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Framework for Evaluation of Tribal Water Settlements

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Farmers, Fish, Tribal Power and Poker: Reallocating Water in the Truckee River Basin, Nevada and California

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The law governing allocation of water in the western United States has changed little in over 100 years.[1] Over this period, however, both our population and our understanding of the natural systems served by rivers have mushroomed.[2] To meet growing urban needs and to reverse the environmental cost extracted from natural systems, contemporary water policy globally and in the West increasingly focuses less on water development and more on improvements in management, efficiency, and scientific understanding.[3] These efforts are frequently at odds with

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1. *See, e.g.*, CHARLES F. WILKINSON, CROSSING THE NEXT MERIDIAN: LAND, WATER, AND THE FUTURE OF THE WEST 25 (Island Press 1992) (referring to prior appropriation, the doctrine governing water allocation in most western states, as a "lord of yesterday").

2. Charles F. Wilkinson, *Western Water Law in Transition*, 56 U. COLO. L. REV. 317, 321-322 (1985).

3. Peter H. Gleick, *The Changing Water Paradigm, in* THE WORLD'S WATER 1998-1999, THE BIENNIA REPORT ON FRESHWATER RESOURCES 9 (Island Press 1999).

the rigid law governing water allocation, forcing water policymakers and managers to find alternative routes that introduce sufficient flexibility into water management to address changing needs and values.[4] Negotiation is playing an increasingly important role in the effort to solve modern problems. Basin-wide collaborative processes aimed at resolving allocation, restoration, water quality, and jurisdictional disputes, occur on almost every major water basin in the West. The current ad hoc approach has produced a variety of processes and provided a fertile ground for testing concepts in water law.[5] The use of negotiation to solve problems inadequately addressed by existing law may herald a new era for water distribution and management in the West—one tailored to the problems faced by specific water basins and structured around governance that mimics basin boundaries.

Part I of this three-part series explored one such effort on the Milk River Basin in Montana.[6] There, the threat of development of senior tribal water rights and frustration over water distribution inefficiencies, caused by adherence to the doctrine of prior appropriation and by conflicting management by multiple jurisdictions, led people to negotiate a basin-wide approach to water distribution and management. Part I concluded that two of the measures agreed to in the Milk River negotiations—the establishment of an intergovernmental committee to coordinate the management of water across jurisdictional boundaries and the development of a program to bank water for redistribution during drought, which are a major step towards introducing basin-wide governance and flexibility in water management. In addition, the Milk River negotiations reversed the inequity created by federal emphasis on water development around an Indian reservation at the expense of tribal water rights.

This article, Part II, moves west to the Great Basin, where the threat of water reallocation to meet the needs of endangered species and the growing urban needs in the Truckee River Basin of California and Nevada is giving rise to a negotiated plan governing operation of

4. *See, e.g.*, LAWRENCE J. MACDONNELL, FROM RECLAMATION TO SUSTAINABILITY: WATER, AGRICULTURE, AND THE ENVIRONMENT IN THE AMERICAN WEST 232 (U. Press of Colo. 1999) (discussing the problem created by a rigid legal system that has not kept pace with change in water-use preferences); Joseph W. Dellapenna, *The Importance of Getting Names Right: The Myth of Markets for Water* , 25 WM. & MARY ENVTL. L. AND POL'Y REV. 317 (2000) (discussing the growing need to reallocate water from agricultural to urban and environmental uses); David H. Getches, *From Askhabad, to Wellton-Mohawk, to Los Angeles: The Drought in Water Policy*, 64 U. COLO. L. REV. 523 (1993). "The goals of water policy tend to be confined to respecting existing rights and rewarding development. Western states are lately realizing that economic stability, human health, ecological balance, and survival of urban and rural communities all have a nexus in water."; Janet C. Neuman, *Adaptive Management: How Water Law Needs to Change*, 31 ENVTL. L. REP. 11432 (Dec. 2001) (discussing the need to introduce flexible "adaptive" management into the prior appropriation system).

5. *See, e.g.*, David H. Getches, *The Metamorphosis of Western Water Policy: Have Federal Laws and Local Decisions Eclipsed the States' Role?*, 20 STAN. ENVTL. L.J. 3, 5-6 (2001). "These [locally-driven] approaches . . . can serve as laboratories for incubating proposals for systematic change at the state level."; *see also* A. Dan Tarlock, *Reconnecting Property Rights to Watersheds*, 25 WM. & MARY ENVTL. L. AND POL'Y REV. 69, 75 (2000) (noting that "[w]atershed management is once again in vogue but in a more decentralized, ad hoc, stakeholder-driven form than previous hydrologic governance efforts.").

storage on the heavily developed river. By introducing flexible management to existing infrastructure, the Truckee River negotiations are overcoming substantial barriers to reallocation of water.

Part III analyzes the processes used in achieving the Milk and Truckee River settlements and concludes that while litigation or its threat may be necessary to force consideration of noneconomic interests such as aquatic habitat, negotiation offers the best means to improve water governance and allocation in the West.[7] Part III identifies key process elements necessary to an efficient, fair, and durable settlement. It also recommends changes to the current federal team process for participation in water negotiations to provide accountability to national interests. Finally, Part III recommends congressional criteria for approval of water settlements that promote fair allocation of the benefits of the water resource, movement toward sustainable use of the resource, and use of federal subsidies only to these ends.

The Truckee River takes its water supply from the snowpack of the Sierra Nevada Mountains in California and has its terminus in Pyramid Lake in the desert of Nevada. Along the way, it serves kayakers, fishermen, hydropower stations, municipal needs, and a major diversion to the Carson River Basin for a federal irrigation project. To balance the cycles of flood and drought typical of rivers fed primarily by snowmelt, the Truckee River is regulated by five major federal reservoirs and several private reservoirs.

The terminus of the Truckee River, Pyramid Lake, is located within the Pyramid Lake Paiute Indian Reservation. When viewed by John C. Fremont in 1844, the lake and the mouth of the river were teeming with Pyramid Lake cutthroat trout (a subspecies of the LCT) and a sucker known as the cui-ui.[8] Diverting the river to satisfy the irrigation project resulted in the lowering of lake levels, blocking passage of fish to spawning grounds.[9] The Pyramid Lake cutthroat trout disappeared entirely from the lake in the late 1930s or early 1940s, though a similar strain of Lahontan cutthroat trout("LCT") was subsequently introduced.[10]

Years of litigation attempting to reallocate water to Pyramid Lake ultimately upheld the dominance of appropriative

6. Barbara A. Cosens, A *New Approach in Water Management or Business as Usual? The Milk River, Montana*, 18 J. ENVT'L L. & LIT. 1, 2003.

7. Barbara A. Cosens, *Water Dispute Resolutionin teh West: Process Elements for the Modern Era in Basinwide Problem Solving*, 33 Env. L. 949, 2003.

8. CALIFORNIA DEPARTMENT OF WATER RESOURCES, TRUCKEE RIVER ATLAS 26 (hereinafter TRUCKEE RIVER ATLAS) (June 1991).

9 . Nevada Department of Conservation and Natural Resource, Division of Water Planning, *Truckee River Chronology: Chronological History of Lake Tahoe and the Truckee River and Related Water Issues, Part* I (hereinafter Truckee River Chronology Part I) 16, *available at* http://water.nv.gov/water%20planning /truckee/truckee1.htm (last visited April 14, 2004).

10. Truckee River Chronology Part I, *supra* note 7, at 11; TRUCKEE RIVER ATLAS, *supra* note 6, at 27; United States Department of the Interior, Bureau of Reclamation, Fish and Wildlife Service, State of California, Department of Water Resources, Draft Environmental Impact Statement/Environmental Impact Report, Truckee River Operating Agreement 3-128 (hereinafter TROA) (February 1998). In January 2003, the parties to the TROA negotiations reached final agreement. The agreement and a new EIS/EIR have not been made public as of the date of publication of this article.

water rights for irrigation.[11] Only after the federal Endangered Species Preservation Act was passed in 1966, followed by the Endangered Species Act ("ESA") did the flow of the river begin to change. The LCT was listed as threatened in 1975[12] and the cui-ui was listed as endangered in 1967.[13]

Meanwhile, the Nevada towns of Reno and Sparks grew, increasing the municipal demand for Truckee River water. Along with these growing urban demands, recreational use of the headwaters of the Truckee River around Lake Tahoe—a lake dissected by the California-Nevada border—also increased, and use of the basin's many reservoirs grew.

In 1990, after years of litigation and less-than-comprehensive negotiated agreements, Congress passed the Truckee-Carson-Pyramid Lake Water Rights Settlement Act (the "1990 Settlement Act").[14] Among other things, the Act mandated development of a process to revise the operating criteria for the Truckee River towards the restoration of endangered species and towards providing a drought water supply for urban areas. The Act also authorized changes to operation of federal dams for these purposes.[15]

Section I of this paper describes the landscape of the Truckee River Basin and its water supply, development, and distribution history. Section II describes the modern era of water distribution disputes in the basin. Finally, Section III looks at the process leading to, and solutions reached, in the 1990 Settlement Act and the pending Truckee River Operating Agreement ("TROA") authorized by the Act. This analysis concludes that locally driven negotiations to resolve problems of water allocation and management are currently the most efficient means to produce durable solutions. To assure that local processes do not ignore national interests, however, the current approach to federal participation and congressional approval and authorization of federal funding must change. Section III also recommends changes to the current federal team process to provide accountability to broader national interest, not merely the proprietary interests in the particular basin. In addition, Section III recommends congressional criteria for approval and authorization of funding that promote fair allocation of the benefits of the water resource, movement towards sustainable use of the resource, and use of subsidies only to that end, eliminating subsidies to perpetuate uses of the water resource that cannot ultimately be sustained within the basin on either an economic or ecological basis.

I. The Truckee River

The following sections describe the geographic and political setting of the river as well as the human-imposed changes to its course.

11. Nevada v. United States, 463 U.S. 110, 126 (1983).

12. 40 Fed. Reg. 29,864.

13. 50 C.F.R. § 17.11 (2003).

14. Truckee-Carson-Pyramid Lake Water Rights Settlement Act of 1990, Pub. L. No. 101-618, Title II (hereinafter 1990 Settlement Act), *reprinted in* TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 101.

15. *Id.*

16. Truckee River Chronology Part I, *supra* note 7, at 1.

A. The Setting

The Truckee River Basin covers a little more than 3,000 square miles in California and Nevada and includes the Pyramid Lake Paiute Indian Reservation.[16] The river itself begins at the outlet from Lake Tahoe in California and is fed by snowmelt draining from both the California and Nevada portions of the Tahoe Basin.[17] The 105-mile long river flows east into Nevada, picking up tributary water from Martis Creek, Prosser Creek, the Little Truckee River, and Independence Creek.[18] Although only 25 percent of the Truckee River Basin lies within California, it is within this 25 percent that most of its precipitation falls.[19] The river leaves the Sierra Nevada and enters the Great Basin, so named because rivers that enter it do not leave.[20] After entering the Great Basin, the river turns north and flows through the Truckee Meadows, now home to the people of Reno and Sparks.[21] Several miles north of Truckee Meadows the river enters the deposits left by the high water mark of Lake Lahontan, a Wisconsin glacial age lake covering 8,600 square miles at its peak, which occurred between 15,000 and 13,500 years ago.[22] The remnants of the once-continuous Lake Lahontan are now confined to Pyramid Lake on the north end and Walker Lake on the south.[23] Today the river must traverse an additional 23 miles from the rim of former Lake Lahontan to its terminus in Pyramid Lake.[24]

In 1844, when explorer Captain John C. Fremont rested on the shores of Pyramid Lake, he described the abundant salmon trout provided to his men by the local Indians.[25] The trout given to Fremont and his men ranged from two to four feet in length.[26] A four-foot trout weighed between forty and sixty pounds.[27]

At the time of the Fremont expedition, the Northern Paiute occupied much of the area surrounding the Truckee River and Pyramid Lake.[28] On November 29,

17. *Id.*

18. *Id.*

19. *Id.*; *see also* TROA, *supra* note 8, at 3-4 to 3-5. The average annual precipitation at Tahoe City on the shores of Lake Tahoe is about thirty-two inches, whereas the average annual precipitation in Reno, Nevada is about 7.5 inches. Eighty-five percent of the precipitation on the eastern Sierra accumulates as moisture content in snow.

20. Nevada Department of Conservation and Natural Resources, Division of Water Planning, *Truckee River Chronology: Chronological History of lake Tahoe and the Truckee River and Related Water Issues, Part II, available at* http://water.nv.gov/water%20planning/truckee/truckee1.htm (last visited April 14, 2004). Captain John C. Fremont gave the Great Basin its name when he realized its geologic significance as a sink.

21. Truckee River Chronology Part I, *supra* note 7, at 9.

22. *Id.* "Wisconsin glacial age" refers to the period of glacial advancement that began about 80,000 years ago and ended 10,000 years ago. *See also* http://vulcan.wr.usgs.gov/Glossary/Glaciers/IceSheets/description_ice_sheets. html.

23. *Id.*

24. *Id.*

25. Nevada v. United States, 463 U.S. at 114.

26. *Id.* at 115 (Presumably the salmon trout described was the Pyramid Lake cutthroat trout.).

27. Truckee River Chronology Part I, *supra* note 7, at 10.

28. Pyramid Lake Paiute Tribe v. Morton, 354 F. Supp. 252, 254 (1972). The area [around Pyramid Lake and the Truckee River] has been consistently recognized as the Tribe's aboriginal home."; TROA *supra*, note 8, at 3-211 Another tribe, the Washoes

1859, the United States withdrew from public settlement a tract of land around the northern portion of the Truckee River and Pyramid Lake for the purpose of reserving the land for the Paiute.[29] Actual reservation of the land for the Pyramid Lake Paiute occurred by Executive Order in March of 1875.[30] The Reservation now covers 475,085 acres, including Pyramid Lake.[31]

The Pyramid Lake Paiute were heavily reliant on the abundant cui-ui and the Pyramid Lake cutthroat trout for both their subsistence and their economy.[32] The cui-ui are a species of bottom sucker found only in Pyramid Lake.[33] The Pyramid Lake cutthroat trout, a subspecies of the LCT, were also found only in Pyramid Lake, and, as will be discussed in greater detail below, became extinct in the late 193's or early 1940s.[34] In 1844, when Fremont encountered the trout, they traveled the entire length of the Truckee River to spawn in the lakes of the upper basin.[35] The LCT now found in Pyramid Lake were introduced in the 1950s.[36]

Pyramid Lake was the deepest portion of Lake Lahontan and the only portion that, according to studies of cores of lake sediment, never fully disappeared in Lake Lahontan's numerous cycles of flood and desiccation.[37] Pyramid Lake now covers 169 square miles and contains roughly 21 million acre-feet of water.[38] It is located wholly within the Pyramid Lake Paiute Indian Reservation.

Western society's rapid alteration of the flow of the Truckee River over the past 100 years has dramatically affected the natural water supply to Pyramid Lake.[39] This change in water supply is inextricably linked to the migration of people of European decent to the Truckee River Basin and the development of the waters there. The pace of change in water supply though geologic time pales in comparison to man's impact in the past 100 years. Understanding the water development history and the legal battles over water in the Truckee River Basin from 1900 to 1970 illuminates the problems faced today and the avenues for their resolution.

also occupied smaller areas around Lake Tahoe and the current locations of Reno and Carson City. The Truckee River was named for Captain Truckee, a Paiute chief who served as a guide for white settlers and explorers crossing the Sierra in the 1840s. TRUCKEE RIVER ATLAS, *supra* note 6, at 2.

29. TROA, *supra* note 8, at 3-211 to 3-212.

30. *Id.* at 3-212.

31. *Id.*

32. Morton, 354 F. Supp. at 254 "[Pyramid] Lake has been the Tribe's principal source of livelihood. Members of the Tribe have always lived on its shores and have fished its waters for food."; Truckee River Chronology Part I, *supra* note 7, at 10.

33. Truckee River Chronology Part I, *supra* note 7, at 10-11.

34. *Id.* at 10-11. Different sources place the extinction between 1939 and 1941.

35. *Id.* at 15.

36. *Id.* at 11.

37. *Id.* at 29.

38. *Id.* at 10.

39. Nevada v. United States, 463 U.S. at 115 (Pyramid Lake's volume was reduced by 20,000 acre-feet between Fremont's expedition and the time of the case); Truckee River Chronology Part I, *supra* note 7, at 10 (Pyramid Lake's water level fell by almost 90 feet between 1910 and 1967).

B. Francis Griffith Newlands and Mark Twain

The battle between interests in instream flow in the upper Truckee River Basin in California (and the portion of Nevada around Lake Tahoe) and water development interests in Nevada was forged with the very first European migration into the area. The conflict may well derive from the starkly conflicting aesthetics of two landscapes—the beauty of Lake Tahoe in the headwaters and the aridity of the Nevada sagelands.

In 1903 Samuel Clemens described the aesthetic value of Lake Tahoe under the pen name of Mark Twain:

> The shore all along was indented with deep, curved bays and coves, bordered by narrow sand-beaches; and where the sand ended, the steep mountain-sides rose right up aloft into space—rose up like a vast wall a little out of the perpendicular, and thickly wooded with tall pines.
>
> So singularly clear was the water, that where it was only twenty or thirty feet deep the bottom was so perfectly distinct that the boat seemed floating in the air! Yes, where it was even eighty feet deep. Every little pebble was distinct, every speckled trout, every hand's-breath of sand. Often, as we lay on our faces, a granite boulder, as large as a village church, would start out of the bottom apparently, and seem climbing up rapidly to the surface, till presently it threatened to touch our faces, and we could not resist the impulse to seize an oar and avert the danger. But the boat would float on, and the boulders descend again, and then we could see that when we had been exactly above it, it must still have been twenty or thirty feet below the surface. Down through the transparency of these great depths, the water was not merely transparent, but dazzlingly, brilliantly so. All objects seen though had bright, strong vividness, not only of outline, but of every minute detail, which they would not have had when seen simply through the same depth of atmosphere. So empty and airy did all spaces seem below us, and so strong was the sense of floating high aloft in mid-nothingness, that we called these boat excursions "balloon voyages."[40]

As early as 1865 property owners around Lake Tahoe's shores thwarted an attempt to divert lake water for use in San Francisco.[41] Nevertheless, this effort did result in construction of a private dam at Lake Tahoe's outlet to the Truckee River that, after an effort to transfer water directly to San Francisco, was primarily used to regulate flow so that logs could float to a sawmill in Truckee.[42]

40. MARK TWAIN, ROUGHING IT 192-193 (Viking Penguin, Inc. 1981 printing).

41. John Kramer, *Lake Tahoe, the Truckee River, and Pyramid Lake: the Past, Present, and Future of Interstate Water Issues*, 19 PAC. L.J. 1339, 1342 (1988).

42. TROA, *supra* note 8, at 1-5.

In contrast to the recreational and aesthetic interests in the upper basin, ranchers of the lower Truckee River and Carson River basins recognized by the late 1800s that harnessing the two rivers for irrigation would be essential to the cultivation of alfalfa and pasture. In 1888, one such rancher, who purchased his land after inheriting his father-in-law's silver mine, formed the Truckee Irrigation Project, a private plan to regulate the flow from Lake Tahoe.[43] The rancher, Francis Griffith Newlands, promptly lost half a million dollars in the failed enterprise, and adopted the growing sentiment that only government could accomplish such a massive undertaking.[44] Newlands ran for Congress and won.[45] Though Newland's bill was initially rejected due to his portrayal of it as an effort to nationalize irrigation works, the Reclamation Act of June 17, 1902, contained most of what Newlands proposed.[46]

The Newlands Project to harness the Truckee and Carson rivers was among the first authorized under the new Act.[47] The project contemplated construction of reservoirs in California to serve irrigation in Nevada.[48] Although regulation of water flow through construction of reservoirs significantly changes the timing of water flow, the greatest change to the basin's hydrology occurred downstream of Truckee Meadows. There Derby Dam, completed in 1905, diverts up to 900 cubic feet per second of the flow of the Truckee River into the Truckee Canal for conveyance to the Carson River Basin.[49] By these means, an average of 136,830 acre-feet per year of water permanently leaves the Truckee River Basin.[50]

The fact that the diversion to the Carson River Basin was built first in the sequence of construction of the Newlands Project illustrates its importance to the plan for water development. The reser-

43. MARC REISNER, CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER 116 (Penguin Books 1987).

44. *Id.* John Wesley Powell, on surveying these arid regions in the late 1800s, recognized that the major rivers of the West would control its development. He further recognized that these great rivers could not be developed for irrigation by individuals, and recommended the formation of collectives or irrigation districts for the control of land and water. WALLACE STEGNER, BEYOND THE HUNDREDTH MERIDIAN: JOHN WESLEY POWELL AND THE SECOND OPENING OF THE WEST 229 (U. of Nebraska Press 1953).

45. REISNER, *supra* note 41, at 116 (Newlands served first as Nevada's Congressman and later as a Senator).

46. *Id.* at 117-118.

47. TRUCKEE RIVER ATLAS, *supra* note 6, at 48 (referring to the description of the project in the *First Annual Report of the Reclamation Service* published in 1903).

48. TRUCKEE RIVER ATLAS, *supra* note 6, at 48 ("[t]he situation in Nevada is further complicated by the fact that much of its water supply comes from across the State line on the west. . . . Thus to utilize the spring floods it will be necessary to construct reservoirs in California and take the waters out upon lands in Nevada." *quoting* the *First Annual Report of the Reclamation Service* published in 1903).

49. Truckee River Chronology Part I, *supra* note 7, at 16; TRUCKEE RIVER ATLAS, *supra* note 6, at 22; TROA, *supra* note 8, at 1-5 (the Truckee canal was completed in 1906).

50. Truckee River Chronology Part I, *supra* note 7, at 16 (From 1910 to 1966, 240,000 acre-feet per year on average were diverted at Derby Dam. From 1967 to 1994 that number fell to 183,160 acre-feet per year. Roughly 46,330 acre-feet per year are either diverted to irrigation within the Truckee River Basin or lost to evaporation or seepage, thus accounting for the difference between the diversion amount and the delivery to the Carson River Basin.)

voirs constructed later provided a means to alter the timing of water flow but would not have led to such a major change in the basin's hydrology without the diversion of that flow to the Carson River Basin.[51] The fact that the single most important feature of the Newlands Project is also the primary cause of damage to Pyramid Lake, as will be detailed below, is probably the key element in prolonging the dispute over use of water in the Truckee River Basin. When the infrastructure controlling water flow in a basin directly interferes with the interest of a party, creative solutions that preserve that infrastructure become hard to find. Were it not for the flexibility provided by the dams constructed to regulate water flow, settlement may not have been possible, and even with that flexibility, settlement does not include the primary recipients of the flows diverted for the Newlands Project—the Truckee-Carson Irrigation District ("TCID"). Due to their importance in achieving settlement, the dams in the upper basin, only two of which actually serve the Newlands Project, are described in the following sections.

C. Holding Back the River—Dam Construction

1. The Newlands Project—Lake Tahoe

The dam controlling the outlet from Lake Tahoe, privately constructed in the early 1870s,[52] was transferred to the predecessor of the Sierra Pacific Power Company in 1902 and then to the United States Bureau of Reclamation ("BOR") in 1915.[53] It is operated by the TCID for the Newlands Project by agreement with the BOR.[54] The dam controls only the upper 6.1 feet of Lake Tahoe.[55] However, due to the vast surface area of the lake, these 6.1 feet store approximately 744,600 acre-feet of water over the lake's natural storage.[56] The dam on Donner Lake, discussed below, provides the only other storage in the Truckee River Basin for the Newlands Project.

2. Other Federal Dams and Other Federal Interests: Boca, Prosser Creek, Martis Creek, and Stampede Reservoirs

The remaining reservoirs in the upper Truckee River Basin are built on tributaries to the Truckee River and are discussed in order of construction. Boca Dam on the Little Truckee River, first built in 1868 for ice harvesting,[57] was relocated upstream

51. *See* TROA, *supra* note 8, at 1-5 (describing the acquisition of an easement to Lake Tahoe Dam in 1908 by the Bureau of Reclamation to provide more reliable flows for the Project's diversion).

52. Truckee River Chronology Part I, *supra* note 7, at 17.

53. TROA, *supra* note 8, at 1-5.

54. Truckee River Chronology Part I, *supra* note 7, at 17.

55. *Id.*

56. *Id.* (The use of this water to meet instream flow requirements for hydropower, referred to as Floriston rates, in addition to serving the Newlands Project is discussed below.)

57. Truckee River Chronology Part I, *supra* note 7 at 18; TRUCKEE RIVER ATLAS, *supra* note 6, at 21. Boca reservoir lies in a cold sink where only an average of 10 days per year are frost-free. TRUCKEE RIVER ATLAS, *supra* note 6, at 33.

and substantially expanded by BOR to a capacity of 40,800 acre-feet in 1937.[58] The 1937 dam was agreed to in the Truckee River Agreement of June 13, 1935, discussed in greater detail below.[59] The Agreement designated Boca Reservoir for use in conjunction with Lake Tahoe to satisfy the instream flow rates for hydropower referred to as "Floriston rates" and discussed in detail below.[60] Boca Dam is operated by the Washoe County Water Conservation District, although the BOR is still considered owner of the water right for storage.[61]

Prosser Creek Reservoir, constructed on the creek of its name in 1962 by the BOR, holds 29,800 acre-feet of water.[62] Similar to Boca Reservoir, Prosser Creek Reservoir is used in conjunction with Lake Tahoe to maintain Floristan instream flow rates for hydropower[63] and for flood control.[64] Prosser Creek Reservoir is operated by the BOR.[65]

Martis Creek Reservoir is the sole reservoir in the basin constructed by the United States Army Corps of Engineers and is used strictly for flood control.[66] The reservoir capacity is 20,400 acre-feet of water, though leakage results in little actual carry-over storage.[67]

Stampede Dam was constructed on the Little Truckee River upstream from Boca Reservoir, as a result of the 1955 Washoe Project Act.[68] The BOR completed construction of the 226,500 acre-foot capacity reservoir in 1970.[69] Although originally authorized for municipal and industrial ("M&I") purposes, litigation and compliance with the ESA, discussed below, resulted in dedication of releases to fisheries.[70]

3. Private Interests in Hydropower and M&I: Donner and Independence Lakes

In addition to Lake Tahoe, two other natural lakes in the Truckee Basin are controlled by outlet dams that increase storage capacity: Donner Lake, first dammed in 1877, with the current dam constructed in the 1930s to provide 9,500 acre-feet of storage over the natural capacity of the lake;[71] and Independence Lake, located upstream from Stampede and Boca reservoirs on the Little Truckee River, first dammed in 1879.[72] Storage capacity at

58. Truckee River Chronology Part I, *supra* note 7, at 18.

59. Kramer, *supra* note 39,at 1347.

60. Truckee River Chronology Part I, *supra* note 7, at 18.

61. *Id.* at 18.

62. *Id.* at 17.

63. *Id.* at 17; TRUCKEE RIVER ATLAS, *supra* note 6, at 1-9.

64. Truckee River Chronology Part I, *supra* note 7, at 17.

65. *Id.* at 17.

66. *Id.*

67. *Id.*

68. Kramer, *supra*, note 39, at 1355.

69. TROA, *supra*, note 10, at 1-9.

70. *Id.* at 1-10; Truckee River Chronology Part I, *supra* note 7, at 18.

71. Truckee River Chronology Part I, *supra* note 7, at 17; TROA, *supra* note 8, at 1-7.

72. Truckee River Chronology Part I, *supra* note 7, at 17.

Independence Lake was increased to 17,500 acre-feet over the natural capacity of the lake in 1939.[73] Both dams are owned and operated by Sierra Pacific Power Company primarily to provide M&I water to the Reno-Sparks area.[74] By agreement between Sierra Pacific and TCID, Donner Lake also stores supplemental water for the Newlands Project and is held in joint tenancy by the two parties.[75]

D. The Run of the River: pre-1970

The operation and coordination of the seven upper basin dams and the Newlands Project diversion at Derby Dam are best understood if divided into two separate eras, the first being the pre-1970 era. Blame it on the baby boom that resulted in a substantial increase in the United States' population. Blame it on the World War II and post-World War II industrial build-up that moved much of that increased population to urban areas. Blame it on post-World War II affluence that created new generations of educated scientists and recreationists. Blame it on the rash of environmental legislation passed during the Nixon Presidency. Whatever the cause, with the exception of early efforts to accommodate landowners on the shores of Lake Tahoe, a division in values occurred around 1970 between early irrigation developments and later urban, tribal, and environmental concerns.[76] It is this dividing point that influences the litigation and negotiation of disputes concerning operation and management of the Truckee River. Thus, the pre-1970 legal structure of the operation and management of the Truckee River is discussed first in the following section, and the post-1970 playing field is set forth in the next section, discussing modern development until the 1990 Settlement Act and TROA.

Water interests in the Truckee River Basin involved a pattern of litigation followed by settlement early in their history. The shifting of power via litigation often proved to be a catalyst for settlement. The interweaving of litigation and settlement in the basin is discussed in chronological order.

1. The Floriston Rates

Possibly the most important pre-1970 agreement placing constraints on the run of the river is the 1908 agreement between the Truckee River General Electric Company (predecessor to Sierra Pacific Power Company and in 1908 the owner of the Lake Tahoe dam) and the Floriston Pulp and Paper Company to maintain minimum instream flows for the pulp mill and hydropower generation at

73. *Id.*; TROA, *supra* note 8, at 1-7.

74. Truckee River Chronology Part I, *supra* note 7, at 17; TROA, *supra* note 8, at 1-8.

75. Truckee River Chronology Part I, *supra* note 7, at 17; TROA, *supra* note 8, at 1-8 (Use of this water is currently tied up in litigation.).

76. *See* Dick Acton, *Peace or Truce: The Truckee-Carson-Pyramid Lake Settlement Act*, Draft PhD. Dissertation (U.Nev., Reno, 2002) 77 (referring to the Native American civil rights movement and environmentalism as "indicators of the evolution of society, and particularly western society, toward an urban environment as opposed to a rural agricultural based one. A society in which water has other values than solely for consumption by people and agriculture").

Floriston, California.[77] Referred to as Floriston rates, the minimum flows have been incorporated into every subsequent decree and agreement concerning the Truckee River, and their modification is key to recent agreements.[78]

While the Electric Company entered the agreement on minimum flows, it fought a legal battle on another front. The Reclamation Service had laid claim in 1903 to water stored in Lake Tahoe to serve the Newlands Project, but lack of control over the dam rendered it difficult to exercise the claim.[79] Following litigation and negotiation between the Reclamation Service and the Electric Company, in 1913 the two entities re-built the Lake Tahoe dam to its current configuration.[80] In 1915 the two entities resolved their dispute and entered a consent decree granting ownership and control of the dam easement to the BOR, subject to compliance with the Floriston rates.[81] The decree is referred to as the Truckee River General Electric Decree.[82]

77. Truckee River Chronology Part I, *supra* note 7, at 21; TROA, *supra* note 8, at 1-6. Floriston is located just upstream of the state line and downstream from the confluences with Prosser and Martis Creeks and the Little Truckee River. TROA, *supra* note 8, at Frontpiece map.

78. Truckee River Chronology Part I, *supra* note 7, at 21-22. The 1908 Floriston rates required a minimum of 500 cubic feet per second at the Floriston gage from March through September, and 400 cubic feet per second from October through February. Rates were achieved through releases from Lake Tahoe.; TROA, *supra* note 8, at 1-6.

79. TRUCKEE RIVER ATLAS, *supra* note 8, at 44.

80. *Id.*

81. Truckee River Chronology Part I, *supra* note 7, at 22; TRUCKEE RIVER ATLAS, *supra* note 6, at 49; TROA, *supra* note 8, at 1-6.

2. The Orr Ditch Decree and the Truckee River Agreement

Also in 1913, the United States sought adjudication in federal court of all rights to the Truckee River in Nevada, including use of storage in California to satisfy those rights, in order to confirm the water rights for the Newlands Project (the "Orr Ditch litigation").[83] As with many general stream adjudications, this suit percolated while other major events shaping water distribution in the basin unfolded.

Compliance with the Floriston rates tended to leave Lake Tahoe too high in wet years and too low in dry years to satisfy landowners and the State of California.[84] Pumping from the lake by BOR (and TCID that took over operation of the dam from BOR in 1926), when it fell below its natural rim during drought years between 1924 and 1934, fueled the battle with the landowners.[85] In 1935, negotiations culminated in the Truckee River

82. United States v. Truckee River General Electric Co., Civ. No. S-643-LKK (E.D. Cal. 1915); Truckee River Chronology Part I, *supra* note 7, at 22; TRUCKEE RIVER ATLAS, *supra* note 6, at 49; TROA, *supra* note 8, at 1-6.

83. Nevada v. United States, 463 U.S. at 116; Truckee River Chronology Part I, *supra* note 7, at 23; TRUCKEE RIVER ATLAS, *supra* note 6, at 53; TROA, *supra* note 8, at 1-8; Kramer, *supra* note 39, at 1348.

84. Kramer, *supra* note 39, at 1344-1345; TRUCKEE RIVER ATLAS, *supra* note 6, at 47 (noting that concern over use of the waters of Lake Tahoe led the California Conservation Commission to pass a resolution in 1913 recommending that the State seek the original jurisdiction of the United States Supreme Court over a suit against the State of Nevada for apportionment of the waters of Lake Tahoe).

85. TRUCKEE RIVER ATLAS, *supra* note 6, at 50.

Agreement among the United States, TCID, Sierra Pacific, and the Washoe Conservation District (serving agriculture in the Truckee Meadows area).[86] Two key features of the agreement have remained important throughout the subsequent history of the basin. First, the agreement altered the Floriston rates, setting up a staggered rate structure tied to the level of Lake Tahoe.[87] Second, the agreement provided for the construction of Boca Reservoir by the BOR, with operating criteria to allow the use of the reservoir to supplement Lake Tahoe releases to meet the reduced Floriston rates.[88]

The Truckee River Agreement proved key to settlement of the long-suffering Orr Ditch litigation. The Orr Ditch Decree was issued in 1944 and incorporated as Article 10 of the Truckee River Agreement.[89] In addition, the Orr Ditch Decree defined the water rights on the Truckee River in Nevada and established their priorities.[90] First priority on the river went to the Pyramid Lake Paiute Indian Reservation to irrigate 5875 acres on the Reservation.[91] Next in line was Sierra Pacific's right to 40 cubic feet per second as defined in the Truckee River Agreement for M&I use in the Reno-Sparks area.[92] Finally, the Newlands Project was granted a 1902 priority for 1,500 cubic feet per second to irrigate 232,800 acres.[93] Despite its presence in the headwaters, California and its water users were not party to the Orr Ditch litigation. The federal water master appointed by the Orr Ditch court administers the Orr Ditch Decree and the prior agreements it incorporates (i.e., the Truckee River Agreement and the Floriston rates).[94]

3. The Tahoe-Prosser Exchange Agreement

The next agreement in the pre-1970s era foreshadows the tide of solutions to come—the Tahoe-Prosser Exchange Agreement of 1959. Unless release was required from Lake Tahoe to meet Floriston rates, water for the Newlands

86. Truckee River Chronology Part I, *supra* note 7, at 22; TRUCKEE RIVER ATLAS, *supra* note 6, at 53; TROA, *supra* note 8, at 1-6.

87. Truckee River Chronology Part I, *supra* note 7, at 22; TRUCKEE RIVER ATLAS, *supra* note 6, at 52; TROA, *supra* note 8, at 1-7.

88. *Id.*

89. United States v. Orr Ditch Water Co., Equity No. A.3 (D. Nev. 1944); Truckee River Chronology Part I, *supra* note 7, at 23; TRUCKEE RIVER ATLAS, *supra* note 6, at 53; Kramer, *supra* note 39,at 1348.

90. United States v. Orr Ditch Water Co., Equity No. A.3 (D. Nev. 1944); Truckee River Chronology Part I, *supra* note 7, at 23; TRUCKEE RIVER ATLAS, *supra* note 6, at 53; Kramer, *supra* note 39, at 1348; TROA, *supra* note 8 at 1-8.

91. Nevada v. United States, 463 U.S. at 117 (The Reservation was given an 1859 priority date corresponding to the date of withdrawal of the reservation lands from the public domain.); TROA, *supra* note 8, at 3-19 (The Reservation right was decreed as: Claim 1: 4.7 acre-feet per acre for 3130 acres of bottomland. Claim 2: 5.59 acre-feet per acre for 2745 acres of benchland.)

92. TRUCKEE RIVER ATLAS, *supra* note 6, at 53; TROA, *supra* note 8, at 3-19.

93. Nevada v. United States, 463 U.S. at 117. "The Court of Appeals noted that 'there has never been irrigated more than about 65,000 acres of land in the Project.'" *Id.* at 117 n.3.

94. Bonnie G. Colby, Mark A. McGinnis, and Ken A. Rait, *Mitigating Environmental Externalities Through Voluntary and Involuntary Water Reallocation: Nevada's Truckee-Carson River Basin*, 31 NAT. RESOURCES J. 757, 773 (1991); E. Leif Reid, *Ripples from the Truckee: The Case for Congressional Apportionment of Disputed Interstate Water Rights*, 14 STAN. ENVT'L. L.J. 145, 153 (1995).

Project had to be stored in the Lake. This had the potential to result, at times, in almost no flow in the Truckee River between Lake Tahoe and Prosser Creek, which would present a problem for fisheries and recreation.[95] To maintain storage while providing streamflow in the Truckee River below Lake Tahoe, the solution memorialized in the Tahoe-Prosser Exchange Agreement was a paper transfer of water stored for the Newlands Project from Lake Tahoe to Prosser Reservoir (built in 1962 to be used in conjunction with Lake Tahoe to maintain Floriston rates) and to allow the equivalent amount of water to be released from Lake Tahoe.[96]

4. Interstate Allocation—a Failed Attempt

The next chapter in the pre-1970 history of the Truckee River Basin heralds the fundamental shift in values and power that defines the post-1970 era. It is the story of the failed attempt at interstate apportionment between California and Nevada. Some background on interstate apportionment is useful.

States seeking to resolve the allocation of water between them have three choices: a suit under the original jurisdiction of the United States Supreme Court;[97] congressional apportionment;[98] or negotiation of an interstate compact approved by Congress.[99] When the original jurisdiction of the United States Supreme Court is invoked for an equitable apportionment of interstate waters, the Court applies federal common law.[100] Thus, although the Court will weigh heavily the priority of water diversions within each state, "state law is not controlling."[101]

One of the major issues concerning apportionment that lacks guidance from the United States Supreme Court and is often absent or ambiguous in negotiated compacts for interstate apportionment, is how federal and Indian reserved water rights will be accounted for in an apportionment.[102] That is, does water allocated to the Pyramid Lake Paiute Indian

95. TROA, *supra* note 8, at 1-9.

96. *Id.* at 1-9.

97. *See, e.g.*, Colorado v. New Mexico, 459 U.S. 176 (1982); Nebraska v. Wyoming, 325 U.S. 589 (1945); Kansas v. Colorado, 206 U.S. 46 (1907).

98. *See, e.g.*, Arizona v. Colorado, 373 U.S. 546 (1963) (interpreting the Boulder Canyon Project Act to apportion the Colorado River).

99. *See, e.g.*, Yellowstone River Compact, *published at* § 85-20-101 Mont. Code Ann.; Texas v. New Mexico, 462 U.S. 554 (1983) (dispute concerning the Pecos River Compact); *see also* Reid, *supra* note 92, at 156-166 (summarizing the avenues open to California and Nevada to apportion the Truckee River). Note that authority for Compacts between states is found in the U.S. CONST. art. I, § 10, cl. 3.

100. Colorado v. New Mexico, 459 U.S. at 183; *see also* Reid, *supra*, note 92, at 156-158.

101. Colorado v. New Mexico, 459 U.S. at 184; *see also* Nebraska v. Wyoming, 325 U.S. at 619 (1945) (refusing to apportion water strictly along the lines of priority when inefficiency of conveyance makes it unlikely water not taken by upstream diversions in Colorado will reach downstream diversions in Nebraska and when "the priority system would disturb and disrupt long established uses"). Note that California, like Nebraska, is a combined riparian and prior appropriation state. WELLS A. HUTCHINS, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES, Vol. I, Chap. 7 226 and Vol. II, Chap. 10, 6-14 (Misc. Pub. No. 1206, Natural Resource Economics Div., Economic Research Service, USDA 1971).

102. In *Arizona v. California*, 373 U.S. 546, 601 (1963), the Supreme Court states "[f]inally, we note our agreement with the master that all uses of mainstream water within a State are to be charged

Reservation get subtracted from Nevada's share? California's share? Both? Or is it in addition to both? How that issue is determined in the Truckee River Basin controls whether the reserved rights of the Tribe were finally determined by the Orr Ditch Decree, or whether the Tribe may still assert fishery flows against California.[103] For California, as the administrator of relatively junior water rights, this was of particular importance.[104]

California and Nevada have considered both a suit for original jurisdiction and a negotiated compact in their attempts to allocate Truckee River and Lake Tahoe water between them.[105] The interest of the Reclamation Service and the predecessor of Sierra Pacific in development of Lake Tahoe for water use in Nevada led the California Conservation Commission in 1913 to recommend that the state bring suit for apportionment in the United States Supreme Court.[106] That suit was never filed, and the years that followed saw the litigation and settlement of the numerous disputes detailed above, some addressing certain of the interstate concerns.[107]

In 1955, in response to downstream objections to increasing appropriations on both the Nevada and California sides of Lake Tahoe as well as California's opposition to the Washoe Project Act authorizing construction of Stampede Reservoir, the California and Nevada legislatures created the California and Nevada Interstate Compact Commissions, respectively.[108] Congress gave its consent to negotiation of the interstate compact, which would include the Truckee, Carson, and Walker Rivers and Lake Tahoe, and imposed two conditions: (1) Presidential appointment of a federal participant in negotiations; and (2) congressional ratification of the final agreement.[109]

against that State's apportionment, which of course includes uses by the United States." The Court does not state the basis for this conclusion. The report of the Special Master states "[a]ll consumption of mainstream water within a state . . . [including] consumption of mainstream water on United States Indian Reservations . . . is chargeable to the state within which the use is made. All of the parties seem to agree to this accounting, and it is required by the contracts and the [Boulder Canyon] Project Act." Report of Special Master Simon H. Rifkind, *Arizona v. California*, December 5, 1960, 247. Thus, the ruling in *Arizona v. California* is specific to the Project Act and contracts governing allocation of water on the Colorado River and is not applicable to allocation of other rivers in general.

103. Kramer, *supra* note 39, at 1354 and 1366.

104. *Id.* at 1366 (noting that successful assertion of reserved claims by the tribe against California would trump all use of water in California from the Truckee River Basin).

105. Kramer, *supra* note 39, at 1340 (noting prior to the 1990 Settlement Act that "[e]ven after more than a century of effort, the problem of apportionment of [the Truckee River] waters between the two states has never been resolved.").

106. Kramer, *supra* note 39, at 1345; TRUCKEE RIVER ATLAS, *supra* note 6, at 47.

107. For example, the 1935 Truckee River Agreement addresses lake levels at Lake Tahoe resolving a dispute between recreational use at the lake and consumptive use in Nevada. Kramer, *supra* note 39, at 1348.

108. Kramer, *supra* note 39, at 1361.

109. *Id.* at 1361-1362 *citing* Pub. L. No. 84-553 (1955), 69 Stat. 675.

The Nevada legislature ratified a final interstate compact in 1969, and the California legislature did so in 1970.[110] The Compact contained a provision charging use of water by the United States, including the water rights of the Tribe, to the state in which it is used.[111] The appointed federal participant did not comment on this provision during negotiations, merely requesting that the agreement honor the rights decreed in the Orr Ditch litigation. Nevertheless, the Tribe and the United States on its behalf opposed the measure upon presentation of the agreement to the California Legislature and to Congress.[112] While opposing efforts to obtain ratification of the Compact by Congress, the United States Department of Justice, on behalf of the Pyramid Lake Paiute Tribe, filed suit for fishery flows in Nevada in addition to irrigation water decreed in the Orr Ditch litigation, and for reserved water rights against California, who had not been party to the Orr Ditch litigation.[113] These efforts ushered in the new era for the Truckee River Basin and are described in the next section.

While followed informally by California and Nevada, the interstate compact never obtained congressional approval due to United States Department of Justice and Tribal opposition.[114] Nevada and California have strongly criticized the failure of the United States' representative to the compact negotiations to raise the issue of additional water rights for the Pyramid Lake Paiute Tribe during negotiations.[115] Issues concerning the federal process in participation in major water negotiations will be discussed in Part III of this series. However, it is important to note for comparison between this failed negotiation of the interstate compact and the successful negotiation of the 1990 Settlement Act that little progress can be made when major interests within the basin are not represented at the table. Whether it is the fault of the United States for not raising the interests of the Tribe, or the fault of the states for not asking the Tribe to the table, the result is the same. A major governmental entity, located at the terminus of the river, was not included in Compact negotiations. As a result, the Compact was never finalized. The parties had learned this lesson by the time they entered the negotiations that culminated in the 1990 Settlement Act.

The shift in power that led to the failure of the interstate compact may have stemmed from the fact that as litigation and negotiation slowly chipped away at

110. Kramer, *supra* note 39, at 1367-1368, *citing* STATUTES OF NEVADA, at 69 -1259 (1969) (AB60); Cal. Water Code § 5976 (the California legislation was passed over opposition from the United States and the Pyramid Lake Paiute Tribe).

111. *Id.* at 1363.

112. *Id.* at 1362.

113. *Id.* at 1366 and 1371 (As discussed below, Nevada v. United States, 463 U.S. 115 resulted in a ruling that the Orr Ditch decree determined all of the reserved water rights of the Tribe in Nevada. The California suit was placed on hold pending negotiation of the 1990 Settlement Act.).

114. *Id.* at 1369; TRUCKEE RIVER ATLAS, *supra* note 6, at 61; Reid, *supra* note 92, at 154.

115. *See, e.g.*, Kramer, *supra* note 39, at 1368 (quoting the California Assembly Committee on Water finding the actions of the United States in opposing the Compact after appointing a participant to negotiations to be unreasonable).

problems in the upper basin, a major ecological disaster was brewing at the river's terminus. The story of this shift, the efforts to save Pyramid Lake, and of the rapidly growing urban needs of the Truckee Meadows area of Nevada lies in the post-1970 era.

II. Fish, Tribal Power and Poker: The Modern Era

A. Fish

The story of the modern era begins with the dramatic decline in the level of Pyramid Lake. As noted above, Pyramid Lake is a remnant of the Ice Age Lake Lahontan.[116] The glacial lake experienced many fluctuations over the past 360,000 years; however, core samples indicate that its deepest area, now the location of Pyramid Lake, never fully desiccated.[117] Lake Lahontan reached its peak between 15,000 and 3,500 years ago when the lake level was 4,380 feet above sea level and the lake had a surface area of approximately 8,600 square miles.[118] The Great Basin underwent a dramatic climate change to warm arid conditions about 10,000 years ago.[119] The surface of Pyramid Lake fell more than 500 feet to an elevation of 3,870 feet above sea level, the same level as that found in the late 1880s.[120]

Pyramid Lake is a terminal lake, and a terminal lake, like an ocean, loses water solely through evaporation. Unlike an ocean, however, the relatively small size of a lake renders it much more vulnerable to local yearly fluctuations in water supply. Unless freshwater inflow, including precipitation, is equivalent to evaporative loss, lake level and water quality will decline. Evaporative loss from Pyramid Lake is approximately 440,000 acre-feet per year.[121] Annual precipitation at Pyramid Lake adds up to an average of 55,000 acre-feet per year, demanding a Truckee River inflow requirement of 385,000 acre-feet just to maintain the Pyramid Lake at its current level.[122]

In 1906 the Truckee Canal opened its gates at Derby Dam, and from 1910-1966 diversions averaged 240,000 acre-feet per year.[123] During that same period, the level of Pyramid Lake dropped substantially, with estimates ranging from 70 to 90 feet.[124] Little information is available on changes in water quality, but one sample

116. Truckee River Chronology Part I, *supra* note 7, at 9, 29.

117. *Id.* at 29.

118. *Id.*

119. *Id.*

120. *Id.*

121. Kramer, supra note 39, at 1343; Truckee River Chronology Part I, *supra* note 7, at 28 (Calculation of surface evaporation is a mere function of surface area. In a climate like that at Pyramid Lake approximately 4.2 acre-feet evaporates per surface acre. As a result, the dramatic decline in Lake elevation actually results in a decrease in evaporative loss. Evaporative loss in 1909 would have been calculated as 571,242 acre-feet per year, whereas in 1968 it would have been calculated as 434,160 acre-feet per year.)

122. Truckee River Chronology Part I, *supra* note 7, at 28 (Calculations assume no groundwater contribution and no surface source other than the Truckee River.); *see also* Morton, 354 F. Supp. at 255 ("A surface water inflow of 385,000 acre-feet is needed to maintain the lake level").

123. Truckee River Chronology Part I, *supra* note 7, at 19.

124. Morton, 354 F. Supp. at 255 (Lake level dropped 70 feet since 1906); Truckee River Chronology Part I, *supra* note 7, at 15 (Lake level dropped by 94.3 feet between 1891 and 1967);

taken in 1882 measured 3,500 parts per million ("ppm") total dissolved solids, while current water quality is approximately 5,000 ppm total dissolved solids.[125]

Declining lake levels had two collateral effects. First, the change in elevation of the terminus of the Truckee River caused incision of the river's channel and migration of the incision upstream, thereby increasing bank erosion.[126] Second, the increased sediment load from bank erosion plus debris from an upstream sawmill, deposited immediately on reaching the lake, forming a delta at the river mouth.[127]

Reduction in the flow rate of the Truckee River entering Pyramid Lake and enhanced delta formation have had a devastating effect on fisheries. In 1844 when Captain John C. Fremont first saw Pyramid Lake, it was home to the Pyramid Lake cutthroat trout and the cui-ui, both found only in Pyramid Lake.[128] The fish at that time were abundant, and spawning runs of the cutthroat ran the entire length of the river to Tahoe and Donner lakes.[129]

The cui-ui, a sucker fish, spawns in the Lower Truckee River beginning in April or May, but spends its life in Pyramid Lake.[130] Adult cui-ui may live up to 40 years and have the potential to spawn every year, although due to their long life-cycle, yearly spawning is not essential to survival of the species.[131]

Two aspects of the twentieth century alterations to the Truckee River greatly reduced cui-ui spawning. First, the delta formed at the river's mouth imposed a barrier to river access.[132] Second, high, turbid spring flows are necessary to attract cui-ui to the river to initiate spawning.[133] Regulation of the river through dam construction and diversions at Derby Dam eliminated the high spring flows.

Overfishing and barriers to spawning resulted in extinction of the Pyramid Lake cutthroat trout in the late 1930s or early 1940s.[134] Soon after, the State of Nevada

TRUCKEE RIVER ATLAS, *supra* note 6, at 25 (Lake level dropped by 80 feet from 1906 to 1967); TROA, *supra* note 8 at 3-7 (Lake level dropped by 80 feet by 1967).

125. TRUCKEE RIVER ATLAS, *supra* note 6, at 27. Total dissolved solids, or TDS, is the measure of the water's salinity. For comparison, seawater measures 35,000 TDS, whereas Lake Tahoe measures 100 TDS. *Id.*

126. Chad R. Gourley, *Restoration of the Lower Truckee River Ecosystem: Challenges and Opportunities*, 18 J. LAND, RESOURCES, AND ENVT'L. L. 113, 114 (1998); TROA, *supra* note 8, at 3-55.

127. United States v. Truckee-Carson Irrigation Dist., 649 F.2d 1286, 1292 (9th Cir. 1981) *aff'd in part, rev'd in part* Nevada v. United States, 463 U.S. 110 (1983); TROA, *supra* note 8, at 3-55.

128. Truckee River Chronology Part I, *supra* note 7, at 11.

129. *Id.* at 15.

130. TROA, *supra* note 8, at 3-123.

131. *Id.* at 3-123 to 3-124.

132. TRUCKEE RIVER ATLAS, *supra* note 6, at 27.

133. Carson-Truckee Water Conservancy v. Watt, 549 F. Supp. 704, 711 (D.C. Nev. 1982) *aff'd in part, vacated in part* Carson-Truckee Water Conservancy Dist. v. Clark, 741 F.2d 257 (9th Cir. 1984); Gourley, *supra* note 123, at 118.

134. Truckee River Chronology Part I, *supra* note 7, at 11; TRUCKEE RIVER ATLAS, *supra* note 6, at 27; TROA, *supra* note 8, at 3-128.

began stocking Pyramid Lake with Lahontan cuttthroat trout ("LCT").[135] In 1967, the United States Fish and Wildlife Service ("FWS") listed the cui-ui as endangered.[136] In 1970, the FWS listed the LCT as endangered,[137] and reclassified it as threatened in 1975 to allow regulated fishing.[138]

The LCT historically traveled the entire length of the Truckee River and required cool stream temperatures to spawn.[139] Unlike the cui-ui, the LCT must spawn yearly to survive.[140] Historically, both spring and fall runs occurred on the Truckee River.[141] As with the cui-ui, however, the barrier to river access created by the delta prevented spawning of the LCT.[142] In addition, low stream flow and resulting warmer water reduced spawning habitat.[143]

In 1967, the FWS listed the cui-ui as endangered.[144] In 1970, the FWS listed the LCT as endangered,[145] and reclassified it as threatened in 1975 to allow regulated fishing.[146]

LCT is maintained as a hatchery stock.[147] However, in 1997, a particularly high water year, the LCT returned to the Truckee River to spawn.[148] Construction of Marble Bluff Dam and Pyramid Lake Fishway at the mouth of the Truckee River by the BOR in 1975 allowed cui-ui and LCT to bypass the delta.[149] Efforts to

135. Carson-Truckee Water Conservancy Dist., 549 F. Supp at 707 n.5 (Stock from the Pyramid Lake cutthroat trout, a subspecies of the Lahontan cutthroat trout, had been used to stock other streams. Those streams then provided the stock to re-introduce the fishery to Pyramid Lake, thus scientists believe the current population of cutthroat in Pyramid Lake is genetically similar to the original population.); Truckee River Chronology Part I, *supra* note 7, at 11; TRUCKEE RIVER ATLAS, *supra* note 6, at 27 (The Pyramid Lake Paiute Tribe has now taken over the hatchery program for the Lahontan cutthroat trout.).

136. TROA, *supra* note 8, at 3-7; 50 CFR § 17.11. The cui-ui was originally listed under the Endangered Species Preservation Act of 1966, P.L. 89-669, a pre-cursor to the Endangered Species Act of 1973.

137. 35 Fed. Reg. 16047. The LCT was originally listed under the Endangered Species Preservation Act of 1966, P. L. 89-669, a pre-cursor to the Endangered Species Act of 1973.

138. 40 Fed. Reg. 29864; 50 CFR §17.11; TROA, *supra* note 8, at 3-128.

139. TROA, *supra* note 6, at 3-128.

140. *Id.* at 3-128.

141. TROA, *supra* note 8, at 3-127.

142. Truckee River Chronology Part I, *supra* note 7, at 16.

143. *Id.* at 16; TROA, *supra* note 8, at 3-129.

144. TRUCKEE RIVER ATLAS, *supra* note 6, at 27; Gourley, *supra* note 124, at 118.TROA, *supra* note 8, at 3-7; 50 CFR § 17.11. The cui-ui was originally listed under the Endangered Species Preservation Act of 1966, P.L. 89-669, a pre-cursor to the Endangered Species Act of 1973.

145. 35 Fed. Reg. 16047. The LCT was originally listed under the Endangered Species Preservation Act of 1966, P.L. 89-669, a pre-cursor to the Endangered Species Act of 1973.

146. 40 Fed. Reg. 29864; 50 CFR §17.11; TROA Draft EIS/EIR, *supra* note 8, at 3-128.

147. Truckee River Chronology Part I, *supra* note 7, at 16.

148 Gourley, *supra* note 124, at 118.

149. TRUCKEE RIVER ATLAS, *supra* note 6, at 27; Gourley, *supra* note 124, at 118.

increase water flow have been led by the Pyramid Lake Paiute Tribe. Their story is next.

B. Tribal Power

There is no question that the Pyramid Lake Paiute Tribe historically relied upon cui-ui and Pyramid Lake (now Lahontan) cutthroat trout.[150] What has given rise to considerable dispute, however, is their power to protect that fishery. The tribe has pursued three legal avenues: enforcing the United States' fiduciary duty to the tribe; asserting reserved water rights; and enforcing the Endangered Species Act. The tribe's efforts on each of these three fronts are discussed in turn:

1. The Fiduciary Duty of the United States to the Pyramid Lake Paiute Tribe

Complicating the strong federal presence in the Truckee River Basin is the fact that the United States represents not one but two of the major water interests in the basin, and the two interests—the Newlands Project and the Tribe —are frequently in conflict over water. Under-standing what might guide the federal government in handling this conflict requires a review of its fiduciary duty to tribes.

Indian reservations are distinguished from other federal reservations by the special relationship between the tribes they are reserved for and the United States government. This special relationship in which the United States is considered trustee for tribal nations is one of the primary cornerstones of Indian law.[151] It is an outgrowth of the duty accepted by the federal government when it asserted dominance over Indian tribes.[152] Trusteeship governs "the required standard of conduct for federal officials and Congress . . . [and the interpretation of] treaties, agreements, statutes, executive orders, and administrative regulations."[153] When the federal government develops water for off-reservation interests in a basin shared with Indian reservations, federal obligations as trustee are tested.

The dilemma before the federal government, when faced with a conflict between operation of a federal project and its duty to an Indian tribe, is not unique to the Truckee River Basin.[154] Scholars assert that the fiduciary obligation to tribes tips the scale in the tribes' favor in the face of this conflict.[155] As will

150. *See, e.g.*, Nevada v. United States, 463 U.S. at 114-115, and the case below covering the historic relation between the Tribe and the fishery in greater detail, United States v. Truckee-Carson Irrigation District, 649 F.2d 1286, 1290 (9th Cir. 1981).

151. FELIX S. COHEN, HANDBOOK OF FEDERAL INDIAN LAW 221 (The Michie Co. 1982 ed.).

152. Cherokee Nation v. Georgia, 30 U.S. 1, 17 (1831) (Although the case merely concluded that the Supreme Court lacked original jurisdiction in a suit brought by a tribe against a state, statements by Justice Marshall are considered the source of the trustee doctrine. Tribal nations may "be denominated domestic dependent nations. . . . Their relation to the United States resembles that of a ward to his guardian.").

153. Cohen, *supra* note 146 at 220.

154. *See, e.g.*, Part I of thesis; Harold Shepard, *Conflict Comes to Roost! The Bureau of Reclamation and the Federal Indian Trust Responsibility*, 31 ENVT'L. L. 901, 920 (2001) (describing the Klamath Basin conflict).

155. Shepard, *supra* note 149, at 910 ("At a minimum, the government is subject to standard trust law provisions in carrying out its fiduciary

become apparent in the next section, the United States Supreme Court does not always agree; however, in the specific conflict discussed in the following paragraphs the fiduciary obligation did allow the Tribe to prevail.

Relying on the fiduciary obligation by the United States to tribes, the Pyramid Lake Paiute filed suit against the United States in 1972 challenging BOR's Operating Criteria and Procedures ("OCAP"), which called for diversion of surplus Reclamation water from the Truckee River to the Carson River Basin and asserting that the OCAP should be set aside.[156] The court agreed, concluding that "[i]n order to fulfill his fiduciary duty, the Secretary must insure, to the extent of his power, that all water not obligated by court decree or contract with the District goes to Pyramid Lake."[157]

Although this was a substantial victory for the Tribe, it was not the last word on fiduciary duty. The concept reappeared when the Tribe and the United States on its behalf sought to chip away at the decreed rights. To do so, they once again asserted the reserved water rights of the Tribe.

2. Reserved Water Rights

State law generally governs the allocation of water for use on private land and on public land that has not been reserved for a specific purpose.[158] However, the federal government may reserve water under federal law and, in doing so, exempt it from appropriation under state law.[159] In 1908 the United States Supreme Court held that the federal government reserved water by implication when it reserved land for the Fort Belknap Indian Reservation in Montana, as water was necessary to fulfill the agricultural purposes of that Reservation.[160]

duty, which have been described to include 1) 'good faith and utter loyalty to the best interest of the beneficiary' and 2) 'exercise [of] such care and skill as a man of ordinary prudence would exercise in dealing with his own property.'" [citations omitted])

156. *Morton*, 354 F. Supp. at 254. The OCAP plan to divert 378,000 acre-feet at Derby Dam was published at 37 Fed. Reg. 19,838 on November 1, 1972.

157. *Morton*, 354 F. Supp. at 256-258.

158. California Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 158 (1935) (holding that the effect of the 1866 Mining Act as amended in 1870, the 1877 Desert Lands Act, and the 1891 Act governing right-of-way for canals and reservoirs for public lands and reservations, was to sever the water right from the public land leaving it available for appropriation under local law); *See also* United States v. Rio Grande Irrigation Co., 174 U.S. 690, 706 (1899) (stating with respect to the same Acts that "the obvious purpose of Congress was to give its assent, so far as the public lands were concerned, to any system, although in contravention to the common law rule [of riparian rights], which permitted the appropriation of those waters for legitimate industries"); *See also* California v. United States, 438 U.S. 645, 674 (1978) (interpreting Section 8 of the Reclamation Act to require appropriation of water for Reclamation projects to comply with the substance as well as the procedure of state law unless the state law is inconsistent with a congressional directive); *Cf.* Federal Power Comm. v. Oregon 349 U.S. 435, 448 (1955) (also known as the Pelton Dam case, holding that the same Acts do not apply to reserved land, only to public land defined as land subject to private appropriation and disposal under public land laws).

159. Winters v. United States, 207 U.S. 564, 577 (1908).

160. *Id.* at 576.

Federal law defines the volume and scope of reserved water rights.[161] Determinations are made based on the historic documents associated with a treaty, executive order, or statute creating the reservation.[162] The purpose for establishing the reservation guides the determination of the quantity of water reserved.[163] Courts generally focus analysis of reserved water rights on either agricultural or fisheries purposes.[164] Although tribes have asserted a "homeland" purpose, courts have often rejected this approach,[165] either overtly or by implying that an allotment of reserved water for agriculture is sufficient to meet a homeland purpose.[166] Recently, the Arizona Supreme Court departed from this general approach and adopted the interpretation that Indian reservations in general have a homeland purpose.[167] Despite the predominant recognition of agricultural reserved water rights, courts have recognized reserved water rights for fisheries where a tribe has a historic reliance on the fishery or where the documents establishing the reservation point to the importance of the fishery for the particular tribe.[168]

Reserved water rights for the Pyramid Lake Paiute Tribe were asserted by the United States in the Orr Ditch litigation discussed above.[169] The United States sought reserved water rights solely for irrigation on the Reservation.[170] The Orr Ditch litigation spanned the period of

161. Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 571 (1983); Cappaert v. United States, 426 U.S. 128, 145 (1976); Colorado River Water Conservation Dist. v. United States, 424 U.S. 800, 813 (1976); United States v. District Court for Eagle County, 401 U.S. 520, 526 (1971).

162. Colville Confederated Tribes v. Walton, 647 F.2d 42, 47 (9th Cir. 1981) ("To identify the purposes for which the Colville Reservation was created, we consider the document and circumstances surrounding its creation, and the history of the Indians for whom it was created. We also consider their need to maintain themselves under changed circumstances.").

163. United States v. New Mexico, 438 U.S. 696, 700 (1978); *Cappaert*, 426 U.S. at 141; *Winters*, 207 U.S. at 576.

164. *See e.g.*, Arizona v. California, 373 U.S. 546, 600 (1963) (accepting the conclusion of the Special Master that quantification of the water necessary to irrigate the practicable irrigable acreage of five reservations is an appropriate method to determine the water necessary for present and future needs); *Winters*, 207 U.S. at 576 (holding that the Fort Belknap treaty of May 1, 1888, was intended to change the habits of the Tribes into "pastoral and civilized people," and thus, reserving water for that purpose).

165. *In re* the General Adjudication of all Rights to Use of Water in the Big Horn River System, 753 P.2d 76, 94-97 (Wyo. 1988) (rejecting the finding of the Special Master that treaty language stating "[t]he Indians herein named agree . . . they will make said reservations their permanent home," indicated that a primary purpose of the Reservation was to provide a permanent homeland).

166. *Walton*, 647 F.2d at 47-48 (holding that "one purpose for creating the reservation was to provide a homeland for the Indians to maintain their agrarian society" and then concluding that the amount of water necessary to irrigate all practicably irrigable acreage is the appropriate measure of water for that purpose).

167. *In Re* The General Adjudication of All Rights to Use Water in the Gila River System and Source, 35 P.3d 68 (Ariz. 2001).

168. *See e.g.*, United States v. Adair, 723 F.2d 1394, 1410 (9th Cir. 1984) (finding that the continuation of traditional hunting and fishing was a primary purpose of the reservation and that water was reserved for this purpose); Walton, 647 F.2d at 48 (finding that one purpose of the reservation was to preserve and replace fishing grounds).

169. Nevada v. United States, 463 U.S. at 116.

170. *Id.* at 117.

1913 to 1944, and fairly early it became clear that diversions to the Carson Basin were reducing lake levels and threatening the survival of the Pyramid Lake fishery.[171]

In 1921, the Acting Commissioner of Indian Affairs and the Reno Indian Agency debated their obligation to seek additional reserved water rights to preserve the fishery.[172] The Acting Commissioner concluded that while the fishery was of mere local importance, the development of irrigated farmland in the arid West was of national concern and must take precedence.[173] The final Orr Ditch Decree awarded the tribe reserved water rights for the irrigation of only 5875 acres.[174]

The level of Pyramid Lake and its unique fishery continued to decline. On December 21, 1973, the United States filed suit in federal court seeking to open the Orr Ditch Decree to provide "'sufficient waters from the Truckee River [for] the maintenance and preservation of Pyramid Lake [and for] maintenance of the lower reaches of the Truckee River as a natural spawning ground for fish.'"[175] The tribe was permitted to intervene.[176]

The United States Supreme Court concluded that the Orr Ditch litigation already allowed consideration of the full measure of the tribe's reserved water right, and that the doctrine of *res judicata* precluded the assertion of the new claim.[177] The Court's ruling in *Nevada v. United States* is a landmark decision for two reasons. First, it meant that assertion of reserved water rights could not reverse the decline of one of the most unique and spectacular fisheries in the western United States;[178] and second it established the standard for the fiduciary duty of the Untied States toward Indian tribes when faced with conflicting federal interests. The decline of the fishery is discussed above. The fiduciary duty warrants further discussion.

171. United States v. Truckee-Carson Irrigation District, 649 F.2d at 1293.

172. *Id.*

173. *Id.* (The Acting Commissioner wrote "that his office was 'disposed to do everything it can to protect the fish, not only for the benefit of the Indians, but of the white population as well, so far as consistent with the larger interests involved in the proposition, having to do with the reclamation of thousands of acres of arid and now useless land for the benefit of the country as a whole.'")

174. *Nevada v. United States*, 463 U.S. at 117, TROA, *supra* note 8, at 3-19.

175. *Nevada v. United States*, 463 U.S. at 119.

176. *Id.* at 118.

177. *Id.* at 144. Of interest in considering the 1990 Settlement Act is the fact that the Orr Ditch litigation addressed only water use in Nevada. In 1981 the Tribe sued California asserting reserved water rights for Pyramid Lake. Pyramid Lake Paiute Tribe v. California, No.Civ. S-81-378 RAR (E.D. Cal. 1981); *see also* Kramer, *supra* note 39, at 1353. The case is on hold pending the successful negotiation and implementation of the 1990 Settlement Act. *Id.* at 1354. If pursued successfully, the Tribe's early priority date for instream flows could preclude all consumptive use in the Truckee Basin in California. *Id.* at 1366.

178. *See e.g.*, Nevada v. United States, 463 U.S. at 114 (describing the 1844 journal entries of John C. Fremont in reference to the fishery).

3. The Fiduciary Duty of the United States to the Pyramid Lake Paiute Tribe—Revisited

When faced with the clear evidence that the United States chose development of the Newlands Project over preservation of the treaty rights of the Pyramid Lake Paiute Tribe, the United States Supreme Court had to define the fiduciary obligation of the United States toward a tribe in light of conflicting federal interests. In doing so, the Court balked. The Court concluded that when Congress asks "the Secretary of the Interior to carry water on at least two shoulders . . . the Government cannot follow the fastidious standards of a private fiduciary, who would breach his duties to his single beneficiary solely by representing potentially conflicting interests without the beneficiary's consent."[179] In short, nothing in the treaty obligations of the United States to a tribe prevents the United States from making policy decisions that abrogate those rights. The tribe, of course, may seek compensation, but not water.[180]

Nevertheless, the Court's ruling in *Nevada v. United States* did not call into question the earlier district court ruling allocating only surplus water (not water subject to decreed water rights) to Pyramid Lake. Subsequent efforts to enforce the district court ruling that the fiduciary duty obligates the allocation of surplus water to Pyramid Lake were successful. Regulations establishing a maximum diversion at Derby Dam of 288,129 acre-feet in the aftermath of the OCAP litigation were upheld when challenged by the irrigation district.[181] However, surplus water alone would not have been sufficient to reverse the decline of Pyramid Lake were it not for the new-found national interest in the preservation of species, a goal to be accomplished through implementation of the ESA.

4. The Endangered Species Act

The recognition that water development extracts an enormous cost from natural systems came late in the process of redesigning western rivers.[182] Unlike the human impact on any other ecosystem type, humans can destroy an entire riverine community with a single act—by building a dam or diverting the flow of a river.[183]

The Biological Resources Division of the United States Geological Survey considers freshwater fish to be the single most endangered vertebrate group in the United States.[184] Recognition of the problem has come to the forefront since passage of the ESA.[185] Two-thirds of the

179. *Id.* at 128.

180. *Id.* at 144 n. 16.

181. Truckee-Carson Irrigation District v. Secretary of the Department of the Interior, 742 F.2d 527, 532 (9th Cir. 1984). The OCAP litigation is discussed *infra* note 152.

182. Colby, McGinnis, and Rait, *supra* note 92, at 761 (1991) (noting that prior appropriation reallocated water from natural systems to consumptive use creating environmental externalities).

183. REISNER, *supra* note 41, at 118 ("the desert suffers improvement at a steep price, and the early Reclamation program was as much a disaster as its dams were engineering marvels")

184. Holly Doremus, *Water, Population Growth, and Endangered Species in the West*, 72 U. COLO. L. REV. 361, 366 (2001).

185. The Endangered Species Act (ESA), 16 U.S.C. §§ 1531 – 1544 (2003).

native fish in the Great Basin are either listed under the ESA or considered of concern by the FWS.[186] Studies show a strong correlation between the location of listed species and the water sources for irrigated agriculture.[187]

Not surprisingly, the first major battle to determine Congressional intent in applying the ESA was between a dam and a fish.[188] In a stroke of the pen, the United States Supreme Court gave us the full measure of the change in national interest that had occurred since the early 1900s. Where, originally, fish were dismissed as a mere local concern compared to the national interest in Reclamation development for irrigation,[189] by 1970 this had clearly changed.[190] A brief background on the ESA and how it may affect the operation of a federal Reclamation project is useful here to present the full scope of tools available in the Truckee River Basin to negotiate a solution.

186. Doremus, *supra* note 179, at 367; *see also* Michael Moore, Aimee Mulville, and Marcia Weinberg, *Water Allocation in the American West: Endangered Fish Versus Irrigated Agriculture*, 36 NAT. RESOURCES J. 319, 321 and 328 (1996). 68 fish species are listed under the ESA in the West. Of those, 50 have agriculture listed as a factor in their decline.

187. Moore, Mulville, and Weinberg, *supra* note 181, at 338; *see also* Doremus, *supra* note 179, at 367 (noting that water development is second only to the introduction of non-native species in threatening native fish).

188. *See*, TVA v. Hill, 437 U.S. 153 (1978) (approving an injunction against completion of Tellico Dam to protect the habitat of the endangered snail darter); *see also* Doremus, *supra* note 179, at 378 (characterizing TVA *v. Hill* as a case between the ESA and water development).

189. *See, e.g.*, United States v. Truckee-Carson Irrigation District, 649 F.2d at 1293 (discussing the response of the Acting Commissioner of Indian Affairs in 1922 that the United States seek water for fisheries in adjudication of the Truckee River. The Acting Commissioner's comments are reproduced at note 167 *infra*.); *see also* TRUCKEE RIVER ATLAS, *supra* note 6, at 48 *quoting* the First Annual Report of the Reclamation Service, 1903:

> To remedy this evil [that is, poor planning for water supply and water rights when subdividing public lands for homesteading], so that the remaining public lands will furnish the greatest possible number of homes, is an object worthy of the sustained effort of enlightened and patriotic citizens. . . . The development of water for irrigation is a matter of concern to all citizens of the Untied States, since they are the great landowners, and, as such are, or should be, interested to see that their lands are put to the best uses. It is their duty also to guard these vast tracts, the heritage of their children. . . . Unquestionably it is a duty of the highest citizenship to provide a hundred homes for independent farmers . . .. The pioneer settlers on the arid public domain chose their homes along streams from which they could themselves divert the water to reclaim their holdings. Such opportunities are practically gone. There remain, however, vast areas of public land which can be made available for homestead settlement, but only by reservoirs and mainline canals impracticable for private enterprise. These irrigation works should be built by the National Government.

190. *See* ESA § 2(a)(1)-(3), 16 U.S.C. § 1531(a)(1)-(3) (2003):

> The Congress finds and declares that—
>
> (1) various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation;
>
> (2) other species of fish, wildlife, and plants have been so depleted in numbers that they are in danger of or threatened with extinction;
>
> (3) these species of fish wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people;

see also Doremus, *supra* note 179, at 364 (noting a shift in social values to viewing nature as a good itself).

Section 7 of the ESA prohibits federal agencies from taking action that is likely to jeopardize the continued existence of a listed species or to result in destruction or modification of habitat considered critical to the conservation of the listed species.[191] A consequence of western reliance on federal development of water is that the federal operation of those projects is subject to the requirements of Section 7 of the ESA.[192]

Under section 7 of the ESA, the agency taking action must consult with the listing agency, which for terrestrial species is the FWS.[193] The Secretary, acting through the FWS, must provide a biological opinion concerning the impact of the action on any listed species and the measures that might be taken to avoid jeopardizing a listed species.[194] Although it remains up to the agency taking the action whether to adopt the suggested measures, the ESA's absolute prohibition against jeopardizing the continued existence of a species could subject the proposed action to a valid challenge if the agency does not follow the recommendations in the biological opinion.[195]

Recent events in the Klamath Basin of Oregon and California illustrate how willing the Secretary is to use her authority to include BOR modifications to protect an endangered species.[196] Biological Opinions issued by FWS and the National Marine Fisheries Service ("NMFS") found that proposed operation of the Klamath Basin Reclamation Project in a drought year would result in jeopardy to the Oregon/California Coast coho salmon, listed by NMFS as threatened in 1997,[197] and the Lost River and shortnosed suckers, listed as endangered by FWS in 1988,[198] and recommended measures to maintain higher lake levels and instream flow by reducing delivery of irrigation water to project land.[199] Both the science

191. ESA § 7(a)(2), 16 U.S.C. § 1536(a)(2) (2003); *see also* ESA § 4, 16 U.S.C. § 1533 (2003) (covering listing of species and designation of critical habitat); and ESA § 2(5)(6), (20) (2003), 16 U.S.C. § 1531(5)(6), (20) (2003) (defining critical habitat, endangered species, and threatened species respectively).

192. O'Neil v. United States, 50 F.3d 677 (9th Cir. 1995) (rejecting suit for breach of contract by irrigators against the Bureau of Reclamation when Reclamation curtailed use to conserve listed fish); Moore, Mulville and Weinbert, *supra* note 181, at 334; Doremus, *supra* note 179, at 380-382 (noting that Reclamation operation of federal projects is subject to both the duty to conserve species and the duty to avoid jeopardy of species under Section 7 of the ESA); ESA § 7, 16 U.S.C. § 1538 (2003), preventing "take" of endangered species by private or public entities is also relevant, but is not at issue in the litigation discussed here.

193. ESA § 7(b), 16 U.S.C. § 1536(b) (2003).

194. ESA Sec. 7(b), 16 U.S.C. § 1536(b).

194. *See, e.g.*, TVA v. Hill, 437 U.S. 153 (1978).

195. Andy Dworkin, *Farmers Fight for Water Intensifies*, The Oregonian, Friday July 6, 2001.

196. 62 Fed. Reg. 24588 (1997). The National Marine Fisheries Service implements the ESA for marine species including anadromous fish such as the coho salmon.

198. 53 Fed. Reg. 27130-134 (1988).

199. United States Fish and Wildlife Service 2001 Biological/Conference Opinion Regarding the Effects of Operation of the Bureau of Reclamation's Klamath Project on the Endangered Lost River Sucker (*Deltistes luxatus*), Endangered Shortnose Sucker (*Chasmistes brevirostris*), Threatened Bald Eagle (*Haliaeetus leucocephalus*), and Proposed Critical Habitat for the Lost River/Shortnose suckers, Klamath Falls, OR, available at http://klamathfallsfwo.fws.gov; National Marine Fisheries Service, 2001, Biological Opinion. Ongoing Klamath Project Operations, available at http://swr.ucsd.edu/psd/ kbo.pdf.

leading to the Biological Opinions and the legal basis for reduction in flows have been attacked, stalemating negotiations.[200] The desire to avoid stalemates such as that encountered in the Klamath River Basin provides a strong incentive to take measures to recover listed species while the opportunity remains within the control of water users in the basin.[201] This incentive ultimately succeeded in the Truckee River Basin, but not without a preliminary round of litigation.

The 226,500 acre-foot capacity Stampede Reservoir was completed on the Little Truckee River in 1970,[202] only three years before the 1973 passage of the ESA.[203] The 1955 Washoe Project Act authorized construction of the reservoir and sale of the water for M&I.[204] To address objections by the Pyramid Lake Paiute Tribe to construction of the reservoir, the Secretary of the Interior promised releases of water for Pyramid Lake and postponed contracting for sale of water for M&I purposes pending resolution of water rights issues.[205] Meanwhile, the cui-ui and LCT were listed under the ESA.[206] This led to a determination by the Secretary in 1969 that he "no longer intended to operate Stampede for M&I purposes and that until legal rights to the water were settled he would operate it only for 'flood control, recreation, and fish and wildlife benefits . . . .'"[207]

This being the Truckee River Basin, suit followed. The suit was initiated by the Carson-Truckee Water Conservancy District, representing the municipal interests in the Reno-Sparks area.[208] The rulings that followed relied on a unique feature of the Washoe Project Act, which, unlike most Reclamation authorizations,

200. *See* Interim Report from the Committee on Endangered and Threatened Fishes in the Klamath River Basin, *Scientific Evaluation of Biological Opinions on Endangered and Threatened Fishes in the Klamath River Basin* 2-3 (National Academy Press 2002) (questioning the scientific basis for the measures recommended by the FWS and NMFS); and Klamath Irrigation Dist. v. United States, U.S. Fed. Cl. Ct. No. 01-591L (filed 2001) (seeking compensation under the Fifth Amendment for taking of water rights).

201. *See, e.g.*, Moore, Mulville and Weinberg, *supra* note 181, at 346-349 (advocating a proactive approach by Reclamation to conserve species and minimize the cost and disruption associated with ESA listing).

202. TROA, *supra* note 8, at 1-9.

203. Pub. L. No. 93-205, Dec. 28, 1973; ESA, 16 U.S.C. § 1531 – 1544 (2003).

204. 43 U.S.C. § 614 (2003).

205. Carson-Truckee Water Conservancy District v. Watt, 537 F. Supp. 106, 109 (D.C. Nev. 1982) *rev'd* in Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984). For the pending water rights dispute, *see* Nevada v. United States, 463 U.S. 110.

206. *Id.*; 15 C.F.R. § 17.11 (2003).

207. *Carson-Truckee Water Conservancy District*, 537 F. Supp. at 109.

208. The case was bifurcated:

Carson-Truckee Water Conservancy District v. Watt, 537 F. Supp. 106 (D. Nev. 1982) addressed whether under the Washoe Project Act the Secretary is required to sell any water not needed for listed species or the fiduciary duty to the Tribe. The district court answered yes. This portion was reversed in Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984).

Carson-Truckee Water Conservancy District v. Watt, 549 F. Supp. 704 (D.C. Nev. 1982) addressed how much of the water was needed for listed species and the fiduciary duty to the Tribe and concluded that all the water was required for listed species until they could be removed from listing. This portion was upheld in Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984).

allowed sale of water for specified purposes without requiring the issuance of contracts for sale of water prior to construction of the reservoir.[209] Had this not been the case, the court might have found a conflict between the congressional prohibition of federal actions that jeopardize listed species and a congressional requirement to sell water. However, under this unique structure of the Washoe Project Act, the court upheld the Secretary's decision to allocate all the water to conserve listed species.[210]

Of further importance to future operation of reservoirs in the Truckee River Basin were the district court's and the Ninth Circuit's conclusions that the Secretary's obligations under the ESA are not merely to avoid jeopardy to listed species, but also to conserve or recover those species.[211] As a result of this decision, Stampede Reservoir has been operated since 1972 solely for flood control and fisheries purposes.[212]

Tribes have fought hard to win victories to obtain surplus water, reservoir releases, and fish passage, and these have had a collateral benefit to the Tribe: It is quite clear that the persistence and focus of the Tribe since 1970 has gained them a voice at the table.[213] There is no better illustration of this than the fate of the interstate compact negotiated between California and Nevada for allocation of the waters of the Truckee River.

Key to failure of the Compact was the fact that it stated "that federal uses of water would be charged to the state where the use occurs" and that ratification of the compact included congressional approval of a provision binding the United States and the Tribe to the compact,[214] thus precluding any claim by the Pyramid Lake Paiute against California for reserved water rights.[215] Congress' failure to approve the Compact turned on opposition by the United States Department of Justice on behalf of the Pyramid Lake Paiute Tribe.[216] The rising voice of the

209. *Carson-Truckee Water Conservancy District*, 741 F.2d at 260.

210. *Id.* at 261. Note that because the lower court concluded that all of the water was necessary for the listed species, it did not reach the issue raised in the earlier OCAP litigation concerning water to fulfill the fiduciary duty to the Tribe. Carson-Truckee Water Conservancy District v. Watt, 549 F. Supp. at 711.

211. Carson-Truckee Water Conservancy District v. Clark, 741 F.2d at 261, *affirming* Carson-Truckee Water Conservancy District v. Watt, 549 F. Supp. at 710; *see also* ESA § 7(a)(1), 16 U.S.C. §1536(a)(1) (2003), (requiring "Federal agencies . . . to utilize their authorities . . . by carrying out programs for the conservation of endangered species and threatened species . . ."; and ESA § 3(3), 16 U.S.C. § 1532(3) (defining "conserve" or "conservation" to "mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the ESA] are no longer necessary."); *see also* Doremus, *supra* note 179, at 380-382 (noting that the duty to conserve listed species under the ESA is a separate obligation imposed on federal agencies from the duty to avoid their jeopardy).

212. Kramer, *surpa* note 39, at 1357.

213. Jeremy Pratt, *Truckee-Carson River Basin Study* S-1 *in* Western Water Policy Review Advisory Commission, River Basin Studies, *available at* http://www.den.doi.gov.wwprac/reports/atruckee/htm (noting that there was a "new balance of power forged by tribal litigation" in the basin).

214. *Id.* at 1354 (quoting language of Interstate Compact).

215. *See supra* note 172.

216. Kramer, *supra* note 39, at 1364.

tribe assured its participation in subsequent negotiations.

But the story does not end here. The combined effect of the United States Supreme Court ruling in *Nevada v. United States* (locking in place the Orr Ditch Decree) and the Ninth Circuit ruling in *Carson-Truckee Water Conservancy District v. Clark* (giving use of water to recover listed species precedence over new consumptive water use) was to shift the burden of remedial efforts to repair some of the damage to the ecosystem of the Truckee River Basin caused by the water development to those who came late to the basin—the urban dwellers seeking new appropriations.[217]

C. Poker

The early twentieth century saw an explosion in the development of western rivers for irrigation under the direction of the BOR (formerly the Reclamation Service). This development arose as a matter of national policy. Despite considerable rhetoric touting state control over western water,[218] there has been a strong, and in many basins dominant, federal role in western water development and management throughout the modern history of the West.[219] The 1902 Reclamation Act,[220] for example, evinced a national policy to develop western rivers for irrigation of small family farms.[221]

The Reclamation Act resulted in the replumbing of western rivers with construction of 347 storage dams and 62,000 miles of canals and distribution laterals to serve 9.2 million acres of arid land.[222] During the early 1900s, roughly half the population in the West was employed in farming and ranching.[223] Today that statistic is less than 5 percent, with urban service and trade sectors dominating employment patterns in the western economy.[224] These changes are not unique to the West. The pressure of growing urban demand is felt globally. Estimates indicate that 1.2 billion people experience a shortage of

217. *See* Doremus, *supra* note 179, at 408 (noting that although ongoing operation of federal facilities places some obligation on existing water use to prevent harm to listed species, latecomers bear the brunt of the cost).

218. *See, e.g.*, Statement of Senator Michael Crapo of Idaho on his proposed amendment to strike a water Conservation Amendment from the Agriculture, Conservation and Rural Enhancement Act of 2001 (Feb. 7, 2002) S.469 ("Today states have sovereignty over the allocation, management, and use of water and water rights, and this [amendment] is an unprecedented move of the Federal Government into the management, allocation, and use of water rights . . . .").

219. Getches, *supra* note 5, at 6. It should be noted that Section 8 of the Reclamation Act does require appropriation of water pursuant to state law. Reclamation Act, § 8, 32 Stat. 388 (1902) (codified as amended at 43 U.S.C. § 383 (2000). However, state law may not impose conditions on a federal project that conflict with congressional intent in authorizing the project. California v. United States, 438 U.S. 645 (1978).

220. Reclamation Act at 43 U.S.C. § 371, selected sections of § 526.

221. United States v. Tulare Lake Canal Co., 535 F.2d 1093, 1119 (9th Cir. 1976) ("It is a basic goal of the reclamation laws to create family-sized farms in areas irrigated by federal projects.").

222. Reed D. Benson, *Whose Water is It? Private Rights and public Authority Over Reclamation Project Water* 16 VA. ENVT'L. L. J. 363, 365 (1997); Getches, *supra* note 5, at 14; Wilkinson, *supra* note 1, at 248.

223. *Gila V*, 35 P.3d at 76; Doremus, *supra* note 179, at 364.

224. *Id.*; *see also* Pratt, *supra* note 208, at S-1 (noting that the Truckee River Basin is currently in transition to urban water uses and greater recognition of tribal and fish and wildlife needs).

potable water.[225] This change in demographics has profound implications for water demand. Currently agriculture represents 91 percent of water consumption in the West.[226] This means that 91 percent of developed water serves 5 percent of the population of the western United States' economic activities.[227]

In the years since passage of the Reclamation Act, the Reno-Sparks area (also referred to as Truckee Meadows) has gone from a predominantly agricultural area to one of the fastest growing urban areas in the United States.[228] Population in 1990 reached 242,550.[229] Employment is driven by Nevada's booming gaming economy.[230]

Sierra Pacific Power Company ("Sierra Pacific") serves the water needs of the Reno-Sparks area.[231] Under the Orr Ditch Decree, Sierra Pacific has a water right for 40 cubic feet per second/28,959 acre-feet per year from the Truckee River that is superceded only by the agricultural reserved water rights of the Pyramid Lake Paiute Tribe.[232] However, current M&I demand is for 61,000 acre-feet per year and the population continues to grow.[233]

The simple answer to the water needs created by this change in demographics is to reallocate water from agriculture to urban needs. Unfortunately, reallocation is not so simple. First, attempts at reallocation run headlong into the law protecting existing use of water as a right. Second, urban needs tolerate shortage far less than most agricultural needs, rendering a simple transfer of an acre-foot of irrigation water to an acre-foot of urban use an incomplete solution.

1. The Prior Appropriation Barrier

Use rights to water in the West are generally obtained pursuant to state law.[234] The doctrine of prior appropriation is followed in some form by most western states.[235] In practical terms, an appropriative right has certain key attributes

225. ARUN P. ELHANCE WATER SCARCITY IN THE THIRD WORLD, IN HYDROPOLITICS IN THE THIRD WORLD: CONFLICT AND COOPERATION IN INTERNATIONAL RIVER BASINS 8 (United States Institute of Peace Press 1999).

226. Moore, Mulville, and Weinberg, *supra* note 181, at 321.

227. The Truckee River Basin reflects this imbalance with 82 percent of the water going to meet agricultural needs which represent <1 percent of the basin's economy. Dan Tarlock, *The Creation of New Risk Sharing Water Entitlement Regimes: The Case of the Truckee-Carson Settlement*, 25 ECOL. L. Q. 674, 677 (1999).

228. TROA, *supra* note 8, at 3-182. Farm income in Washoe County in 1992 was approximately $1.6 million, non-farm income was approximately $6.9 billion. *Id.* at 3-188.

229. TROA, *supra* note 8, at 3-186.

230. *Id.* at 3-182.

231. *Id.* at 3-20. The service of water to the Reno-Sparks area was transferred to the Truckee Meadows Water Authority in 2001. Because references to Sierra Pacific in the draft TROA have not been changed, this article will continue to refer to Sierra Pacific as the provider of municipal water.

232. *Id.* at 3-21.

233. *Id.* at 3-20.

234. *See infra* note 153.

235. HUTCHINS, *supra* note 99, at Vol. I, Chap. 7, 226 and Vol. II, Chap. 10, 6-14. California follows a dual system of riparian and appropriative rights. Lux v. Haggin, 10 P. 674 (1886). However, for purposes of this paper, the interaction between junior and senior appropriative rights and appropriative rights and instream use is of primary interest.

236. *See, e.g.*, MONT. CODE ANN. § 85-2-301(1)

that become critical in times of drought: First, a water right exists to the extent of its application of water to a beneficial use.[236] Second, in times of shortage, allocation occurs on the basis of temporal priority—i.e., the date on which the water right was first developed.[237] The right of the earliest appropriator on a stream is satisfied first. Junior appropriators take remaining water. Shortage is not shared. During periods of drought—a frequent occurrence in the West where water supply fluctuates—those who came late to the basin are left with nothing.

Although characterized by some as a system designed purely for the purpose of risk allocation,[238] substantial litigation has focused on the nature of the rights created, giving rise to the concern that reallocation of water is a Fifth Amendment taking of a private property interest.[239] As discussed above in reference to the Orr Ditch Decree, regardless of the property interest created, existing allocation has presented a substantial barrier to reallocation of water in the Truckee River Basin by the federal government.[240] Nevertheless, despite the barriers imposed by existing law, private arrangements are cropping up throughout the West to transfer water from agricultural to urban uses.[241]

(2001).

237. *See, e.g.*, MONT. CODE ANN. § 85-2-401, 406(1) (2001).

238. Tarlock, *supra* note 222, at 689.

239. *See, e.g.*, Tulare Lake Basin Water Storage District v. United States, 49 Fed. Cl. 313, 318-319 (2001); Melinda Harm Benson, *The Tulare Case: Water Rights, The Endangered Species Act, and the Fifth Amendment*, 32 ENVTL. LAW 551, 561.

240. *See*, Nevada v. United States, 463 U.S. at 111 ("[T]he Government is not at liberty to simply reallocate the water rights decreed to the Reservation and the Project as if it owned those rights.")

241. California established a drought water bank for transfer of water through an intermediary —the State Department of Water Resources—during critical shortage. The bank was established initially on an emergency basis after five years of drought (E.O. W-3-91), and later passed into state law (S.B. 970, April 20, 1999). *See also* Andrew P. Tauriainen, *California's Evolving Water Law: The Water Rights Protection and Expedited Short-Term Water Transfer Act of* 1999, 31 MCGEORGE L.REV. 411 (2000); Dellapenna, *supra* note 4, at 360-362, for a discussion of the following "water banks":

Arizona has established a "water bank" to provide for replacement of pumped groundwater with water from the Central Arizona Project. ARIZ. REV. STAT. §§ 45-2401 to 45-2471 (West, WESTLAW through 45th Legislature 2001).

Texas and Idaho have established "water banks" to allow the "depositing" of unused water with a state entity, thus avoiding forfeiture, and the sale or leasing of the water to another use by the state entity. TEX. WATER CODE §§ 15.701 to 15.708 (West, WESTLAW through Legislative Sess. 2001), and IDAHO CODE §§ 42-1761 to 42-1764 (West, WESTLAW through 2000 Cummulative Supp.).

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To meet growing demand, Sierra Pacific had followed two avenues prior to the 1990 Settlement Act. First, Sierra Pacific developed approximately 12,340 acre-feet of groundwater.[242] However, some of this groundwater is so saline that it must be mixed with Truckee River water prior to use.[243] Sierra Pacific supplies the remaining water need in Reno-Sparks area by purchasing and retirement of agricultural lands.[244] 40,910 acre-feet have been transferred from agriculture to M&I use.[245] The result is that compared to 1960—when 48,500 acres were irrigated in the Truckee Meadows area—by 1990 that figure had declined to 31,100 acres.[246] Sierra Pacific intends to continue to pursue this avenue, and it is estimated that by 2020 irrigated agriculture in the Truckee Meadows will be half of its 1960 level.[247] Future purchases will proceed under the conservation and metering requirements of the 1990 Settlement Act discussed below.[248]

With an economy changing from farming to gaming, it is likely there will be plenty of willing sellers to meet the urban needs of Reno and Sparks. However, the biggest challenge to meeting those needs is not the availability of water rights, but the availability of water during drought to satisfy those rights.

2. The Tolerable Shortage Problem

Urban needs tolerate almost no shortage;[249] whereas certain agriculture, particularly alfalfa and pasturage, can survive substantial shortage.[250] Less water simply means less crop yield.[251] Because water supply in the West varies both from year to year and between seasons, Reclamation projects built to serve agriculture were generally designed to accommodate "tolerable shortage."[252] The approach recognizes the huge cost and low return from building storage sufficient to carryover water to provide full service irrigation in every year. Instead, a balance is achieved between cost and yield.[253]

242. TROA, *supra* note 8, at 3-21 (Sierra Pacific may increase pumping during drought to recover up to 14,460 acre-feet of groundwater.).

243. Colby, McGinnis, and Rait, *supra* note 93, at 765.

244. TROA, *supra* note 8, at 3-20.

245. *Id.* at 3-20.

246. *Id.* at 3-188.

247. *Id.* at 3-188.

248. Colby, McGinnis, and Rait, *supra* note 93, at 769.

249. *See, e.g.*, MSE-HKM Engineering, *Municipal, Rural and Industrial Water Supply System Needs Assessment, Rocky Boy's Indian Reservation, prepared for* the United States Bureau of Reclamation 31 (January 1996).

250. Telephone interview with Bill Greiman, Agricultural Engineer, Montana Reserved Water Rights Compact Commission, Helena, Montana, June 25, 2002. For example, the Milk River Project in Montana, serving primarily alfalfa and irrigated pasture has survived almost 100 years on shortage estimated to occur in 5 out of 10 years. *Summarizing the Milk River Water Supply Study, in* Milk River Valley Lands, U.S. Bureau of Reclamation Report, app. 11-12 (July, 1990).

251. Telephone interview with Bill Greiman, Agricultural Engineer, Montana Reserved Water Rights Compact Commission, May 1, 2002.

252. Telephone interview with Bill Greiman, Agricultural Engineer, Montana Reserved Water Rights Compact Commission, Helena, Montana, June 25, 2002.

253. *Id.*

Shortage is not tolerated in urban areas. Although the amount of water used by an urban population is generally a mere fraction of the agricultural need for cultivation of the same land,[254] the infrastructure necessary to assure water supply even during drought (i.e., storage) is not proportionately reduced.[255] As a result, a simple transfer of an acre-foot of irrigation water to an acre-foot of urban need may not suffice. Additional measures may be necessary to accommodate urban use during drought. The need for these measures was one of the driving forces in negotiation of the 1990 Settlement Act discussed below.

D. Fish, Tribal Power, Poker, and One More Thing—Birds

Although the focus of this paper is on the Truckee River, the construction of the Newlands Project created an interrelated ecosystem between the Truckee and the Carson Basins, albeit an artificial one. The Stillwater National Wildlife Refuge is located in the Carson Sink at the terminus of the Carson River.[256] The refuge is a wetland that serves as important migratory bird habitat on the Pacific Flyway.[257] Agreement among the TCID, the State of Nevada, and the FWS provides that return flows from the Newlands Project in the Carson Basin go to the refuge.[258] Reductions in diversions to the Carson Basin and poor quality of return flow are having a negative effect on the refuge, including documented bird and fish mortality.[259] Thus a simple dispute among two states, an Indian reservation, and an irrigation district over recreation, fisheries, drinking water, and irrigation, is complicated by competing habitat needs as the next chapter in the story of the basin unfolds.

III. Modern Solutions

The modern trend toward altering river management to meet changing needs[260] is embodied in the 1990 Settlement Act[261] and the effort to implement the Act through the pending TROA.[262] This part of the Truckee River story begins with a description of the factors that led to negotiation of the 1990 Settlement Act and concludes with an analysis of the solutions achieved in the 1990 Settlement Act and the current version of its implementing agreement—

254. Telephone interview with Bill Greiman, Agricultural Engineer, Montana Reserved Water Rights Compact Commission, May 1, 2002.

255. *See e.g.*, MSE-HKM Engineering, *supra* note 242.

256. TROA, *supra* note 8, at Frontpiece map.

257. Colby, McGinnis, and Rait, *supra* note 92, at 759.

258. *Id.* at 765.

259. *Id.* at 767; *see also* Pratt, *supra* note 208, at S-3 (noting that tribal success in litigation to increase flow of the Truckee River to Pyramid Lake has contributed to the decline of the Stillwater Marsh).

260. *See* Gleick, *infra* note 3.

261. Pub. L. No. 101-618, Title II (1990 Settlement Act), *reprinted in* TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 119.

262. The Truckee River Operating Agreement ("TROA") is currently under negotiation. Indications are that the final agreement will include similar, but more detailed solutions to those reviewed in the TROA, *supra*, note 8. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002; Telephone interview with Christine Thiel, Nevada Department of Conservation and Natural Resources, April 30, 2002.

TROA. TROA negotiations were completed in January 2003. Final issues concerned treatment of the 1935 Truckee River Agreement.[263] The current draft TROA is not yet available to the public; however, participants in negotiations indicate that the primary difference between the current draft and the 1998 TROA Draft EIS/EIR relied on in this study is the level of detail concerning the movement of water between reservoirs[264] and modifications to release schedules to accommodate interests in lake levels in the upper basin and instream flows below dams.[265] If finalized and adopted, implementation of TROA is likely to aid in the restoration of the Pyramid Lake fishery, assure a drought water supply for Reno and Sparks, and, at long last, achieve an apportionment between California and Nevada. It will not, however, end litigation in the Truckee River Basin.[266]

A. A New Beginning

It is a long and contentious history that brought the parties to the brink on which the 1990 Settlement Act was negotiated—and this paper hits only the high points. However, certain elements in this history stand out as key in setting the stage for comprehensive resolution of many of the basin's water disputes. Repetition of those elements is warranted to emphasize the role they played in creating fertile ground for settlement. These elements can best be understood in the context of what each party brought to the table:[267]

1. California's representatives were frustrated by failure to achieve congressional approval of the interstate compact.[268] As a result of that failure, Truckee River Basin water users in California faced a serious threat of losing water rights

263. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002; Telephone interview with William Bettenburg, United States Department of the Interior, Washington D.C., June 24, 2002. The 1935 Truckee River agreement altered the Floriston rates by tying them to the level of Lake Tahoe. *See, supra*, note 85.

264. Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, and Christine Thiel, Nevada Department of Conservation and Natural Resources, April 30, 2002.

265. Telephone interview with William Bettenburg, United States Department of the Interior, Washington D.C., June 24, 2002.

266. Although the 1990 Settlement Act resolved most litigation pending in 1990, at least as many suits have been filed since, most concerning the Newlands Project. The absence of TCID from the settlement means that these continuing issues will be resolved in other forums. Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, and Christine Thiel, Nevada Department of Conservation and Natural Resources, April 30, 2002; Telephone interview with Robert Pelcyger, Fredericks,k Pelcyger, and Hester, representing the Pyramid Lake Paiute Tribe, June 13, 2002.

267. This analysis of the way in which legal moves and counter moves by the parties and the operation of outside influences on the balance of power is only partially based on interviews with the parties concerning their intent. For the most part, it is the author's analysis in hindsight of how these factors, whether calculated or serendipitous, combined to set the stage for the 1990 Settlement Act.

268. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002.

(ability to use water) to the senior fishery flow water rights claimed by the tribe. In addition, due to lack of an apportionment, the California State Water Resources Control Board has been unwilling to issue permits for new water use since the 1970s.[269] California considered apportionment certainty to be key to providing a foundation on which operation of the Truckee River Basin could occur.[270]

2. Nevada's representatives were similarly frustrated with the failure of the Interstate Compact.[271] As a result of that failure, Nevada's water users in the Truckee River Basin faced the constant insecurity posed by upstream diversions. Furthermore, almost all storage relied on by Nevada is located in California. Nevada considered interstate apportionment to be its primary goal in negotiating the 1990 Settlement Act. The state also sought, to resolve major concerns regarding a drought water supply for the Reno-Sparks area and to settle litigation concerning the Newlands Project.[272]

3. The Pyramid Lake Paiute Indian Tribe might have held few cards after the United States Supreme Court refused opening the Orr Ditch Decree. However, the tribe's success on other fronts turned the tables, allowing it to bring a strong voice to the table.[273] First, the tribe was in the fortunate position of having its interest in fishery flows aligned with the new found national interest embodied in the ESA.[274] Second, the tribe had successfully asserted the fiduciary duty of the United States, and, although foreclosed on the issue of reserved water rights in Nevada for fisheries, was bringing the federal fiduciary duty to bear on the operation, management and efficiency of water use in the Newlands Project. Finally, even though the amount of water to be gained by challenging water use in California through assertion of reserved rights pales in comparison to diversions at Derby Dam, use of that water is extremely important to a very popular recreation area in California. By asserting newly reserved rights for fisheries against California, the tribe won the attention of the upstream state and guaranteed that the powerful California congressional delegation would back any settlement.

4. Sierra Pacific's urban water users had fallen last in line since they had outgrown their allocation in the Orr Ditch Decree and were being served through the

269. *Id.*

270. *Id.*

271. Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, April 30, 2002.

272. *Id.*

273. Telephone interview with Robert Pelcyger, Fredericks, Pelcyger, and Hester, representing the Pyramid Lake Paiute Tribe, June 13, 2002 (indicating that settlement would not have been possible if key issues had not been settled by litigation).

274. It is not always the case that Tribal and ESA interests will be aligned. In fact, substantial concern has been raised by tribes attempting to develop water in basins where over appropriation has already pushed species to the brink of extinction. Concern that the water budget necessary to avoid that extinction is being balanced on the back of tribes led to a June 5, 1997, Secretarial Order during the Clinton Administration addressing the issue. The Order is *described in* Charles Wilkinson, *The Role of Bilateralism in Fulfilling the Federal-Tribal Relationship: The Tribal Rights - Endangered Species Secretarial Order*, 72 WASH. L. REV. 1063 (1997).

purchase of irrigation water rights beginning in the 1940s.[275] Sierra Pacific needed a firm supply of water during drought. The discrepancy between the drought tolerance of hay fields and the drought tolerance of urban uses had come home to roost. Their inability to obtain storage in Stampede Reservoir due to the successful tribal litigation caused a realignment of interests in the basin, with Sierra Pacific forced to turn to the tribe, now in control of surplus storage, as its new partner.[276] What Sierra Pacific brought to the table was, in part, the high economic value of urban water. In addition, Sierra Pacific was the beneficiary of the Floriston rates, instream flows which did not mimic the natural flow of the river necessary for habitat. Their willingness to waive those rates became key to successful negotiations with the tribe.[277]

5. TCID initially participated in 1990 Settlement Act negotiations, but withdrew periodically when it believed that its interests were not being addressed. It is not participating in current TROA negotiations.[278] The State of Nevada has attempted to represent the interests of TCID in current negotiations, but believes the first challenge to the TROA, once finalized, will still likely come from TCID.[279] The security TCID gained when the United States Supreme Court upheld the integrity of the Orr Ditch Decree may explain its absence from the 1990 Settlement Act and TROA.[280] However, this may also belie a false sense of security. The tribe has made inroads on diversions at Derby Dam by attacking waste, inefficiency and inflated claims of acreage irrigated within the Newlands Project.[281] The absence of TCID from the table renders any solution incomplete and guarantees that conflict will continue in some venue. Nevertheless, a significant portion of the issues have been resolved. Federal representatives are determined to maintain the integrity of decreed water rights associated with the project to be one of their goals in negotiations.[282] By insuring that the legal water rights of the project are not violated, federal representatives believe

275. Colby, McGinnis, and Rait, *supra* note 92, at 778.

276. Telephone interview with Robert Pelcyger, Fredericks, Pelcyger, and Hester, representing the Pyramid Lake Paiute Tribe, June 13, 2002.

277. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002.

278. Telephone interview with Christine Thiel, Nevada Department of Conservation and Natural Resources, April 30, 2002; Acton, *supra* note 74, at 82 (noting that TCID withdrew from negotiations when it became clear that any additional water for fish or the environment would have to come from Project water).

279. Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, April 30, 2002.

280. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002, indicated that TCID withdrew from negotiation of the TROA when they felt their interpretation of the full measure of their Orr Ditch decreed rights were not being honored.

281. *See*, OCAP litigation, *supra* note 151. Litigation by the United States and the Tribe against TCID for alleged excess diversions to the Project is pending, with testimony concluding in April, 2002. Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, April 30, 2002.

282. Telephone interview with William Bettenburg, United States Department of the Interior, Washington D.C., June 24, 2002.

that, although challenges by TCID will take time, the settlement will nevertheless remain intact.[283]

6. The United States' Representatives from the Departments of the Interior and Justice have participated throughout negotiation of the 1990 Settlement Act and TROA and have taken a lead role in convening negotiations on TROA.[284] The strong contemporary federal interest in the Truckee River Basin involves: the needs of the Pyramid Lake Paiute Indian Tribe as trustee; the integrity of the federal reclamation project; the federal reservoirs; and its commitment to protecting endangered species including the cui-ui and the LCT.[285]

One more key element that sets the stage for successful negotiation of the 1990 Settlement Act is leadership—leadership in the form of Senator Harry Reid of Nevada, who is credited with using the power of his office to facilitate, supervise, and push negotiations to a final result.[286] Under Senator Reid's leadership, parties to the final agreement were assigned the task of entering separate negotiations focused on specific issues.[287] The goal was to allow resolution of issues in manageable bites and then to assemble these agreements into a comprehensive whole.[288] The resulting package included the 1989 Preliminary Settlement Agreement ("PSA") negotiated between Sierra Pacific and the tribe, addressing fishery flows and urban water supply during drought,[289] the 1990 Settlement Act resolving the interstate issues and incorporating the PSA,[290] and the TROA authorized by the 1990 Settlement Act to cover the operation of the upper basin reservoirs.[291] Furthermore, the 1990 Settlement Act provided strong incentive for the parties to move the process toward completion of the TROA by tying the validity of the 1990 Settlement Act, including funding for the tribe, interstate apportionment, and municipal storage in Stampede Reservoir to a successful negotiation of the TROA.[292] The solutions reached are discussed in the following section.

283. *Id.*

284. *Id.*

285. *Id.*

286. Reid, *supra* note 92, at 177. Representatives of California, Nevada, the Tribe, and the United States concur that the leadership of Senator Reid was key to achieving the 1990 Settlement Act. Telephone interviews with John Kramer, California Department of Water Resources, April 29, 2002, Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, April 30, 2002, and Robert Pelcyger, Fredericks, Pelcyger, and Hester, representing the Pyramid Lake Paiute Tribe, May 7, 2002; Telephone interview with William Bettenburg, United States Department of the Interior, Washington D.C., June 24, 2002 (indicating that Senator Reid remained committed to negotiations despite considerable personal political cost).

287. TROA, *supra* note 8, at 2-3.

288. *Id.*

289. *Reprinted in*, TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 119.

290. Pub. L. No. 101-618, 104 Stat. 3289 (1990), *reprinted in* TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 101.

291. Final document release pending. 1998 draft is described and analyzed in TROA, *supra* note 8.

292. Acton, *supra* note 74, at 110.

B. The Solutions

1. The Preliminary Settlement Agreement- PSA

The primary side agreement negotiated in the settlement process was the PSA, agreed to by the Pyramid Lake Paiute Tribe and Sierra Pacific on May 23, 1989.[293] The PSA required ratification by the United States,[294] an event which took place with the passage of the 1990 Settlement Act. Pursuant to the 1990 Settlement Act, the PSA still remains contingent on completion of the TROA.[295] The purpose of the PSA was for the Tribe and Sierra Pacific to reach an accommodation regarding use of non-project water in the federal reservoirs for fishery flows and to provide a drought water supply for the Reno-Sparks area.[296] The tribe held a number of cards due to its successful litigation over the use of Stampede Reservoir,[297] and the operation of the Newlands Project.[298] Sierra Pacific also held a strong hand as the beneficiary of the Floriston rates, which carried considerable water downstream, but failed to provide the flexibility in flow rate necessary to mimic an unregulated river for the purpose of spawning.[299] Thus, each party to the PSA came to the table with a great deal to offer.

The primary features of the PSA are: (1) Waiver of the Floriston rates and crediting of the water held in storage to fisheries;[300] (2) Dedication of a firm supply of water to Stampede Reservoir and storage with lesser protection in Lake Tahoe, Boca and Prosser Reservoirs to use for M&I purpose during drought;[301] and (3) Conservation requirements for M&I uses including rate structuring, metering and identification of sources before committing to new service.[302] Each of these features will be discussed in turn

a. Waiver of the Floriston Rates

Although the Floriston Rates had the effect of pulling a significant amount of water downstream and of keeping water in the river from Lake Tahoe to Floriston, they did so at the expense of lake levels in the upper basin and at the expense of system's ability to mimic a more natural system.[303] Fisheries that migrate to spawn in a system like the Truckee River have adapted to and become dependent on

293 TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 119.

294. PSA Art. III, § 29(a), *reprinted in* TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 124.

295. TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 119.

296. PSA, Art. I. 10, *reprinted in* TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 120.

297. *Morton*, 354 F. Supp. 252.

298. Truckee-Carson Irrigation District v. Clark, 741 F.2d 257 (9th Cir. 1984); *see also* Colby, McGinnis, and Rait, *supra* note 92, at 769 (noting that the successful litigation over the operating criteria paved the way for some water in Stampede Reservoir to be dedicated to M&I purposes).

299. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002.

300. PSA, Art. III, § 1, *reprinted in* TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 121.

301. PSA, Art. III, Sec's 4-21, *reprinted in* TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 121-123.

302. PSA, Art. III, § 2, 3, 29(b)-(e), *reprinted in* TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 121 and 124.

303. Gourley, *supra* note 124, at 113 (describing the effects of reduced flows on fish habitat).

high spring flows.[304] Thus, it is crucial to the spawning of listed fish to maintain the requisite flexibility to alter minimum flows so that sufficient water reaches the upper basin.

While the ESA may have been a primary factor in providing the tribe with the power to enter this bargain, litigation under the ESA may never have achieved this result. The ESA is designed to protect single species in jeopardy of extinction.[305] However, since the passage of the ESA in 1973, the sciences of ecology and conservation biology have undergone a revolution. The notion that nature is static and that maintenance of a single species can provide the litmus test for maintenance of an ecosystem as a whole has given way to the concept that "[c]hange and instability [in ecosystems] are the new constants."[306] Furthermore, ecologists recognize that "[t]he accelerating interaction between humans and the natural environment makes it impossible to return to an ideal state of nature. At best, ecosystems can be managed . . ."[307] The ESA, however, "does not protect entire ecosystems,"[308] and offers no guidance on how to integrate the human element. Although the ESA's stated purpose is to protect ecosystems,[309] its mechanisms do not guarantee protection at that level.[310] As a result, entire recovery programs for listed species may center around the maintenance of an artificial population.[311]

The new understanding of an ecosystem as a dynamic, ever-changing system, and the inextricable role of humans in that process, requires "manage[ment of] nature to mimic natural systems."[312] Waiver of the Floriston rates to allow

304. *See, e.g.*, Gourley, *supra* note 124, at 118 (describing the high, turbid "attraction flow" necessary to induce cui-ui into the river to spawn).

305. ESA § 7, 9, 16 U.S.C. § 1536, 1538, provide the mandatory protections in the ESA — both addressing listed species); *see also* Robert B. Keiter, *Beyond the Boundary Line: Constructing a law of Ecosystem Management*, 65 U. COLO. L. REV. 293, 309 (1994) ("The [ESA] is single species-oriented . . . .")

306. Fred P. Bosselman and A. Dan Tarlock, *The Influence of Ecological Science on American law: an Introduction*, 69 CHI.-KENT L. REV. 847, 869 (1998).

307. *Id.* at 870.

308. Keiter, *supra* note 300, at 309.

309. *See* ESA § 2(b), 16 U.S.C. § 1531(b) ("The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.").

310. Keiter, *supra* note 300, at 309. *But see* Daniel J. Rohlf, *There's Something Fishy Going on Here: A Critique of the National Marine Fisheries Service's Definition of Species Under the Endangered Species Act*, 24 ENVT'L L. 617, 627 (1994) (asserting that the ESA requires protection on the basis of acknowledgement of the strong link between conserving species and ecosystem health). The requirements of identification of critical habitat in the ESA § 4(b)(2), 16 U.S.C. § 1533(b)(2) provides limited habitat protection, but does not mandate recognition of broader and dynamic interactions.

311. *See, e.g.*, Alsea Valley Alliance v. Evans, 161 F. Supp. 2d 1154 (2001) (invalidating NMFS' listing distinction between native and hatchery populations of coho salmon); Gourley, *supra* note 124, at 118 (The introduced Lahontan cutthroat trout at Pyramid Lake, listed as threatened, is entirely maintained by a hatchery population. In 1997, for the first time since introduction in the 1950's, the LCT returned to the Truckee River to spawn.)

312. Bosselman and Tarlock, *supra* note 301, at 871.

management of federal reservoirs for spawning flows is a major step in that direction for the Truckee River Basin. Although the ESA provided the hammer, settlement provided the flexibility to adapt to changing concepts of habitat needs while still accommodating the inescapable fact that humans live and use water in the Truckee River Basin.

There is evidence that this effort to mimic natural processes has the potential to restore portions of the Truckee River ecosystem. Periodic higher flows mandated by prior litigation, one particularly wet year in 1997, and fishway construction have, in combination, resulted in an increase in the cui-ui population and the first natural spawn of the LCT.[313] Consistent with the assertion that this approach is more likely to protect the ecosystem as a whole, other benefits have been observed. Higher flows have increased cottonwood seeding along the lower Truckee River, providing shade for trout.[314] And with the increase in cottonwoods, songbirds have returned to the river.[315]

b. Urban Drought Water Supply

Although Sierra Pacific has, since the 1940s,[316] advanced an aggressive agenda of acquisition of agricultural water rights for transfer to urban uses, the transfers provide no assurance of water supply during drought. As discussed above, the ability of crop land, particularly that dedicated to alfalfa and pasture, to withstand shortage is substantially different from urban uses. City water managers who turn off the taps are generally run out of town.

A firm supply in a basin with high seasonal and yearly variation in water supply not only requires storage, but also requires the best pool in the reservoir—i.e., the one not spilled for other water rights; the one filled first; the one not debited for evaporation. Ownership of the Floriston rates gave Sierra Pacific the ability to bargain for a firm drought supply in Stampede Reservoir. The large number of federal reservoirs and the earlier allocation of guaranteed storage to tribal fisheries allowed the tribe to pull it off. The tribe's efforts to restore the fishery required a focus on long-term improvement in flow; however, as long as spawning could occur in most years, specific years of critical drought could be sacrificed.[317] Thus, through the PSA, water no longer released to maintain Floriston rates is stored and credited first to an M&I drought water supply and second to fishery flows.[318] Through the process of settlement, the practical reality that certain water uses—though junior—have less ability to adapt to changes in water supply could be recognized.

313. Gourley, *supra* note 124, at 118.

314. *Id.* at 119.

315. *Id.* at 121.

316. Colby, McGinnis, and Rait, *supra* note 92, at 778.

317. Telephone interview with Robert Pelcyger, Fredericks, Pelcyger, and Hester, representing the Pyramid Lake Paiute Tribe, June 13, 2002.

318. PSA, Art. III, *reprinted in*, TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 124.

c. Conservation

A firm water supply for urban use came with a price tag—mandatory conservation. In order to finalize the settlement, the PSA requires three things: the Nevada Legislature must remove the ban on water metering;[319] a metering program must be initiated;[320] and conservation measures must be implemented to achieve 10 percent savings in water use.[321]

These provisions accomplish two things that will be discussed in greater detail in Part III in this series. First, conservation reduces the need for development of new water supplies. Even though urban water use pales in comparison to agricultural use, retirement of agricultural land does have collateral effects. In the Carson Basin, agriculture provides return flows that serve the Stillwater National Wildlife Refuge.[322] Conservation reduces the need for these transfers and recently some water has been purchased solely to benefit the Refuge and the nearby Carson Lake and Pasture wetlands.[323] In addition, conservation reduces the overall M&I need during drought.

Second, conservation satisfies a general notion of fairness. If the high-rolling cities of Reno and Sparks are to be assigned the first and best water in Stampede Reservoir, it will not sit well with competing interests in the basin if it is used to serve waterfalls and golf courses at casinos. It is a simple concept we teach our children at age 5—"I will give you an allowance, but you can't spend it on candy."

2. The Truckee-Carson-Pyramid Lake Water Settlement of 1990[324]

The Settlement Act of 1990 accomplished, among other things, the following: (1) ratification of the PSA;[325] (2) the long-suffering apportionment of water between California and Nevada;[326] and (3) imposition of a mandatory condition requiring negotiation of operating criteria for the reservoirs on the Truckee River, to be accomplished in the TROA.[327] To accomplish these three objectives, numerous other issues in the basin were also addressed. In exchange for agreement to an interstate apportionment that is remarkably indistinguishable from the one previously negotiated between California and Nevada,[328] including the protection for California that requires federal and tribal water to be subtracted from the allocation to the state in which it is used, the 1990 Settlement Act includes authorization for establishment of a $25

319. PSA, Art. III, § 29(b), *reprinted in*, TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 124.

320. PSA, Art. III, § 29(c), *reprinted in*, TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 124.

321. PSA, Art. III, § 29(e), *reprinted in*, TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 125.

322. Colby, McGinnis, and Rait, *supra* note 92, at 767.

323. *Id.* at 779.

324. Pub. L. No. 101-618, 104 Stat. 3,289, *reprinted in* TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 101.

325. PSA Ratification Agreement, *reprinted in* TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 119.

326. 1990 Settlement Act, § 204, *reprinted in*, TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 103.

327. 1990 Settlement Act, § 205, *reprinted in*, TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 107.

328. Reid, *supra* note 92, at 168.

million Fisheries Fund and a $40 million Economic Development Fund for the Pyramid Lake Paiute Tribe.[329] To address the problems created at the Stillwater National Wildlife Refuge and the Carson Lake and Pasture by both loss of return flow and poor quality of return flow, authorization is provided for purchase of water rights to enhance wetlands.[330] Finally, in an attempt to improve conservation of water in the project, the 1990 Settlement Act authorized Project efficiency improvements and cancellation of Reclamation debt if TCID collects and uses the same funds on conservation.[331]

The PSA is discussed in the previous section and the TROA—the operating agreement—is discussed in the next section. Thus, the following discussion will focus on: (1) the interstate apportionment; (2) the use of a market mechanism to enhance wetlands; and (3) financial incentives for conservation in the Project.

a. Interstate Apportionment

Apportionment of water between states does not come easily.[332] For one thing, there are, for all practical purposes, no rules governing the primary issues in the Truckee River Basin. No established rule governs whose share of water the tribe's allocation must be counted against. No rule requires a particular allocation of Lake Tahoe water despite the fact the state line cuts through the middle of the lake. Nothing mandates that both California and Nevada view the Lake as having important aesthetic and recreational value. Yet in a remarkably short time, California and Nevada reached agreement on the original compact.[333]

The relative speed of the initial apportionment agreement in the Truckee River Basin may be partly attributable to its physical aspects. When the primary interest upstream is recreation and the primary downstream interest is consumptive use, conflict is minimized. Even the allocation of Lake Tahoe waters finds common ground in the fact that both California and Nevada residents of the Tahoe Basin have a shared interest in the aesthetic and recreational values of the Lake.

The speed with which the interstate apportionment was settled between California and Nevada, is overshadowed, however, by the fact that the compact took an additional twenty years to find its way through Congress. As noted above, this delay arose from the failure to satisfy tribal interests in allocation, and the failure of the federal participant to raise those interests during negotiation.[334]

329. 1990 Settlement Act, § 208, *reprinted in*, TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 112; In exchange the Tribe agreed to release claims including the reserved water rights suit against California. *Id.* § 210(a) at 115. The Settlement Act is not final until successful completion of the TROA, *infra* note 290, thus none of these funds have been appropriated.

330. 1990 Settlement Act, § 206, *reprinted in*, TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 108-109.

331. 1990 Settlement Act, § 209, *reprinted in*, TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 113-114.

332. *See, e.g.*, Arizona v. California, 373 U.S. 546 (1963); Kansas v. Colorado, 206 U.S. 46 (1907).

333. Kramer, *supra* note 39, at 1361 (the negotiation took 10 years).

334. Kramer, *supra*, note 39, at 1364-1377.

This twenty-year impasse due to federal and Tribal opposition is indicative of a much larger problem concerning water allocation and management in the West —the persistence of the fiction that water is uniquely a state resource governed by state law.[335] The vast amount of federal and tribal land in the West and the widespread impact of federal water projects renders those who cling to the notion of exclusive state control of water at worst delusional and at best incapable of brokering the types of solutions made possible by leaders like Senator Harry Reid.[336] The importance of the federal role in water negotiations in the West is discussed in detail in Part III of this series. For purposes of evaluating solutions on the Truckee River, it is important to note that interstate apportionment would not have been possible without the full participation of the federal interest.

Finalization of the interstate apportionment in the 1990 Settlement Act, accompanied by concessions to the tribe regarding funding and use of Stampede Reservoir, accomplished the primary goal sought by California and Nevada.[337] By including all affected governments within its scope, the 1990 Settlement Act accomplished apportionment in a manner that should endure.

b. A Water Market for Wetlands Water

Parties seeking the voluntary reallocation of water have little choice but to pay for it. Once the rights of the Newlands Project, as defined in the Orr Ditch Decree, were held inviolate,[338] limited options for recourse remained.[339] The 1990 Settlement Act's authorization of funding to purchase water for the Stillwater National Wildlife Refuge, and the Carson Lake and Pasture recognizes this reality.[340] In a pure market, environmental interests are not strongly represented.[341] Past water purchases in the Truckee River Basin have been for urban use—an interest capable of paying the high cost of water.[342] It is only the authorization of funding by the 1990 Settlement Act that allows this reallocation to environmental needs.[343]

335. *See, e.g.*, Comments of Senator Crapo of Idaho, *supra* note 212.

336. Kramer, *supra* note 39, at 1376 (referring to federal "facilitation" of interstate compact negotiations—"[f]acilitation accomplished nothing because so much of the Truckee River system is affected by federal claims and projects. Until the United States again directly participates in some sort of negotiation or proceeding . . . there will be no certainty in this troubled interstate water system.").

337. Telephone interview with John Kramer, California Department of Water Resources, April 29, 2002; and Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, April 30, 2002.

338. Nevada v. United States, 463 U.S. 110 (1983).

339. Ongoing litigation by the Tribe to address inefficient use of water by the Project has provided additional incentive for "voluntary" transfers. Colby, McGinnis, and Rait, *supra* note 92, at 780.

340. 1990 Settlement Act, § 206, *reprinted in* TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 108.

341. Colby, McGinnis, and Rait, *supra* note 92, at 781.

342. *Id.* at 778.

343. *Id.* at 777. Note also that the 1990 Settlement Act provides for transfer of the Carson Lake and Pasture in the Carson Basin from the United States to the State of Nevada for use as a state wildlife area. 1990 Settlement Act, § 206(e),

At the same time there is an inherent fairness to the purchase of water when its reallocation targets existing uses rather than simply an alteration in reservoir management or improvements in efficiency.[344] Though some might argue that payment to Project water users, whose use not only caused environmental harm but was made possible by federal subsidy, is inappropriate, the Truckee and Carson Basins are an excellent illustration of the fact that the issue is more complex.[345] Wetlands in the Stillwater National Wildlife Refuge are enhanced by irrigation return flow.[346] Reduction in Project diversions from the Truckee River due to tribal litigation and purchase of agricultural water for urban use have reduced that return flow.[347] Voluntary marketing of water to fill the gap for the Refuge seems an appropriate remedy. However, if fairness is part of the justification for this approach, payment for water for environmental purposes, at the very least, should not occur until inefficiencies in conveyance and the project's use of water are eliminated.

c. Conservation Incentives

By allowing retirement of Reclamation debt if the same money is used for water conservation, the 1990 Settlement Act removes any possible claim that it erects a financial barrier to improved project efficiency. However, it does not *require* that irrigators take advantage of the eliminated barrier. Incentive to do so is provided by the ongoing threat of tribal litigation to correct inefficient use of water within the project.[348] The Project water users now have the means to eliminate that claim. It remains to be seen whether they take advantage of the opportunity remains to be seen.

3. The Truckee River Operating Agreement—TROA

The TROA sets up a system of reservoir operation accounting and dispute resolution to implement the 1990 Settlement Act and by incorporation in the 1990 Settlement Act, the PSA.[349] As noted above, the TROA is currently under negotiation. Because the parties consider negotiation of the TROA (and the 1990

reprinted in TRUCKEE RIVER ATLAS, app. 2, *supra* note 6, at 109. Nevada has spent approximately $4 million on water rights for transfer to the wetlands, but the transfer of land has not taken place. Telephone interview with Mike Turnipseed, Director, Nevada Department of Conservation and Natural Resources, April 30, 2002.

344. *See, e.g.*, Tarlock, *supra* note 222, at 676 (advocating the use of market mechanisms to reallocate water from existing uses).

345. *See e.g.*, Joseph L. Sax, *Selling Reclamation Water Rights: A Case Study in Federal Subsidy Policy*, 64 MICH. L. R. 13 (1964) (arguing the benefits from sale of water from a Reclamation project should go to the project, not the individual); and Raymond L. Anderson, *Windfall Gains from Transfer of Water Allotments within the Colorado-Big Thompson Project*, 43 LAND ECONOMICS 265 (1967) (arguing that individual profits from sale of water from a Reclamation project are necessary to provide incentive to transfer water).

346. Colby, McGinnis, and Rait, *supra* note 92, at 767.

347. Pratt, *supra* note 208, at S-3.

348. *See, supra*, note 260.

349. TROA, *supra* note 6, at 2-18.

Settlement Act) to be in settlement of litigation, negotiations are not open to the public, and a document will not be available for review until publication of a new EIS/EIR.[350] The contrast between use of a process heavily driven by public participation, such as that on the Milk River of Montana discussed in Part I of this series, and a process that leaves most public participation to the final stage after an agreement is negotiated will be discussed in Part III of this series. The following discussion focuses on the solutions in the preliminary version of the TROA described in the February 1998 Draft EIS/EIR.[351]

As required by the 1990 Settlement Act, the TROA must be approved to render the Act effective, and the TROA will not take effect until approved by the United States Department of the Interior, California, Nevada the Pyramid Lake Paiute Indian Tribe, and Sierra Pacific.[352] The 1998 draft TROA has three primary elements: (1) reservoir management; (2) storage accounting; and (3) administration and dispute resolution. Only reservoir management and administration and dispute resolution will be discussed here, due to the complexity of storage accounting, and to the fact that its specific details will not be clear until the final TROA is released to the public.

a. Reservoir Management

Improved reservoir management is accomplished through voluntary exchange of stored water.[353] Exchange refers to either an exchange on paper, release from one reservoir in lieu of another—the model for which was developed in the Tahoe-Prosser Exchange Agreement described earlier—or moving water from an upstream to a downstream reservoir—applicable to the Little Truckee River, Independence Lake,

350. Telephone interview with Christine Thiel, Nevada Department of Conservation and Natural Resources, April 30, 2002.

351. In the final stages of negotiation of the 1998 TROA, Sierra Pacific realized it had based its modeling of the agreement on assumptions that were inconsistent with the language in the TROA. The model was originally developed by BOR but had been modified by Sierra Pacific during negotiations of the PSA. Those negotiations focused on the downstream interests of urban water users and Pyramid Lake. In contrast, the focus of TROA includes upstream interests. With the addition of California and the United States to negotiations, interests in maintaining reservoir lake levels for recreation and instream flow on tributaries below dams for the Lahontan cutthroat trout were added. Sierra Pacific had not included provisions for these interests in model runs. *See* telephone interview with William Bettenburg, United States Department of the Interior, Washington D.C., June 24, 2002. The new compromises made necessary by this realization by Sierra Pacific do not effect the analysis in this paper. The problem of data and model development are discussed in Part III of this series as part of the analysis of the negotiation process.

352. 1990 Settlement Act § 205(a)(4), *reprinted in* TRUCKEE RIVER ATLAS, app. 1, *supra* note 6, at 107 (providing that "[o]ther affected parties may be offered the opportunity to execute the Operating Agreement.) Both the Pyramid Lake Paiute Tribe and Sierra Pacific are considered necessary parties to the TROA. *See* TROA, *supra* note 8, at 1-1.

351. TROA, *supra* note 8, at 2-28 to 2-29.

352. *Id.* at 2-28.

353. Tarlock, *supra* note 222, at 686.

Stampede, and Boca Reservoirs.[354] Exchange allows improvement in storage efficiency by essentially treating all the upper basin federal reservoirs as a single unit.[355] In this way, water can be stored where it is most available and released where it is most needed. Recreational interests dependent on lake levels and instream flow below dams derive immediate benefits. The basin as a whole gains from improved water management.

Creative use of existing storage may be key to resolution of water distribution problems on many of the highly developed river basins in the West. Operation of storage under a rigid priority system can be highly hydrologically inefficient. Variations in the ability of a particular reservoir to hold back water, local fluctuations in precipitation, differences in the timing and urgency of water needs, and variation in local needs for instream flow and lake habitat can be more effectively used and served under a flexible scheme of reservoir management. All it takes is cooperation on the part of all the many interests involved.

b. Administration and Dispute Resolution

The current draft TROA provides for daily administration of the interstate allocation and stream flow requirements by the same person filling the role of the Federal Water Master appointed by the Orr Ditch court.[356] Disputes are heard by a hearing officer appointed by a four-member committee consisting of representatives from the four sovereigns: the United States (represented by the Department of the Interior), Nevada, California, and the Pyramid Lake Paiute Indian Tribe.[357]

A mechanism to administer water distribution and to resolve disputes over the interpretation and application of a water settlement are crucial to its future durability, a topic more thoroughly explored in Part III of this series. Even though the process used in the Truckee River Basin resulted in a series of agreements with finer detail regarding the manner of implementation, it is not possible to anticipate all disputes that might arise in the future. The administration and dispute resolution mechanisms in TROA acknowledge that fact.

The continued existence of multiple jurisdictions with conflicting and overlapping authority over the same water is unavoidable in the arid West. John Wesley Powell, on surveying these arid regions in the late 1800s, recognized that the major rivers of the West would control its development.[358] He recommended that the federal government eliminate the straight-line rectangular survey so dear to the engineer and draw property boundaries along topographic divides.[359] The federal government did not follow this

354. TROA, *supra* note 8, at 2-34. The role as settlement administrator and Federal Water Master are considered separate roles, because some of the administrative functions are not judicial and also different dispute resolution mechanisms are used.

355. *Id.* at 2-34.

356. *See, supra* note 42.

357. Stegner, *supra* note 42, at 227. *See also* REISNER, *supra* note 41, at 49 (noting that Powell recommended that state boundaries follow the boundaries of the major water basins).

358. *Id.*

359. *Id.*

recommendation. The Truckee River Basin is not atypical of what the federal government did instead. The basin includes: (1) two states—one following a doctrine of strict prior appropriation and one following a mixed riparian/prior appropriation system; (2) an Indian Reservation; and (3) a federal Reclamation project. By making these four entities responsible for the appointment of a hearing officer, the TROA establishes a comprehensive basin-wide dispute resolution mechanism. In addition, by using the existing water distribution authority on the river—the Federal Water Master—the TROA avoids creating a new entity with potential for conflict with water distribution under the Orr Ditch Decree. This approach dovetails with the physical reality that the water within a single basin cannot be discretely segmented like a plot of land, but instead must be shared among the inhabitants.

Each of the four sovereigns gives up an element of control and autonomy by subjecting its water use under its jurisdiction to this process. Arguably, in doing so they have relinquished an element of their sovereignty. But this view distorts the full potential of what it means to be sovereign. The sovereign with the leadership and foresight to enter agreements with other sovereigns, agreements that allow them to exercise some control over actions outside their boundaries that have an effect inside their boundaries, is the one truly exercising its full potential as a sovereignty. These are the entities most likely to endure and to best serve their people.

IV. Conclusion

One hundred years after Francis Griffin Newlands championed the Reclamation Act, the people of the Truckee River Basin have agreed on how to divide the water developed under that Act, and are taking steps to remedy some of the environmental harm that resulted. The 1990 Settlement Act and TROA represent a major step toward cooperative basin-wide management of water in the Truckee River Basin. Negotiators turned to existing storage to introduce flexibility in water management. This approach not only allows operation of the basin to mimic natural processes in an effort to reverse environmental harm but also avoids the cost and environmental damage associated with the development of new water infrastructure. Furthermore, the flexibility made possible by managing all reservoirs in concert guaranteed a drought water supply for growing urban needs. This effort to integrate water management across jurisdictional boundaries, and to restore environmental integrity, should serve as a model for other water basins. By correcting inefficiencies of use and management in the West's major water basins, substantial improvements may be realized without the cost of new infrastructure.

This achievement in the Truckee River Basin took years to achieve. However, the intervening years of litigation and jockeying for position cannot be considered a waste, as those efforts set the stage for settlement. The hammers provided by both the ESA and the fiduciary duty of the United States to the tribe combined with the incentive to meet growing urban needs, made the disputes in the Truckee

River Basin ripe for settlement. Impacts on personal interests challenge the altruism of those involved. The frustrations brought on by barriers imposed by existing law, conflicting interests, and the crisis brought on by collapsing ecosystems, population growth, and drought, forced action in this case. Hopefully, this action has not come too late.