several water districts." ROBERT G. DUNBAR, FORGING NEW RIGHTS IN WESTERN WATERS 94 (1983).