An Agricultural Law Research Article

Unconventional Waters: The Quiet Revolution in Federal and Tribal Minimum Streamflows

by

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Originally published in ECOLOGY LAW QUARTERLY
19-3 ECOLOGY L.Q. 445 (1992)

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INTRODUCTION

Streamflow levels in the West are perhaps the region's most contentious natural resource issue. Water allocation in Western states always has been dominated by the principles of the prior appropriation doc-

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trine,[1] under which the first user obtains the most secure right. This crude, nineteenth century allocation system rewarded early diversion by agricultural, mining, and other commodity users. Prior appropriation ignored long-range planning, conservation, water quality, and the needs of foreign governments, Indian[2] tribes, recreation, and wildlife habitat — uses that were not recognized when the doctrine became entrenched over a century ago.[3] Because prior appropriation rights are indefeasibly vested property rights — unlike, say, water pollution rights, which are unvested usufructuary rights granted for limited terms[4] — they do not readily accommodate changed values. True, Western water rights may be lost by abandonment or forfeiture,[5] and transfers to more economically valuable uses are possible.[6] But abandonment or forfeiture is rare,[7] and the risk of adverse effects on third parties makes transfers uncommon.[8]

For these reasons, allocation of Western waters under the prior appropriation system is unlikely to reflect the values of the late twentieth century.[9] Mounting concern over fish and wildlife protection, water

1. Prior appropriation was thought to be more suited to the aridity of the West because it rewarded only those who put water to use, typically by diverting it for irrigation. Thus, the doctrine rewarded agrarians and entrepreneurs with property rights in contrast to the Eastern riparian water law doctrine which allocated water rights to shoreside landowners whether they used the water or not. Limiting water rights to those who could make productive use of the water — and only for as long as they did so (nonuse can lead to loss of the right through abandonment or forfeiture) — was designed to conserve scarce Western water for those who were making productive investments such as irrigation, mining, and stock watering. *See generally* 2 WATERS AND WATER RIGHTS chs. 11-17 (Robert E. Beck ed., 1991 and 1992 Supp.) [hereinafter WATERS AND WATER RIGHTS] (describing the origin, history, and structure of prior appropriation systems in the Western United States).

2. My use of "Indian" throughout this article reflects Congress's use of the term. *See, e.g.*, Fort Hall Water Rights Act of 1990, Pub. L. No. 101-602, 104 Stat. 3059 (defining the term "Indian" for purposes of the Act as "any person who is a member of a tribe recognized as eligible for special programs and services provided by the United States . . . is recognized as an Indian under tribal law; or holds or is . . . eligible to hold restricted trust property on the Reservation").

3. *See* Charles F. Wilkinson, *Aldo Leopold and Western Water Law: Thinking Perpendicular to the Prior Appropriation Doctrine*, 24 LAND & WATER L. REV. 1, 14-17 (1989).

4. *See* Joseph L. Sax, *The Limits of Private Rights in Public Waters*, 19 ENVTL. L. 473, 475 (1989).

5. *See, e.g.*, 2 WATERS AND WATER RIGHTS, *supra* note 1, §§ 17.03(a),(b), at 438-41.

6. *See, e.g.*, Brian E. Gray, et al., *Transfers of Federal Reclamation Water: A Case Study of California's San Joaquin Valley*, 21 ENVTL. L. 911 (1991) (examining the interrelationship of federal and California water transfer statutes, and analyzing the legal implications of voluntary transfers of federal reclamation project waters).

7. Cancellation due to abandonment or forfeiture typically requires an adjudication, which is expensive and cumbersome. *See, e.g.*, OR. REV. STAT. §§ 540.631-540.650 (1991) (requiring full contested case procedures when any water right holder protests the cancellation of the right due to forfeiture).

8. Water rights transfers are hampered by the so-called "no-injury" rule which restricts any transfer which would harm another water right holder. *See* George A. Gould, *Water Rights Transfers and Third-Party Effects*, 23 LAND & WATER L. REV. 1, 13-18 (1988).

9. For an amusing, apocryphal eulogy that elaborates on the shortcomings of the prior

quality restoration, and other instream uses[10] will make prior appropriation increasingly out of step with public values. In recognition of this incongruence, Western states have taken steps to modernize the antiquated doctrine of "first in time, first in right" to protect noncommodity uses and acknowledge instream values.[11] Many Western states accomplish this by means of instream flow programs.[12] One Western state provides streamflow protection partly through the recognition of riparian rights;[13] others do so by eliminating the doctrinal impediments to preservation of instream flows under the prior appropriation system.[14] And some states employ the public trust doctrine to protect streamflow.[15]

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appropriation doctrine, see Charles F. Wilkinson, *Prior Appropriation: 1848-1991*, 21 ENVTL. L. no. 3, part I, v (1991); for an equally humorous response, see Gregory J. Hobbs, Jr., *The Reluctant Marriage: The Next Generation (A Response to Charles Wilkinson)*, 21 ENVTL. L. 1087 (1991); *see also* James L. Huffman, 21 ENVTL. L. 2253 (1991) (letter to the editor) (disagreeing with Professor Wilkinson in another entertaining retort).

10. *See* 6 WATERS AND WATER RIGHTS, *supra* note 1, Part XII, at 525 (defining instream use as "any use of water that does not require diversion or withdrawal from the natural watercourse, including in place uses such as navigation and recreation as well as power generation that requires a continuous flow"). Instream flow rights are rights to maintain a specified quantity of water in a stream for nonconsumptive purposes such as navigation, maintenance of water quality and fish and wildlife habitat, recreational use, and hydropower generation.

11. *See infra* notes 53-55 and accompanying text.

12. *See generally* INSTREAM FLOW PROTECTION IN THE WEST (Lawrence L. MacDonnell et al. eds., 1989) [hereinafter INSTREAM FLOW PROTECTION] (discussing the policies giving rise to state instream flow programs and describing the status of instream flow protection in fourteen Western States). Typical methods used by states to protect flows include prohibiting new diversions, attaching flow protection conditions to new water permits, and acquiring existing water rights which are then dedicated to instream use. *Id.* at 4-8.

13. *In re* Water of Hallett Creek Stream Sys., 749 P.2d 324, 325 (Cal.), *cert. denied*, 488 U.S. 824 (1988) (recognizing riparian rights on federal reserves under California's mixed system of riparian rights and prior appropriation); *see* Eric T. Freyfogle, *Context and Accommodation in Modern Property Law*, 41 STAN. L. REV. 1529, 1531-35 (1989) (discussing *Hallett Creek*).

14. *See* State v. Morros, 766 P.2d 263, 266 (Nev. 1988) (diversion no longer an essential element of a water right because state's definition of beneficial use includes recreation); *see generally* Norman K. Johnson & Charles T. DuMars, *A Survey of the Evolution of Western Water Law in Response to Changing Economic and Public Interest Demands*, 29 NAT. RESOURCES J. 347, 361-67 (1989) (discussing statutory and case law changes made by various Western States).

15. *See, e.g.*, National Audubon Soc'y v. Superior Court (Mono Lake), 658 P.2d 709 (Cal.), *cert. denied*, 464 U.S. 977 (1983) (public trust doctrine applied to protect lake levels); United States v. State Water Resources Control Bd. (Bay Delta), 227 Cal. Rptr. 161, 200 n.41 (Cal. Ct. App. 1986) ("The interests protected by the public trust are nonconsumptive, instream uses: navigation, fishing, recreation, ecology, and aesthetics."); Harrison C. Dunning, *The Public Trust Doctrine and Western Water Law: Discord or Harmony?*, 30 ROCKY MTN. MIN. L. INST. §§ 17.01-.08, at 17-1 to 17-46 (1985) (applauding the *Mono Lake* decision and advocating the use of public trust doctrine to protect instream values); Jan S. Stevens, *The Public Trust and In-stream Uses*, 19 ENVTL. L. 605 (1989) (discussing the use of public trust doctrine to protect instream flows in California). *See also* Kootenai Environmental Alliance v. Panhandle Yacht Club, 671 P.2d 1085, 1095-96 (Idaho 1983) (considering instream factors in public trust determination); Scott W. Reed, *The Public Trust Doctrine in Idaho*, 19 ENVTL. L. 655 (1989) (describing the development of public trust doctrine in Idaho). *See generally Symposium on the Public Trust and the Waters of the American West: Yesterday, Today, and To-*

Since states are certain to maintain their authority to allocate water rights,[16] state accommodation of instream values, accompanied by changed perceptions of the public interest in non-traditional uses, is one solution to the problem of securing adequate protection for Western streamflows. However, belated state recognition of the importance of streamflow protection cannot, after a century of creating vested property rights in water diversions, afford instream values equal status with consumptive uses given prior appropriation's litmus test of first in time, first in right.[17] Moreover, although they have exercised a near-monopoly for generations, states do not possess an exclusive interest in or control over water allocation. The federal government and the governments of Indian tribes have two types of rights, proprietary and regulatory, that compete with the states' right to allocate surface water. Increasingly these governments are exercising long-dormant authority to control water flows independently of state allocation systems.

Although the relationship between federal/tribal water authority and state authority is still evolving, enough is now known to suggest that the next generation will witness a fracturing of the near-exclusive hold that states have had on the control of streamflows. As intergovernmental relations gradually replace the date of diversion as the chief allocation principle, Western water law will become increasingly complex. This increased complexity will reflect a mixed system that will be more responsive to federal and tribal sovereign interests and more protective of the public interest in Western streamflows.

This article examines the ongoing revolution instigated by federal and tribal governments quietly securing protection of streamflows vital to their proprietary and regulatory interests. Section I provides some background on the nature and origins of reserved water rights. Section II describes the federal effort to secure minimum flows through the federal reserved rights doctrine, a limited means of federal protection, but a preferred one because of the early priority dates that accompany most federal reserved rights. Section III explores federal regulatory rights to streamflows, rights that have been renounced by the federal government under its land management statutes but successfully asserted under stat-

morrow, 19 ENVTL. L. 425 (1989) (including general discussions of public trust doctrine in the West, and the application of the doctrine to specific Western water issues).

16. *See generally* NATIONAL WATER COMMISSION, WATER POLICIES FOR THE FUTURE 459-71 (1973) and sources cited therein (recommending ways to minimize state-federal conflicts); D. Craig Bell & Norman K. Johnson, *State Water Laws and Federal Water Uses: The History of Conflict, the Prospects for Accommodation*, 21 ENVTL. L. 1 (1991) (recounting state-federal conflicts over water rights and suggesting approaches for minimizing future conflicts).

17. Under the temporal priority system, the old diversionary uses will always be senior to the new instream rights. *See* Johnson & DuMars, *supra* note 14, at 362 (appropriations required for minimum streamflows "take their place in the prior appropriation priority system like other water rights, and thus do not necessarily guarantee minimum flows.").

utes such as the Clean Water Act, the Endangered Species Act, and the Federal Power Act. Because federal regulatory rights are not tied to federal land ownership, they have application far beyond the confines of the arid West; they do not, however, enjoy early priority dates in states employing the prior appropriation system. Section IV turns to tribal reserved rights. These are distinct from, and in many ways more formidable than, federal reserved rights because fulfillment of the former's central purpose — to create productive homelands for the tribes — often will require more water than is required to satisfy the primary purpose of federal reserves. Section V surveys the emerging role of tribal governments in controlling streamflows through federal water quality laws and tribal water codes. Assertion of these tribal regulatory rights almost certainly will lead to some of the most difficult adjustments the new system of water allocation will require. Finally, section VI concludes that these changes constitute an ongoing, largely unnoticed revolution in water law which, while producing complexity and intergovernmental tension, is essential to prepare Western water law for the demands of the twenty-first century.

I
BACKGROUND[18]

When the federal government reserves public lands for particular purposes, it also impliedly reserves water sufficient to effectuate those purposes. These "reserved" water rights differ from riparian rights or prior appropriation rights, although they contain elements of both. For example, like riparian rights, reserved rights are appurtenant to land; that is, land ownership provides the basis for the right. Also like riparian rights, reserved rights are not lost by nonuse. But unlike riparian rights and like appropriation rights, reserved rights can be used on nonriparian lands. And like prior appropriation rights, reserved rights have priority dates that reflect the security of the right; senior dates have priority over junior dates. Shortages are not shared, as they are in the case of riparian rights. The priority date for reserved rights is the date of the reservation or earlier,[19] not the date of diversion, as it is for most appropriation rights.

Reserved rights are, most importantly, federal rights, grounded on the (mostly implied) intent of the federal government to reserve water for

18. Except where otherwise noted, adapted from 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.01, at 201-17.

19. The priority date can be earlier than the date of the reservation when the reservation's purposes include an intent to reserve preexisting uses. *See, e.g.*, United States v. Adair, 723 F.2d 1394, 1412-15 (9th Cir. 1983), *cert. denied*, 467 U.S. 1252 (1984). *See generally* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(b), at 222-24 (describing how priority dates are calculated for Indian reserved water rights).

its own purposes. This characteristic distinguishes reserved rights from both prior appropriation and riparian rights, which are created and allocated by the states. The federal nature of reserved rights has caused severe tensions with the states, because reserved rights constitute a departure from the traditional federal acquiescence in state water allocation decisions. Moreover, because federal land reservations frequently have early priority dates, assertion of federal reserved rights threatens many prior appropriation rights previously assumed to be secure. For these reasons, and because of the current uncertainty surrounding the nature and scope of reserved rights, these rights remain one of the most controversial aspects of water law, especially in the arid West where federal lands predominate.[20]

The foundations of the reserved rights doctrine were laid in two turn-of-the-century Indian rights cases. In 1905, in *United States v. Winans*,[21] the Supreme Court construed treaty fishing rights as reserved rights, using rules of interpretation favorable to the Indians and rejecting arguments that subsequent acts of statehood or land conveyances could divest the fishing rights reserved in the treaty.[22] Three years later, in *Winters v. United States*,[23] the Court applied the reserved rights principle to water allocation, ruling that the creation of an Indian reservation included not only land but also water rights.[24] These reserved Indian water rights could not be divested by subsequent appropriators, nor were they subject to loss under state water law rules.[25]

II
FEDERAL RESERVED RIGHTS

Federal reserved rights arise, according to the most commonly accepted view,[26] when the federal government reserves public lands for specific purposes, thereby revoking the authority given states under the federal Desert Land Act[27] to create property rights in water on lands

20. Some fifty reserved rights cases were pending in 1991. Bell & Johnson, *supra* note 16, at 50.

21. 198 U.S. 371 (1905).

22. *Id.* at 381. For a detailed discussion of *Winans*, see 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.01(b)(1), at 205-08.

23. 207 U.S. 564 (1908).

24. *Id.* at 576-77. For a detailed discussion of *Winters*, see 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.01(b)(2), at 208-11.

25. For a comparison of *Winters* rights with *Winans* rights, see 4 WATERS AND WATER RIGHTS, *supra* note 1, §§ 37.02(a)(1)-(2), at 220-22.

26. *See, e.g.*, CHARLES J. MEYERS ET AL., WATER RESOURCE MANAGEMENT 805-06 (3d ed. 1988) (discussing this view of federal reserved rights as being "[t]he most frequently cited"); JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 825 (2d ed. 1991) (citing this analysis as "another leading view . . . .").

27. Desert Land Act of 1877, ch. 107, §§ 1-3, 19 Stat. 377 (codified as amended at 43 U.S.C. § 321-23 (1988)).

that originally were federally-owned.[28] When the United States acquires water rights for reservations, therefore, it does so without adhering to the requirements of state prior appropriation laws.[29] Since the Supreme Court confirmed the existence of federal reserved water rights in 1963, in *Arizona v. California*,[30] their assertion has become one of the most contentious issues in the West.[31]

Caught by surprise by the Supreme Court's ruling in the *Arizona* case,[32] the states subsequently fought a successful rear guard action to establish state court jurisdiction over reserved rights under the McCarran Amendment.[33] Since then, state courts have been predictably grudging in their determinations of the scope and purposes of reserved rights. They have reduced the quantity of water reserved and have construed ambiguities in priority dates against the federal government[34] in an effort

28. California-Oregon Power v. Portland Beaver Cement, 295 U.S. 142, 158, 164 (1935) (holding that the Desert Land Act severed water from public domain land and gave sanction to state prior appropriation laws (construing 43 U.S.C. § 321)).

29. *See* Cappaert v. United States, 438 U.S. 696, 699-702 (1978).

30. 373 U.S. 546, 601 (1963) (approving reserved rights for a national recreation area, a national forest, and two wildlife refuges), *decree entered*, 376 U.S. 340, 345-46, 350 (1964) (quantifying the reserved rights at 41,839 and 28,000 acre-feet of water for the Havasu Lake and Imperial National Wildlife Refuges, respectively, and at the amount "reasonably necessary to fulfill the purposes" for both the Lake Mead National Recreation Area and the Gila National Forest). Eight years earlier, in the *Pelton Dam* case, the Supreme Court noted *in dicta* that the "severance" of water from federal lands worked by the Desert Land Act, 43 U.S.C. § 321, did not operate where federal lands were reserved for specific purposes such as a power site withdrawal. FPC v. Oregon, 349 U.S. 435, 448 (1955). For a discussion of the issues and decision in Arizona v. California, see Frank J. Trelease, Arizona v. California: *Allocation of Water Resources to People, States, and Nation*, 1963 SUP. CT. REV. 158.

31. *See* Bell & Johnson, *supra* note 16, at 49-50 (noting that some 50 reserved rights cases were pending in 1991, and commenting that few topics in Western water law have "engendered as much interest among commentators").

32. *See* Frank J. Trelease, *Federal Reserved Water Rights Since the PLLRC*, 54 DENV. L.J. 473, 475 (1977) ("At no time prior to 1955 did I ever hear a suggestion that the reserved rights doctrine was anything but a special quirk of Indian water law.").

33. Department of Justice Appropriation Act of 1953, ch. 495, § 208, 66 Stat. 556, 570 (codified at 43 U.S.C. § 666 (1988)). The McCarran Amendment waived the federal government's sovereign immunity defense and gave federal consent to be joined in state suits determining the water rights of all users on particular streams. *Id.* In 1971, the Supreme Court held that federal reserved rights could be adjudicated in McCarran Amendment proceedings. United States v. District Court in and for County of Eagle, 401 U.S. 520 (1971); *see also* United States v. District Court in & for Water Div. No. 5, 401 U.S. 527 (1971) (holding that McCarran Amendment proceedings could include monthly adjudications before a water referee so long as such proceedings reached all claims on the stream system). Later, the Court included the adjudication of Indian reserved rights within the McCarran Amendment waiver. Colorado River Water Conservation Dist. v. United States, 424 U.S. 800 (1976); Arizona v. San Carlos Apache Tribe, 463 U.S. 545 (1983). *See also* Robert H. Abrams, *Reserved Water Rights, Indian Rights and the Narrowing Scope of Federal Jurisdiction: The Colorado River Decision*, 30 STAN. L. REV. 1111 (1978). *See generally* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(a) (1) at 252-55 (discussing the enactment of the McCarran Amendment and its subsequent interpretation in the courts).

34. *See, e.g.*, United States v. Denver, 656 P.2d 1, 22-28 (Colo. 1982) (rejecting instream flows for timber and watershed protection purposes; rejecting a 1960 priority date, based on

to avoid destabilizing existing, typically junior state water rights. However, because the McCarran Amendment authorized displacement of federal jurisdiction only in the case of comprehensive streamwide adjudications,[35] federal courts continue to decide reserved rights cases.[36] Although the Supreme Court has asserted that it would carefully oversee the state courts' interpretations of reserved rights,[37] it has yet to issue an opinion in a reserved rights case originating in the states.[38] The number of different courts deciding the cases, coupled with the diverse purposes of federal land reservations, has produced a significant fracturing of reserved rights law. Nevertheless, recent cases reveal the broad outlines of the doctrine's evolution. The following sections discuss these cases and their effects.

A. National Forests

The fiercest reserved rights battles have been waged over national forest water rights because national forests constitute by far the largest federal land reservation system,[39] one on which more than half of Western water either originates or flows.[40] More than a decade ago, in *United States v. New Mexico*, the Supreme Court limited the scope of federal reserved rights in national forests, thus relieving most of the states' fears in this area.[41] In *New Mexico*, the Court ruled that the reserved rights

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the Multiple Use-Sustained Yield Act, for nonconsumptive uses in a national forest; and rejecting flows for whitewater rafting in a national monument); *In re* Big Horn River Sys. (Big Horn I), 753 P.2d 76, 99-100 (Wyo. 1988) (groundwater not subject to reserved rights claims).

35. 43 U.S.C. § 666 (1988), *construed in* United States v. District Court in & for County of Eagle, 401 U.S. 520, 525 (1971); *see* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(a)(1) at 252-55. A comprehensive streamwide adjudication is a legal proceeding in which the rights of all claimants to water in a watershed are defined. SAX ET AL., *supra* note 26, at 144.

36. *See, e.g.*, United States v. Adair, 723 F.2d 1394 (9th Cir. 1983), *cert. denied*, 467 U.S. 1252 (1984) (upholding a trial court decision to determine Indian reserved rights in federal court where a comprehensive streamwide adjudication was not involved, while deferring quantification to a later state proceeding).

37. Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 571 (1983) (holding that state court reserved rights decisions may "expect to receive, if brought for review before this Court, a particularized and exacting scrutiny commensurate with the powerful federal interest in safeguarding those rights from state encroachment").

38. In the only state court reserved rights case accepted for review, an equally divided Court affirmed without opinion. Wyoming v. United States, 492 U.S. 406, 407 (1989), *aff'g without opinion*, 753 P.2d 76 (Wyo. 1988), *reh'g denied*, 492 U.S. 938 (1989). *See generally* Walter Rusinek, Note, *A Preview of Coming Attractions?* Wyoming v. United States *and the Reserved Rights Doctrine*, 17 ECOLOGY L.Q. 355 (1990) (describing litigation in the Wyoming case and speculating on future Supreme Court actions).

39. *See* John D. Leshy, *Water and Wilderness/Law and Politics*, 23 LAND & WATER L. REV. 389, 397 (1988).

40. United States v. New Mexico, 438 U.S. 696, 705 (1978).

41. *Id.* at 705-11 (no water reserved for secondary national forest purposes such as recreation and fish and wildlife protection). *See also* Frank J. Trelease, *Uneasy Federalism — State Water Laws and National Water Uses*, 55 WASH. L. REV. 751, 758-59 (1980); *infra* notes 47, 53-55 and accompanying text.

doctrine supplies water only for Congress' primary purposes in establishing a federal reservation and only in amounts without which "the purposes of the reservation would be entirely defeated."[42] Thus, the establishment of the Gila National Forest did not reserve water from the Rio Mimbres River for uses unrelated to timber production and watershed protection such as instream flows for fish, wildlife, and recreation[43] and diversions for stock watering.[44] This decision seemed to eliminate most reserved rights for nonconsumptive (i.e., instream) uses in the nation's largest land reservation system,[45] protecting flows only for timber purposes and watershed conservation.[46] Instream flows on national forests for fish and wildlife and recreation, the Court appeared to indicate, had to be secured under state law.[47]

The Forest Service has not entirely acquiesced in this result, contending in *United States v. Jesse*, a case brought in Colorado water court, that reserving water to produce "strong, recurring instream water flows . . . necessary to maintain efficient stream channels and to secure favorable conditions of water flows" serves the primary purpose of the national forests, watershed protection.[48] On appeal, the Colorado Supreme Court ruled that the federal government must be given an opportunity to prove that such instream flows are necessary to fulfill the forest's watershed protection purpose.[49] The federal government is now claiming in Colorado water court that it should be able to reserve up to

42. 438 U.S. at 700.

43. *Id.* at 707-8.

44. *Id.* at 715-16.

45. *But see* Sally K. Fairfax & A. Dan Tarlock, *No Water For the Woods: A Critical Analysis of* United States v. New Mexico, 15 IDAHO L. REV. 509, 533-49 (1979) (arguing that the original purpose of reserving national forests was preservationist in nature; management of forests for consumptive use did not begin until after the forest reserves were transferred from the Department of Interior to the Department of Agriculture in 1905 and Gifford Pinchot became the first chief of the Forest Service).

46. Timber purposes have been held to include road watering for dust suppression, and maintenance of administrative sites used for timber harvesting and firefighting, but not recreation. Peggy E. Montaño, *Non-Indian Federal Reserved Rights Since the* Rio Mimbres *Decision*, 37 ROCKY MTN. MIN. L. INST. § 22.01, § 22.06, at 22-13 (1991). The precise definition of watershed protection purposes remains unsettled and is the subject of intense litigation. *See infra* notes 48-51 and accompanying text.

47. *See New Mexico*, 438 U.S. at 702.

48. 744 P.2d 491, 498 (Colo. 1987). In *Jesse*, the Forest Service argued that appropriators diverting water on national forest land were injuring a primary purpose of the forest by reducing streamflows and threatening the equilibrium necessary for preserving natural stream channels. *Id.* Earlier cases had rejected similar flow requests on the basis of a lack of proof. *See* United States v. Denver, 656 P.2d 1, 22 (Colo. 1982) (finding that the government had failed to demonstrate that rights to instream flow were necessary to fulfill the forest's primary purposes); United States v. Alpine Land & Reservoir Co., 697 F.2d 851, 859 (9th Cir. 1983); Avondale Irrigation Dist. v. North Idaho Properties, Inc., 577 P.2d 9, 18 (Idaho 1978) (holding that the forest fire and erosion control may require instream flows, but that the federal government had not demonstrated the necessity).

49. 744 P.2d at 503.

half of the annual flow of numerous headwater streams for such watershed protection purposes as preventing destabilization of stream channels and associated erosion, flooding, and loss of riparian vegetation.[50] In a ninety-six day trial, the method proffered by the Forest Service for quantifying water needs was severely challenged by the state and by water rights holders as imprecise and generally unreliable.[51] As yet, no decision has been handed down.

As a result of *United States v. New Mexico*, water necessary for "secondary" national forest purposes — such as preservation of fish and wildlife, recreation, stock watering, and aesthetics — must be obtained from the state.[52] There are several ways to do this, all of which require circumventing the rigidity of the traditional prior appropriation system. One way is by securing appropriation rights, which some states in the West have extended to instream flows.[53] Another approach is to use the instream flow programs instituted in many states to complement appropriation rights.[54] And in California, the national forests possess state law riparian rights that may include streamflows for fish and wildlife and recreational purposes.[55] In sum, the securing of water for secondary national forest purposes is now left largely to the vagaries of the individual states.

B. Wilderness Areas

Streamflows in wilderness areas have provoked considerable controversy and a good deal of litigation.[56] The Solicitor of the Department of

50. *See* Montaño, *supra* note 46, § 22.03, at 22-5 to 22-6.

51. Montaño, *supra* note 46, § 22.06, at 22-13 to 22-14.

52. *See supra* notes 40-47 and accompanying text.

53. *See, e.g.*, State v. Morros, 766 P.2d 263, 266-68 (Nev. 1988) (holding that because the state's definition of "beneficial use" included recreation, a physical diversion was no longer a prerequisite for an appropriation right); McClellan v. Jantzen, 547 P.2d 494, 496-97 (Ariz. Ct. App. 1976) (recognizing of wildlife and recreation as "beneficial uses" obviates the diversion requirement).

54. *See generally* INSTREAM FLOW PROTECTION, *supra* note 12; Johnson & DuMars *supra* note 14, at 361-67.

55. *In re* Water of Hallett Creek Stream Sys., 749 P.2d 324, 325 (Cal.), *cert. denied*, 488 U.S. 824 (1988). These federal riparian rights are subject to state administrative control and may be restricted where they conflict with social needs. *Id.* at 336-37. Unreserved lands administered by the Bureau of Land Management (BLM) theoretically possess riparian rights, but these rights were subordinated to those of subsequent appropriators by the Desert Land Act. *Id.* at 334-35. *See* Freyfogle, *supra* note 13 (analyzing the result in Hallett Creek in the context of changing notions of property law).

56. *See generally* Robert H. Abrams, *Water in the Western Wilderness: The Duty to Assert Reserved Water Rights*, 1986 U. ILL. L. REV. 387 (arguing that the Wilderness Act leaves federal managers with no discretion to choose not to assert reserved water rights for wilderness uses); Jason Marks, Comment, *The Duty of Agencies to Assert Reserved Water Rights in Wilderness Areas*, 14 ECOLOGY L.Q. 639 (1987) (recognizing a duty of federal agencies to assert wilderness reserved rights, but concluding that federal managers have some discretion to decline to exercise the duty); Elinor Colbourn, *The Morality of Wilderness: Federal Reserved Water Rights in Wilderness Areas*, 6 YALE L. & POL'Y REV. 157 (1988) (proposing a "wilder-

the Interior first claimed that the Wilderness Act[57] reserved water sufficient to fulfill the act's purposes of preserving areas in their natural condition for "recreational, scenic, scientific, educational, conservation, and historical use[s]"[58] but later recanted.[59] Thus, the federal government has never pressed wilderness water claims in court. Environmentalists have, however, and a federal district court in Colorado ruled that water was reserved for wilderness purposes upon wilderness designation.[60] The Tenth Circuit subsequently reversed, refusing to require the Forest Service to submit wilderness water protection plans and determining that the reserved water right issue was not ripe.[61] The court did not find that the Forest Service's failure to claim reserved wilderness water rights posed an "irreconcilable threat" to the Wilderness Act's preservationist mandate.[62] As a result, the Forest Service apparently need not assert wilderness water rights in ongoing water adjudications. Yet, under Colorado law, failure to assert a wilderness water right could result in its effective relinquishment through loss of the reserved right's chief value, its early priority date.[63]

The Tenth Circuit's inability to perceive a conflict between wilderness uses and other uses was not very surprising, since most existing wilderness areas are located high in national forest watersheds above existing diversions.[64] But as Congress designates wilderness areas on lands managed by the Bureau of Land Management (BLM),[65] conflicts

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ness water rights bill" expressly including instream uses within Congress' primary purposes for establishing wilderness areas, setting the reservation date as the priority date, and providing for administrative review of agency failures to assert reserved rights); Janice L. Weis, Note, *Federal Reserved Water Rights in Wilderness Areas: A Progress Report on a Western Water Fight*, 15 HASTINGS CONST. L.Q. 125 (1987) (making a proposal similar to that of Colbourn, *supra*, but also advocating statutory integration of federal reserved rights into state water law systems). More than 90 million acres of federal land had been designated as wilderness by 1988. GEORGE C. COGGINS, 2 PUBLIC NATURAL RESOURCES LAW § 14.04[1] at 14-16 (1990).

57. Wilderness Act of 1964, Pub. L. No. 88-577, 78 Stat. 890 (codified as amended at 16 U.S.C. §§ 1131-1136 (1988)).

58. Federal Water Rights of the Nat'l Park Serv., Fish and Wildlife Serv., Bureau of Reclamation and the Bureau of Land Management, 86 Interior Dec. 553, 609-10 (1979) (construing 16 U.S.C. §§ 1131(a), 1133(b) (1988)).

59. Federal Reserved Water Rights in Wilderness Areas, 96 Int. Dec. 211 (Supp. III 1988), *modifying and superseding* 86 Interior Dec. 553, 609-10 (1979)

60. Sierra Club v. Block, 622 F. Supp. 842, 859-60 (D. Colo. 1985), *modified*, Sierra Club v. Lyng, 661 F. Supp. 1490 (D. Colo. 1987) (rejecting a two-page Forest Service protection plan), *rev'd sub nom.*, Sierra Club v. Yeutter, 911 F.2d 1405 (10th Cir. 1990).

61. 911 F.2d at 1417-21.

62. *Id.* at 1414.

63. *See* United States v. Bell, 724 P.2d 631, 643-45 (Colo. 1986) (holding that the federal government's failure to assert the full scope of a reserved water right cost it six decades of temporal seniority).

64. Leshy, *supra* note 39, at 396-97.

65. Section 603 of the Federal Land Policy and Management Act (FLPMA) required BLM to study roadless areas and make wilderness recommendations by 1991. Pub. L. No. 94-

will increase because BLM lands are not usually located at the headwaters of streams.[66] Because new wilderness designations carry late priority dates, new wilderness water rights do not threaten the vested rights of existing water rights holders. But Western States nonetheless generally oppose such rights because they reduce the states' flexibility to allocate unappropriated water.[67] Despite this opposition, in the Arizona Desert Wilderness Act of 1990, the first federal act designating statewide BLM lands as wilderness, Congress expressly reserved "a quantity of water sufficient to fulfill the purposes of this title."[68] The issue of reserved water rights for wilderness areas likely will remain among the most controversial issues in wilderness designation.

C. *National Parks and Monuments*

The national park system, which includes national parks and national monuments, expressly encompasses "water" in its definition.[69] Fulfilling the primary purpose of the national parks — "to conserve the scenery and the natural and historic objects and the wild life therein . . . by such means as will leave them unimpaired for the enjoyment of future generations"[70] — will almost certainly require the reservation of substantial instream flows.[71]

The leading case is *Cappaert v. United States* in which the Supreme Court ruled that the federal government was entitled to reserve water in Devil's Hole National Monument in quantities sufficient to protect the desert pupfish, a rare species of fish of interest to the scientific community.[72] After closely scrutinizing the presidential proclamation establishing the monument, the Court concluded that the proclamation reserved enough water to protect the pupfish.[73] Consequently, the Justices ap-

579, § 603, 90 Stat. 2743, 2785 (codified at 43 U.S.C. § 1782 (1988)). For a brief explanation of the purposes of the FLPMA, see *infra* note 95.

66. *See* PUBLIC LAND LAW REVIEW COMMISSION, ONE THIRD OF THE NATION'S LAND 141 (1970).

67. *See* Leshy, *supra* note 39, at 407-12 (noting potential conflicts over water right transfers, interstate water allocations, and new water projects).

68. Pub. L. No. 101-628, § 101(g), 104 Stat. at 4469, 4473.

69. 16 U.S.C. § 1c(a) (1988) ("The 'national park system' shall include any area of land *and water* . . . administered . . . through the National Park Service for park, monument, historic, parkway, recreational, or other purposes.") (emphasis added).

70. *Id.* § 1. Although national monuments are now part of the national park system, they are authorized under the 1906 Antiquities Act, which enables the President to reserve "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest. . . ." 16 U.S.C. § 431 (1988) (originally enacted as Antiquities Act of 1906, ch. 3060, § 2, 34 Stat. 225).

71. *See* A. Dan Tarlock, *Protection of Water Flows for National Parks*, 22 LAND & WATER L. REV. 29, 29-30 (1987); Charles F. Wilkinson, *Water Rights and the Duties of the National Park Service: A Call for Action at a Critical Juncture, in* OUR COMMON LANDS: DEFENDING THE NATIONAL PARKS 261 (David J. Simon ed., 1988).

72. 426 U.S. 128, 141-42, 147 (1976).

73. *Id.* at 141.

proved an injunction of the groundwater pumping that was depleting the water level in the monument.[74]

Not surprisingly, state courts have been parsimonious in their recognition of park system reserved rights. For example, Colorado courts have narrowly interpreted the purposes of Dinosaur National Monument by ruling that neither the presidential proclamation creating the monument nor the Antiquities Act[75] reserved water for rafting or for fish and wildlife species which were not of historic or scientific interest.[76] In so holding, the Colorado Supreme Court distinguished Dinosaur from Rocky Mountain National Park, a park whose purposes were held to be broader and to include conserving scenery, historic and scientific objects, and wildlife, as well as providing means for the enjoyment of these attributes of the park.[77]

D. National Wildlife Refuges and Wild and Scenic Rivers

Fulfilling the primary purposes of National Wildlife Refuges and Wild and Scenic Rivers will require substantial amounts of water. Although the definition of the National Wildlife Refuge System includes water and calls for the protection and conservation of fish and wildlife, the particular purposes of individual refuges depend on the executive order or statute establishing the area.[78] The Supreme Court awarded reserved water rights to the Havasu Lake and Imperial National Wildlife Refuges in its *Arizona v. California* decision.[79] Subsequently, the Ninth Circuit ruled that the Kenai National Moose Range possessed reserved water.[80]

As a matter of policy, the Interior Department claims refuge reserved rights for both "consumptive and non-consumptive water uses necessary for the conservation of migratory birds and other wildlife (*e.g.*, watering needs, habitat protection, ecosystem food supply, fire protection, soil and erosion control) and attendant . . . personnel needs (*e.g.*,

74. *Id.* The *Cappaert* Court did not resolve the question of the applicability of the reserved rights doctrine to groundwater. *See infra* note 175 and accompanying text.

75. *See supra* note 70 and accompanying text.

76. United States v. Denver, 656 P.2d 1, 27-29 (Colo. 1982); *see also* MEYERS ET AL., *supra* note 26 at 802 (discussing the subsequent decision on remand to the water court, in which the court held that nothing in the Presidential Proclamation or underlying documents "suggests that fishes or other wildlife were thought . . . to be of scientific, biological, or historic importance . . . ." (quoting *In re* Water Rights in Dinosaur Nat'l Monument, Case No. W-86 (D. Colo. Water Div. No. 6 Mar. 21, 1985))).

77. *Denver*, 656 P.2d at 28, 30.

78. 16 U.S.C. § 668dd(a)(1) (1988) (stating that the National Wildlife Refuge System includes "all lands, waters, and interests therein administered . . . as wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas. . . .").

79. 373 U.S. 546, 601 (1963), *decree entered*, 376 U.S. 340, 346 (1964).

80. United States v. Alaska, 423 F.2d 764, 766-67 (9th Cir. 1970).

refuge staff domestic needs)."[81] Wildlife refuge reserved water rights will no doubt produce significant conflicts with state water rights holders because, unlike many forests and parks, most refuges are located at low elevations, downstream from diversions.[82] And unlike BLM lands recently designated wilderness areas, most refuges carry early priority dates because they were established long ago.[83]

The Wild and Scenic Rivers Act expressly reserves water for a designated wild and scenic river, but only in "quantities . . . necessary to accomplish [the designated] purposes."[84] These purposes include protection of "scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values . . . preserved in free-flowing condition."[85] The Interior Department has acknowledged that "river designation does not automatically reserve the entire unappropriated flow of the river," but Interior will claim reserved water necessary to protect the particular aesthetic, recreational, scientific, biotic, or historic features that led to the river's designation.[86] There has been no reported litigation involving wild and scenic river reserved water rights.[87]

E. Bureau of Land Management Lands

Generally, Bureau of Land Management (BLM) lands possess no reserved water rights because, according to the Interior Department,

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81. Federal Water Rights of the Nat'l Park Serv., Fish and Wildlife Serv., Bureau of Reclamation and the Bureau of Land Management, 86 Interior Dec. 553, 604 (1979). Recreational uses in refuges do not create reserved rights because they are secondary refuge purposes. *Id.* at 606-07.

82. *See* GEORGE C. COGGINS & CHARLES F. WILKINSON, FEDERAL PUBLIC LAND AND RESOURCES LAW 405 (2d ed. 1987).

83. Some wildlife refuges were created as early as the turn of the century. *Id.* at 815.

84. 16 U.S.C. § 1284(c) (1988). The act contains a classic non sequitur in an adjoining provision: "Nothing in this chapter shall constitute an express or implied claim or denial on the part of the Federal government as to exemption from State water laws." *Id.* § 1284(b). The Interior Solicitor concluded that "no consistent reading of this provision appears possible." *Federal Water Rights*, 86 Interior Dec. at 608 n.99.

85. 16 U.S.C. § 1271 (1988). *See* Brian E. Gray, *No Holier Temples: Protecting the National Parks Through Wild and Scenic River Designation*, 58 COLO. L. REV. 551 (1986) (suggesting how the Wild and Scenic Rivers Act can be used to enhance the existing statutory protections for water resources in national parks). Designated rivers may be classified as "wild," "scenic," or "recreational," and designation may be limited to segments of rivers. A wild river is essentially pristine; a scenic river is free of impoundments and major shoreline development but is accessible by road; a recreational river is readily accessible with some impoundment and shoreline development. 16 U.S.C. § 1273(b) (1988). As of 1991, 118 rivers and major river segments in 29 states had been designated as part of the wild and scenic river system. Many of these designated rivers are found in Western States. *See id.* § 1274(a).

86. *Federal Water Rights*, 86 Interior Dec. at 608-09.

87. One issue that might be litigated concerns § 13(d) of the act which provides that state jurisdiction is unaffected by wild and scenic river designation if "such jurisdiction may be exercised without impairing the purposes" of the act. 16 U.S.C. § 1284(d) (1988). This provision might be interpreted as preempting state laws that authorize water diversions which adversely affect the purpose of designating a river as wild and scenic, even in the absence of a reserved rights claim by the federal land manager.

such lands are not reserved for particular purposes.[88] The D.C. Circuit has upheld this view.[89] But some BLM lands that have been reserved for specific purposes — such as public springs and water holes, oil shale reserves, and designated wilderness areas and wild and scenic rivers — do have reserved water rights.[90] These rights, however, are limited. For example, according to the Colorado Supreme Court, water contained in public springs and waterholes withdrawn under a 1926 Executive Order, known as Public Water Reserve 107,[91] is reserved only to an extent sufficient to prevent monopolization of the water for a single use.[92] Lands withdrawn for oil shale purposes under 1916 and 1924 Executive Orders may have reserved rights, but only for "purposes of investigation, examination and classification" of oil shale reserves, not for oil shale development.[93]

According to the Interior Department, power site withdrawals, lands classified for grazing, wild horse ranges, and Oregon and California

88. *See Federal Water Rights* at 588 n.53. In 1988, the BLM managed approximately 174 million acres of the "least economically productive land" in the 48 contiguous states and retained jurisdiction over another 167 million acres in Alaska. COGGINS & WILKINSON, *supra* note 82, at 162.

89. Sierra Club v. Watt, 659 F.2d 203, 206 (D.C. Cir. 1981).

90. *See infra* notes 92-93 and accompanying text.

91. Exec. Order No. 4419, *reprinted in* Selections, Filings, or Entries of Lands Containing Springs or Water Holes, 51 Interior Dec. 457, 457 (1926) (withdrawing public springs and water holes from availability for "settlement, location, sale, or entry" to prevent monopolization of water sources in arid regions and to preserve water for domestic uses and stock watering).

92. United States v. Denver, 656 P.2d 1, 32 (Colo. 1982) (rejecting an Interior Department claim that the total yield of the springs and water holes was reserved). *See Federal Water Rights*, 86 Interior Dec. at 581-88 (finding the purposes of the 1926 withdrawal to include water for growing crops, sustaining fish and wildlife, and for flood, soil, fire, and erosion control and concluding that the entire yield of the springs and waterholes had been reserved). The Interior position has been sharply criticized. Trelease, *supra* note 41, at 761-63 (charging that the Solicitor "invent[ed]" a broad interpretation of the purposes of the 1926 Order that "seems totally at war with the 'primary purpose' doctrine of *New Mexico* . . . ."). However, the *Denver* court did rule that the federal government could claim reserved rights in tributary springs and waterholes. 656 P.2d at 33. This result was contrary to Hyrup v. Kleppe, 406 F. Supp. 214, 216 (D. Colo. 1976) (holding that tributary waters were not reserved by the 1926 Order).

In a later decision, the Colorado Supreme Court ruled that public water holes originally leased for oil well development and subsequently withdrawn under Public Water Reserve No. 107 may have their entire yield reserved. Park Center Water Dist. v. United States, 781 P.2d 90, 96-97 (Colo. 1989) (relying on language in the Oil and Gas Conversion Act of 1934 (codified as amended at 30 U.S.C. § 229a (1988))), *cert. denied*, 494 U.S. 1079 (1990). The *Park Center* court assumed that groundwater could be the subject of reserved rights, 781 P.2d at 95 n.13, a result at odds with the Wyoming Supreme Court's ruling in the *Big Horn I* case. *In re* Big Horn River (Big Horn I), 753 P.2d 76, 99-100 (Wyo. 1988), *aff'd without opinion*, 492 U.S. 406 (1989). See the discussions at *supra* note 74 and *infra* note 175.

93. *Federal Water Rights*, 86 Interior Dec. at 591-92; Jan G. Laitos, *The Effect of Water Law on the Development of Oil Shale*, 58 DENV. L.J. 751, 774-77 (1981); *see generally* William F. Holland, *Mixing Oil and Water: The Effect of Prevailing Water Law Doctrines on Oil Shale Development*, 52 DENV. L.J. 657, 682-90 (1975) (discussing the relationship between federal reserved water rights and oil shale development).

timber lands have no reserved rights.[94] Moreover, the Federal Land Policy and Management Act[95] (FLPMA) does not reserve water for BLM lands.[96] Federal land management plans required by that statute might, however, confer federal regulatory rights.[97]

F. Other Reserves

Both national recreation areas and military reservations possess reserved water rights, although they seldom assert and infrequently litigate them.[98] The Supreme Court upheld an award of reserved rights for the Lake Mead National Recreation Area in *Arizona v. California*.[99] There has been no subsequent litigation over reserved rights in national recreation areas.

What little case law exists with respect to military reserved rights includes a district court decision assuming that reserved rights extend to groundwater[100] and a Supreme Court case assuming that naval oil shale and petroleum reserves possess reserved rights.[101] The impact of the latter case was diminished, however, by the Colorado Supreme Court's subsequent ruling that most of the claimed rights had junior priority dates because the federal government failed to assert them in a timely manner.[102]

III
FEDERAL REGULATORY RIGHTS

Reserved rights are particularly threatening to Western States because most federal reservations carry early priority dates, making these rights senior to many state water rights. Therefore, especially for instream flows, successful assertion of federal reserved rights will defease many vested state rights. Federal regulatory rights, by contrast, do not affect vested rights in states employing the prior appropriation system,

94. *Federal Water Rights*, 86 Interior Dec. at 590-94. *Cf. Denver*, 656 P.2d at 33-34 (rejecting a claim for reserved water for geothermal production).

95. 43 U.S.C. § 1701-84 (1988). FLPMA provides the Bureau of Land Management with a framework for managing nonreserved federal lands. *Id.*

96. Sierra Club v. Watt, 659 F.2d 203, 206 (D.C. Cir. 1981) (Federal Land Policy and Management Act withdrew no land, and therefore created no water rights).

97. *See infra* § III.

98. *See infra* notes 99-102 and accompanying text.

99. 373 U.S. 546, 601 (1963), *decree entered*, 376 U.S. 340, 345-46 (1964).

100. Nevada *ex rel.* Shamberger v. United States, 165 F. Supp. 600, 604-11 (D. Nev. 1958) (state law does not govern federal groundwater pumping at a naval munitions depot), *aff'd on other grounds*, 279 F.2d 699 (9th Cir. 1960).

101. United States v. District Court in & for Water Div. No. 5, 401 U.S. 527, 529 (1971).

102. United States v. Bell, 724 P.2d 631, 643-44 (Colo. 1986) (rejecting a federal argument that its entire reserved right should relate back to the date of its original filing on the grounds that the amended claim did not satisfy the state's notice requirement).

since regulatory rights obtain priority dates based on the date of use,[103] which dates tend to be relatively late. These regulatory rights do, however, threaten state sovereignty because they arise independently of federal land ownership, need not be acquired under state law, and limit state flexibility to allocate unappropriated water.[104]

Recognition of federal regulatory rights grew out of the Supreme Court's *United States v. New Mexico* decision, which limited the scope of reserved rights on federally-reserved land to that amount required to accomplish the "primary purpose" of the reservation.[105] Water used for "secondary purposes" in national forests, such as flows for fish and wildlife or for recreation, was to be secured under state law[106] or, under a theory first propounded by Interior Solicitor Krulitz in 1979, pursuant to what he called federal "nonreserved" water rights.[107] According to Krulitz, since the federal government has the constitutional authority to preempt state water laws in order to implement federal purposes and programs, it could "appropriate water on its own property for congressionally authorized uses, whether or not such uses are part of any 'reservation' of land."[108] Given this power to preempt state law, the only issue is whether Congress in fact delegated sufficient authority to federal agencies to appropriate water in a manner inconsistent with state law.[109]

Krulitz called these federal water rights "non-reserved" rights because they do not arise from federal land reservations; they are, however, better thought of as federal regulatory water rights because of the role

103. *Federal Water Rights*, 86 Interior Dec. at 574. The date of use for regulatory rights is "the date action was taken [by the federal government] leading to an actual use [of water to fulfill Congress' statutory purposes] whether consumptive or non-consumptive . . . ." *Id.*

104. In the latter respect, the effect of federal regulatory rights is similar to the effect of creating reserved rights by designating new wilderness areas. *See supra* note 67 and accompanying text.

105. *See supra* notes 41-47 and accompanying text.

106. *New Mexico*, 438 U.S. 696, 708 (1978). State law was considered by many to be an inadequate alternative because many states would not recognize federal instream uses as beneficial uses under the appropriation system. For example, many states did not protect instream flows because they required a diversion as a fundamental element of the exercise of a water right. *See* INSTREAM FLOW PROTECTION, *supra* note 12, at 1-2. State hostility to instream uses has gradually dissipated; today most Western states have some form of instream flow program. *See supra* notes 12-15 and accompanying text.

107. *Federal Water Rights*, 86 Interior Dec. at 574-78. *See* Bruce A. Machmeier, Note, *Federal Acquisition of Non-Reserved Water Rights After* New Mexico, 31 STAN. L. REV. 885 (1979) (concluding that Congress possesses sufficient constitutional power not only to acquire water and change water uses without regard to state law but also to delegate that authority to federal agencies).

108. *Federal Water Rights*, 86 Interior Dec. at 574-78 (relying on the Constitution's supremacy clause, U.S. CONST., art. VI, cl. 2).

109. *See* Federal "Non-Reserved" Water Rights, 6 Op. Off. Legal Counsel 328, 381 (1982) [hereinafter Dept. of Justice Memorandum] ("[F]ederal water rights may be asserted without regard to state law [either through] specific congressional directives . . . that override inconsistent state law . . . [through] the establishment of primary purposes for the management of federal lands . . . that would be frustrated by the application of state law.").

they play in implementing federal policies and programs.[110] They have been subjected to attack by academic commentators,[111] and were first limited, then ultimately denied altogether by subsequent Interior Solicitors.[112] Although the Justice Department has acknowledged the validity of the concept, it concluded that the traditional federal deference to state water law creates a presumption against the preemption of state water law that would be entailed by such rights.[113] Moreover, the original application of federal "nonreserved" water rights — to enable land managers to appropriate water for use on nonreserved lands or for secondary purposes — is unlikely if the next administration retains the current administration's hostility to the idea.[114] Nevertheless, federal regulatory water rights do exist and have been upheld in a variety of contexts under the Clean Water Act, the Endangered Species Act, and the Federal Power Act, as indicated in the material below.

A. Clean Water Act

Section 101(g) of the Clean Water Act (CWA),[115] added by the 1977 amendments, declares the policy of Congress not to supersede, abrogate,

110. *See* MEYERS ET AL., *supra* note 26, at 921-25, 929-31, 934-36, 938-48 (providing an overview of the historical development and implementation of federal regulatory water rights); *see also* Charles T. Dumars & A. Dan Tarlock, *Symposium Introduction: New Challenges to State Water Allocation Sovereignty*, 29 NAT. RESOURCES J. 331, 342-43 (1989) (describing potential adverse impacts of federal regulatory rights on state water law systems); George Cameron Coggins, *Watershed as a Public Natural Resource on the Federal Lands*, 11 VA. ENVTL. L.J. 1, 38-39 (1991).

111. *See* Trelease, *supra* note 41, at 763-70 (arguing that the Solicitor's opinion flew in the face of the decision in *New Mexico* and amounted to an express claim by the U.S. that it was exempt from the requirements of state water law); David D. Freudenthal, Comment, *Federal Non-Reserved Water Rights*, 15 LAND & WATER L. REV. 68 (1980) (questioning the legal reasoning behind the Solicitor's opinion and predicting that implementation of federal "nonreserved" rights would have disastrous effects on state allocation systems).

112. Supplement to Solicitor's Opinion on Federal Water Rights, 88 Interior Dec. 253, 255-57 (1981) (while Congress could create federal "non-reserved" water rights, it did not intend to do so when it enacted the Federal Land Policy and Management Act); Nonreserved Water Rights - United States Compliance with State Law, 88 Interior Dec. 1055, 1064-65 (1981) (denying the existence of federal "nonreserved" water rights) *rescinding in part* 86 Interior Dec. 553 (1979) & 88 Interior Dec. 253 (1981).

113. Dept. of Justice Memorandum, *supra* note 109, at 332. *See* John Shurts, *FLPMA, Fish and Wildlife, and Federal Water Rights*, 15 ENVTL. L. 115 (1985) (analyzing the Dept. of Justice memorandum and concluding that while principles of comity should encourage federal agencies to attempt to procure instream flows under state allocation systems, those agencies have the authority and duty under federal law to procure such flows in defiance of state law).

114. *Cf.* Sierra Club v. Yeutter, 911 F.2d 1405, 1408-09 (10th Cir. 1990) (suggesting that the Attorneys General for the current and preceding administrations were reluctant to assert even federal reserved rights in wilderness areas). *But see* CHARLES F. WILKINSON & H. MICHAEL ANDERSON, LAND AND RESOURCE PLANNING IN THE NATIONAL FORESTS 231-35 (1987) (arguing that the Forest Service's organic legislation contains sufficient authority to overcome the presumption against federal water rights with respect to "secondary" forest purposes such as fish and wildlife protection).

115. 33 U.S.C. §§ 1251-1387 (1988 & Supp. II 1990).

or otherwise impair the states' authority to allocate water, protects existing water rights from loss due to Clean Water Act requirements, and directs federal agencies to cooperate with state and local agencies to develop solutions to water pollution in concert with water resource management.[116] However, the chief sponsor of this provision, Senator Wallop, stated that section 101(g) was not designed to limit Clean Water Act effluent limits, water quality standards, or permit requirements.[117] And courts have upheld permit denials even to vested water rights holders.[118] As a result, the Clean Water Act can be a powerful means of protecting streamflows under certain conditions.

The leading case in this area is *Riverside Irrigation District v. Andrews*, which upheld denial of a Clean Water Act permit to construct a dam that would affect downstream water flows to the detriment of endangered species habitat some 300 miles away, despite the fact that the permit applicant held vested state water rights.[119] Significantly, the court did not interpret the Wallop Amendment to bar permit denial,[120] noting instead that the provision was merely a policy declaration that must give way to the statute's more specific requirements.[121] The Wallop Amendment therefore serves as an admonition to federal regulators to accommodate state water rights where possible but does not bar the application of federal permits or standards requiring streamflow maintenance.[122]

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116. *Id.* § 1251(g) [hereinafter the Wallop Amendment].

117. Senator Wallop cautioned that § 101(g) was designed to limit Clean Water Act regulation to purposes related to water quality. He stated:

> This 'State's jurisdiction' amendment reaffirms that it is the policy of Congress that this act is to be used for water quality purposes only . . . .
>
> This is not intended to create a new cause of action. *It is not intended to change existing law, for a similar prohibition is contained in section 510 of the act.* . . . Legitimate water quality measures authorized by this act may at times have some effect on the method of water usage. Water quality standards and their upgrading are legitimate and necessary under this act. *The requirements of section 402 and 404 permits may incidentally affect individual water rights.* Management practices developed through state or local 208 planning units may also incidentally effect [sic] the use of water under an individual water right. It is not the purpose of this amendment to prohibit those incidental effects.

123 CONG. REC. 39,211-12 (1977) (emphasis added).

118. *See* Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985), *aff'g* 568 F. Supp. 583, 586-90 (D. Colo. 1983).

119. *Id.* at 513-14.

120. 758 F.2d at 513. It should be noted that the permit that was denied was a section 404 general permit, a permit which cannot be granted if the discharge may have adverse effects on endangered species. 33 C.F.R. § 330.5(b)(3) (1991). The applicant still could be granted an individual section 404 permit, however, and the court indicated that an "accommodation" reached through the individual permit process was the preferred outcome of the case. 758 F.2d at 513.

121. *Id.* The district court noted that Senator Wallop's remarks, *supra* note 117, indicated that § 101(g) was not intended to change existing law or limit § 404's jurisdictional scope. 568 F. Supp. at 589.

122. *See Riverside Irrigation*, 758 F.2d at 513; *see also* United States v. Akers, 785 F.2d

Despite the existence of sufficient authority in the Clean Water Act to require states to set minimum streamflows as an element of water quality standards,[123] EPA has never invoked this authority.[124] Nevertheless, Clean Water Act-required minimum streamflows may be on the horizon, given the CWA's directive that EPA review state water quality standards every three years;[125] EPA's policy requiring states to show improvements every three years;[126] and EPA's authority to promulgate water quality standards for recalcitrant states.[127] This is especially true

814, 820-21 (9th Cir.) (approving the language in *Riverside Irrigation* which recognized the value of accommodation of both state and federal concerns in the permitting process), *cert. denied*, 479 U.S. 828 (1986). *See also* A. Dan Tarlock, *The New Commons in Western Waters*, *in* WATER AND THE AMERICAN WEST: ESSAYS IN HONOR OF RAPHAEL J. MOSES 69, 80-82 (David H. Getches ed., 1988) (predicting that "traditional ground rules underlying state water rights will [not] remain untouched" by the power of the federal government to assert regulatory water rights); DuMars & Tarlock, *supra* note 110, at 342-43 (arguing that federal regulatory rights pose problems for states because they lack limiting characteristics found in traditional property rights and that Congress has been ineffective in its efforts to integrate regulatory rights into state water law systems).

123. *See, e.g.*, 33 U.S.C. § 1313(2)(A) (state water quality standards "shall . . . tak[e] . . . into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes. . . ."). In Arkansas v. Oklahoma, 112 S. Ct. 1046 (1992), the Supreme Court ruled that EPA could issue a water pollution permit for an Arkansas municipal treatment plant located about 40 miles upstream from the Oklahoma border despite an Oklahoma state water quality standard forbidding degradation of the quality of the stream in question. The Court upheld EPA regulations requiring compliance with downstream states' water quality standards, *id.* at 1056-57, but rejected a categorical ban on discharges affecting waters already in violation of water quality standards, *id.* at 1057-58, and affirmed an EPA interpretation that "actually detectable or measurable" changes in water quality were a prerequisite for a violation of the Oklahoma non-degradation standard. *Id.* at 1058-60. Thus, downstream state water quality standards are enforceable against upstream states where upstream state discharges produce detectable changes in water quality.

124. EPA once considered developing a policy encouraging states to "prohibit alteration or restriction of natural flows that would interfere with fishable, swimmable water quality." 43 Fed. Reg. 29,591 (1978) (preamble to proposed regulation). It subsequently abandoned the attempt. In fact, EPA has stated that it is common practice for state water quality standards to include a designated "design event," a low streamflow (usually the lowest seven-day average expected every 10 years) which triggers a suspension of water quality standards. *See* William F. Pedersen, *Turning the Tide on Water Quality*, 15 ECOLOGY L.Q. 69, 95 (1988) ("Many individual water quality standards simply do not apply at very low streamflow levels.") (citing OFFICE OF POLICY, PLANNING AND EVALUATION, EPA, WATER INNOVATIONS PROJECT: SUMMARY REPORT II (June 5, 1984) (preliminary discussion draft)).

125. 33 U.S.C. § 1313(c) (1988) (requiring the establishment of water quality standards and their subsequent review by public hearing at least once in each 3 year period).

126. 40 C.F.R. §§ 131.2, 131.20(a) (1991). The regulations require the state to show that improved water quality is unattainable by reasonably available control measures. Reduction of water quality is possible but narrowly restricted to situations in which existing water quality exceeds swimmable, fishable levels and the state determines that "allowing lower water quality is necessary to accommodate important economic or social development in the area." *Id.* § 131.12(a)(2). In order to meet the required improvement, EPA theoretically could promulgate a standard specifying a particular streamflow level.

127. Mississippi Comm'n on Natural Resources v. Costle, 625 F.2d 1269, 1278 (5th Cir. 1980) (holding that the Clean Water Act authorizes EPA to promulgate substitute water quality standards for state standards which it disapproves); *see also* Jeffrey M. Gaba, *Federal Su-*

for streams not meeting water quality standards even after the CWA provisions calling for toxic control strategies[128] or the setting of maximum daily loads[129] have been invoked.[130]

B. Endangered Species Act

The Endangered Species Act (ESA)[131] also contains a provision, the Simpson Amendment, calling for federal cooperation with state and local water resource agencies to resolve endangered species concerns.[132] But the Simpson Amendment is even more hortatory in nature than the Clean Water Act's Wallop Amendment,[133] and therefore does not bar federal regulation affecting streamflows.[134] Thus, ESA regulation affecting streamflows can result from the federal consultation process the ESA prescribes in order to avoid jeopardy to the continued existence of listed species or adverse modification of their critical habitat.[135] In the leading

pervision of State Water Quality Standards Under the Clean Water Act, 36 VAND. L. REV. 1167, 1171-72 (1983) (discussing EPA's role in setting state water quality standards when it determines state proposals are inadequate).

128. 33 U.S.C. § 1314(l) (1988) (requiring states to identify waters not meeting water quality standards due to toxic pollutants and develop "individual control strategies" to achieve compliance with the standards within three years and requiring EPA to promulgate individual control strategies if a state does not).

129. 33 U.S.C. § 1313(d) (1988) (requiring states to identify waters not meeting water quality standards, to establish "total maximum daily load[s]" for non-toxic pollutants and to allocate available loadings (according to unspecified criteria) among point sources and requiring EPA to set total loadings if a state does not). *See* Scott v. City of Hammond, Indiana, 741 F.2d 992 (7th Cir. 1984) (allowing a citizen suit challenging EPA's failure to promulgate total maximum daily loads).

130. One means of affecting streamflows under the Clean Water Act — regulating dams as point source dischargers and requiring them to obtain National Pollution Discharge Elimination Permits — was rejected by EPA. EPA's rejection was subsequently sustained by the courts. National Wildlife Fed'n. v. Gorsuch, 693 F.2d 156 (D.C. Cir. 1982) (definition of point source discharge within EPA's reasonable discretion); National Wildlife Fed'n. v. Consumers Power Co., 862 F.2d 580 (6th Cir. 1988).

131. 16 U.S.C. §§ 1531-44 (1988 & Supp. 1990).

132. 16 U.S.C. § 1531(c)(2) (1988).

133. *See supra* notes 115-18 and accompanying text; *see also* Riverside Irrigation Dist. v. Andrews, 758 F.2d 508, 513-14 (10th Cir. 1985).

134. *See* United States v. Glenn-Colusa Irrigation Dist., 788 F. Supp. 1126, 1134 (E.D. Cal. 1992) ("[The Simpson Amendment] does not require, however, that state water rights should prevail over the restrictions set forth in the [ESA]. Such an interpretation would render the [ESA] a nullity.").

135. The ESA consultation process is a procedural means of complying with the act's substantive mandate directing all federal agencies to avoid jeopardy to the continued existence of listed species or adverse modification of their critical habitat. *See* 16 U.S.C. § 1536(a)(2) (1988). Federal agencies must consult with federal fish and wildlife agencies concerning the impact of their proposals on listed species in designated critical habitat. *Id.* § 1536(c)(1). Where an agency cannot conclude that its proposal will not likely have an adverse effect, it must enter into a formal "consultation," which culminates in a biological opinion by a federal fish and wildlife agency. *Id.* § 1536(a)(2), (b)(3)(A). This opinion concludes with a determination as to whether or not the proposal will preclude jeopardy to the species or adverse critical habitat modification, and a listing of measures that might be necessary to avoid jeopardy or adverse habitat modification. *See id.* § 1536(b)(3)(A); *see also* DANIEL J. ROHLF, THE EN-

Riverside Irrigation case,[136] the Tenth Circuit upheld a denial of a CWA general permit to enable satisfaction of ESA consultation requirements through an individual permit process.[137] The object of that consultation process was to ensure sufficient streamflows to maintain critical habitat for the endangered whooping crane.[138]

ESA consultation is directed only at federal agencies and affects nonfederal actions only when an activity requires a federal license or permit.[139] However, the ESA also prohibits the "taking" of an endangered species, a proscription directed not just at federal actions but also at state and private actions.[140] This provision has been invoked to enjoin state-authorized grazing activities that adversely affect a listed species' prospects for recovery[141] and would seem to limit state water rights allocation as well.[142] With over ninety species of fish listed under the ESA's provisions,[143] the advent of federally-prescribed streamflow levels designed to protect species and their habitat seems imminent.[144]

DANGERED SPECIES ACT: A GUIDE TO ITS IMPLEMENTATION AND PROTECTIONS 105-36 (1989) (discussing consultation and assessment procedures under § 7 of the ESA); James C. Kilbourne, *The Endangered Species Act Under the Microscope: A Closer Look From a Litigator's Perspective*, 21 ENVTL. L. 499, 525-60 (1991).

136. 758 F.2d 508 (10th Cir. 1985).

137. *See supra* notes 119-21 and accompanying text.

138. *See Riverside Irrigation*, 758 F.2d at 511.

139. 16 U.S.C. § 1536(a)(2); *see also* 16 U.S.C. § 1532(12) (defining "permit applicant" in a case where an exemption is sought under § 7 of the ESA as "any person whose application . . . for a permit or license has been denied primarily because of the application of § 1536(a)").

140. *Id.* § 1538. *See* ROHLF, *supra* note 135, at 59-60 (noting that the prohibition applies to states and private actors); Kilbourne, *supra* note 135, at 572-84 (discussing different actions which qualify as "takings").

141. Palila v. Hawaii Dept. of Land and Natural Resources, 649 F. Supp. 1070 (D. Haw. 1986), *aff'd*, 852 F.2d 1106 (9th Cir. 1988).

142. United States v. Glenn-Colusa Irrigation Dist., 788 F. Supp. 1126, 1133 (E.D. Cal 1992) (pumping water for an irrigation diversion held to be a prohibited "taking" under the ESA).

143. Some 98 different species of fish were protected under the ESA as of October 1, 1991. 50 C.F.R. § 17.11(h) (1991).

144. The probable means of prescribing streamflow levels would be through an ESA section 7 biological opinion from a federal fish and wildlife agency finding that a proposed action would jeopardize the continued existence of a listed species or adversely modify critical habitat unless certain "reasonable and prudent alternatives" were undertaken. 16 U.S.C. § 1536(b)(3)(A) (1988). Those measures could include maintenance of streamflow levels, but it would be up to the federal agency undertaking or permitting the action, not the fish and wildlife agency rendering the biological opinion, to decide to so condition its action. *See generally* Kilbourne, *supra* note 135, at 543-44 (noting that the "action agency" may reject the advice of the consulting agency and adopt alternative steps to protect the listed species). To date, the federal fish and wildlife agencies seem to have adopted a strategy of forcing water diverters to pay for biological research and habitat enhancement, rather than attempting to use biological opinions to recommend streamflows. *See* U.S. GENERAL ACCOUNTING OFFICE, ENDANGERED SPECIES: LIMITED EFFECT OF CONSULTATION REQUIREMENTS ON WESTERN WATER PROJECTS 28 (1987) (discussing this so-called "Windy Gap" approach as one alternative for resolving conflicts between projects and endangered species).

C. Federal Power Act

The Federal Energy Regulatory Commission (FERC) licenses nonfederal hydroelectric projects under the terms of the Federal Power Act.[145] The operation of these projects can have substantial effects on streamflows. Although FERC licensees usually must obtain state water rights,[146] FERC possesses broad preemptive authority over state laws, including water laws.[147] Historically, FERC has proven insensitive to the importance of instream flows.[148] This problem is only partially alleviated by the Supreme Court's recent clarification that the agency must abide by conditions imposed by federal land managers,[149] whose conditions might include maintenance of streamflow levels. In addition, FERC must abide by conditions imposed by federal fish and wildlife agencies.[150] Streamflow protection is also possible through the FERC licensing process, which includes a wide-ranging consultation process whose object is to ensure that FERC gives "adequate and equitable treatment" to fish and wildlife and other instream concerns in its licensing decisions.[151]

FERC licenses usually incorporate license conditions governing streamflows downstream of projects.[152] These license conditions, which

145. 16 U.S.C. §§ 791a-828(c) (1988); *see generally* 4 WATERS AND WATER RIGHTS, *supra* note 1, ch. 40 at 333-74.

146. 16 U.S.C. § 802(a)(2) (1988) (requiring applicants to furnish the Commission with "satisfactory evidence" of compliance with state water laws). *But see* First Iowa Hydroelectric Coop. v. FPC, 328 U.S. 152, 177-78 (1946) (holding that § 802(a) does not preclude FERC from preempting state requirements).

147. California v. FERC, 495 U.S. 490 (1990), *reaffirming* First Iowa Hydroelectric Coop. v. FPC, 328 U.S. 152 (1946).

148. *See* F. Lorraine Bodi & Eric Erdheim, *Swimming Upstream: FERC's Failure to Protect Anadromous Fish*, 13 ECOLOGY L.Q. 7 (1986); Michael C. Blumm, *A Trilogy of Tribes vs. FERC: Reforming the Federal Role in Hydropower Licensing*, 10 HARV. ENVTL. L. REV. 1 (1986); Lydia T. Grimm, *Fishery Protection and FERC Hydropower Relicensing under ECPA: Maintaining A Deadly Status Quo*, 20 ENVTL. L. 929 (1990).

149. *See* Escondido Mutual Water Co. v. La Jolla Band of Mission Indians, 466 U.S. 765, 772-79 (1984) (construing 16 U.S.C. § 797(e) and holding that conditions specified by the Secretary of the Interior are binding on FERC where projects are located on federal reservations).

150. 16 U.S.C. § 811 (1988). However, FERC has construed this provision not to include project alternatives that affect streamflows. *See* Bodi & Erdheim, *supra* note 148, at 28-32; U.S. GENERAL ACCOUNTING OFFICE, ENERGY REGULATION: ALLEGATIONS CONCERNING THE DEVELOPMENT OF FISHWAYS AT HYDROELECTRIC PROJECTS app. I at 10-12 (No. RCED-88-186, July 1988). *See also* 16 U.S.C. § 823a(c) (1988) (fish and wildlife agencies may impose conditions on projects qualifying for exemptions from licensing). *But see* Scott Paper Co., 37 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,216 (1986) (concerning FERC's refusal to deny exemptions where a fish and wildlife agency lacks information to adequately condition a project or determines that no possible conditions could adequately protect fish and wildlife from a project's adverse effects).

151. 16 U.S.C. § 803(j) (1988); FERC's consultation regulation appears at 18 C.F.R. § 4.38 (1991).

152. *See, e.g.*, Brazos River Auth., 48 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 62,190 at 63,236 (1989) (Article 402 of license for Morris Sheppard Dam, specifying minimum flows for wildlife and recreation); Central Neb. Pub. Power & Irrigation Dist., 50 Fed. Energy Reg.

are effectively federal regulatory water rights, seldom have conflicted with state water laws. Where they have, FERC has not hesitated to impose the license conditions over state objection.[153] Since relicensing authorities must assess project operations on the basis of the regulatory requirements and values existing at the time of relicensing,[154] FERC license conditions specifying streamflow levels should increase as FERC begins to relicense projects first licensed a generation ago.[155]

In sum, although federal land managers have eschewed assertion of regulatory rights necessary to carry out congressional land management directives, EPA, federal fish and wildlife agencies, and FERC can (and have) successfully asserted such rights in implementing the Clean Water, Endangered Species, and Federal Power Acts.

IV
INDIAN RESERVED RIGHTS

As discussed earlier, the reserved rights doctrine first arose in Indian water cases.[156] Most reserved rights that have been quantified have been Indian claims.[157] Like federal reserved rights, Indian rights may be adjudicated in either federal or state court, the latter under McCarran Amendment proceedings.[158] Increasingly, however, Indian reserved rights claims are being negotiated in comprehensive settlements.[159]

Comm'n (CCH) ¶ 61,180 at 61,541-42 (1990) (Article 400 of license for Kingsley Dam calling for a variety of Platte River flows for bald eagle, whooping crane, least tern, and piping plover habitats) *remanded for further consideration*, 876 F.2d 109 (D.C.Cir. 1989); Conway Ranch Partnership, 50 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,406 at 62,252 n.5 (1990) (Article 402 of license for Conway Ranch Diversion requiring project releases to protect Virginia Creek aquatic and riparian resources and wildlife).

153. *See, e.g.*, Brazos River Auth., 48 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 62,190 (1990); Central Neb. Pub. Power & Irrigation Dist., 51 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,257 at 61,751-52 (1990). *See also* Peter J. Kirsh & J. Barton Seitz, *Environmental Protection Through Federal Preemption of State Water Laws*, 20 ENVTL. L. REP. (Envtl. L. Inst.) 10,438, 10,445-46 (1990) (arguing that *California v. FERC*, shifts the balance of power further towards FERC); Bell & Johnson, *supra* note 16, at 37-39 (discussing the Brazos River and Central Nebraska licenses and *California v. FERC*).

154. *See* Confederated Tribes v. F.E.R.C., 746 F.2d 466 (9th Cir. 1984), *cert. denied*, 471 U.S. 1116 (1985). *See also* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 40.10(c) at 372-73.

155. Some 238 FERC projects must be relicensed in the 1990's. 4 WATERS AND WATER RIGHTS, *supra* note 1, § 40.10 at 370.

156. *See supra* notes 21-25 and accompanying text.

157. *See Potential Magnitude of Indian Water Rights* (Chart), WATER STRATEGIST, Oct. 1989, at 2. *See also* John Riley, *The Water Wars*, NAT'L L.J., Feb. 18, 1985, at 1.

158. 43 U.S.C. § 666 (1988); Arizona v. San Carlos Apache Tribe, 463 U.S. 545, 564-65 (1983) (Indian water rights are subject to state jurisdiction under McCarran Amendment adjudications); 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(a)(1) at 252-55. *See supra* note 33.

159. *See* Steven J. Shupe, *Water in Indian Country: From Paper Rights to a Managed Resource*, 57 U. COLO. L. REV. 561 (1986); John A. Folk-Williams, *The Use of Negotiated Settlements to Resolve Water Disputes Involving Indian Rights*, 28 NAT. RESOURCES J. 63

As in the case of federal reserved rights,[160] the measure of Indian reserved rights generally is a function of the purpose of the reservation.[161] There are, however, some complications. First, such purposes are not easily identified in the Indian case because many Indian reservations were established through bilateral negotiations between the federal government and the Indians; their purposes, therefore, are the product of the intentions of both parties.[162] Second, it is unclear whether Supreme Court rules narrowly construing the scope of federal reserved rights, such as the "primary purpose" test,[163] apply to Indian cases. Finally, determining an Indian reservation's purpose and quantifying the waters reserved are sometimes only preliminary steps to measuring instream flows, since some tribes have transferred waters allocated for consumptive uses to instream uses.[164]

A. Purposes of Indian Reservations

The amount of reserved water appurtenant to an Indian reservation is that which is necessary to fulfill the reservation's purpose.[165] Some reservations' purposes include preservation of uses existing at the time of the reservation;[166] these preexisting uses usually concern subsistence ac-

(1988); *see generally* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(c)(1) at 259-63.

160. *See supra* notes 30, 41, 52-53, 62, 75-77, 78-80, 84-90 and accompanying text.

161. *See* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(a) at 219-20. Because fulfillment of the central purpose of Indian reserved rights — which is, as interpreted by some courts, to make productive homelands for the tribes — often requires more water than is required to satisfy the varied purposes of federal reservations, tribal rights are usually more extensive than federal reserved rights. *See infra* notes 163-66 and accompanying text. *See also* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(c) at 224-26 (discussing quantification of Indian reserved rights).

162. *See generally* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02 at 217-18.

163. *See supra* note 42 and accompanying text; United States v. New Mexico, 438 U.S. 696, 700 (1978) (courts must "carefully examine[] both the asserted water right and the specific purposes for which the land was reserved, and conclude[] that without the water the purposes of the reservation would be entirely defeated"); Cappaert v. United States, 426 U.S. 128, 141 (1976) (reserved rights are limited to the amount of water necessary to fulfill the purpose of the reservation, and no more).

164. *See, e.g.*, Arizona v. California (Arizona II), 439 U.S. 419, 422 (1979) (stating that water awarded for consumptive use could be put to uses other than irrigation and other agricultural uses); United States v. Anderson, 736 F.2d 1358, 1365 ("If the tribe chooses to use water reserved for irrigation in a non-consumptive manner, it does not thereby relinquish any of its water rights. . . ."). *But see In re* Big Horn Sys. (Big Horn II), 835 P.2d 273 (Wyo. 1992). *See generally* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(e) at 235.

165. *See supra* note 161 and accompanying text.

166. *See, e.g.*, Colville Confederated Tribes v. Walton, 647 F.2d 42, 47-48 (9th Cir.), *cert. denied*, 454 U.S. 1092 (1981) (preexisting uses of water on Colville Reservation were for farming and fishing), *cert. denied*, 454 U.S. 1092 (1981). On remand, the district court, in an unreported decision, quantified the tribe's water rights for these uses; however the Ninth Circuit reversed because the district court's decree was inconsistent with the appellate court's mandate. 752 F.2d 397, 405 (9th Cir. 1985). *See also* Joint Bd. of Control v. United States, 832 F.2d 1127, 1131-32 (9th Cir. 1987) (preexisting water use on Flathead Reservation was for fishing), *cert. denied*, 486 U.S. 1007 (1988).

tivities such as fishing rights, and their priority dates are "time immemorial."[167] Other reservations were established to enable the Indians to take up new uses such as becoming pastoral agrarians;[168] their priority dates are reservation dates.[169] Occasionally, a reservation's purpose includes both the preservation of existing uses and the encouragement of new ones.[170]

The courts have taken divergent approaches to ascertaining the purposes of Indian reservations. For example, the Montana Supreme Court refused to construe strictly an Indian reservation's purposes, indicating that a liberal interpretation was necessary "to further the federal goal of Indian self-sufficiency."[171] The Ninth Circuit employed the narrow primary purpose test applied by the U.S. Supreme Court to non-Indian reservations in *New Mexico*,[172] but found the purpose of the Colville reservation to be extremely broad, namely to provide a homeland for the tribe.[173] Fulfilling this purpose required water for both irrigation and fishing.[174] By contrast, the Wyoming Supreme Court rejected the homeland rationale and ruled that the Wind River Reservation's purpose was to make the Indians agrarians. The court found that the reservation's reserved water rights were limited to irrigation and did not include groundwater.[175]

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167. *See* United States v. Winans, 198 U.S. 371 (1905) (Yakima Reservation); *see also* 4 WATERS AND WATER RIGHTS, *supra* note 1, §§ 37.01(b)(1), 37.02(a)(2) at 205-08, 221-22 (discussing *Winans*). The Yakima Reservation's purposes include preserving sufficient water for both farming and fishing. *Id.*

168. *See, e.g.*, *In Re* Big Horn River (Big Horn I) (Wind River Reservation), 753 P.2d 76, 97-98 (Wyo. 1988), *aff'd without opinion*, 492 U.S. 406 (1989).

169. *See* Winters v. United States (Fort Belknap Reservation), 207 U.S. 564 (1908). *See also* 4 WATER AND WATER RIGHTS, *supra* note 1, §§ 37.01(b)(2), 37.02(a)(1) at 208-11, 221-21 (discussing *Winters*).

170. *See, e.g.*, United States v. Adair, 723 F.2d 1394, 1408-15 (9th Cir. 1983) (awarding to the Klamath Reservation both a "time immemorial" water right for hunting and fishing and a reservation date for irrigation), *cert. denied*, 467 U.S. 1252 (1983); Joint Bd. of Control v. United States, 832 F.2d 1127, 1131-32 (9th Cir. 1987) (making a similar award to the Wind River Reservation), *cert. denied*, 486 U.S. 1007 (1988).

171. Montana v. Confederated Salish & Kootenai Tribes of the Flathead Reservation, 712 P.2d 754, 767-68 (Mont. 1985).

172. *See supra* notes 41-47 and accompanying text.

173. Colville Confederated Tribes v. Walton, 647 F.2d 42, 47, 49 (9th Cir.), *cert. denied*, 454 U.S. 1092 (1981).

174. 647 F. 2d at 47-48.

175. *In re* Big Horn River (Big Horn I), 753 P.2d 76, 96-99 (Wyo. 1988) (suggesting that the primary purpose test should not apply to Indian reservations because "the standards governing non-Indian federal reserved water rights differ from those governing Indian reserved water rights"); *Id.* at 99-100 (reserved rights do not include groundwater, *distinguishing* Cappaert v. United States, 426 U.S. 128 (1976)). This result is questionable for a variety of reasons. *See* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(d) at 233-34. *See also* Joseph R. Membrino, *Indian Reserved Water Rights, Federalism and the Trust Responsibility*, 27 LAND & WATER REVIEW 1 (1992) (critically examining the *Big Horn I* decision in the context of the evolution of Indian reserved water rights).

B. Quantification Standards

Unlike wilderness reserved rights, Indian reserved water rights nearly always have very early priority dates because most reservations were established during the nineteenth century.[176] Indian tribes, therefore, frequently possess the senior water rights on the stream, whether their priority date is the date of the reservation (in the case of new uses) or "time immemorial" (in the case of preexisting uses). Tribes can use rights that are nonconsumptive in nature, such as fishing rights, to establish minimum flows.[177] They also can choose to establish minimum flows by dedicating their consumptive water rights, including irrigation rights, to nonconsumptive uses.[178]

While there is usually little dispute over establishment of the priority date for Indian reserved rights, there has been considerable controversy over the standard to employ in quantifying the waters reserved.[179] According to current law, however, the measure of Indian water rights reserved for purposes of agriculture is based on the amount of reservation land that is practicably irrigable.[180] The Supreme Court adopted the "practicably irrigable acreage" (PIA) test in *Arizona v. California*, explicitly rejecting a measure based on the tribes' "reasonably foreseeable needs" as being too indefinite and uncertain.[181] The Court subsequently declined to reconsider the PIA standard,[182] despite states' criticism that it produces "tribal windfalls"[183] and bases water rights on lands that

176. PETER W. SLY, RESERVED WATER RIGHTS SETTLEMENT MANUAL 5 (1988). *See also supra* text accompanying note 66 (discussing priority dates for wilderness reserved rights).

177. *See, e.g., Adair*, 723 F.2d at 1411 (tribal reserved water right for hunting and fishing confers on the tribe the right to prevent others from depleting the water sources); United States v. Anderson, 6 Ind. L. Rep. (Am. Indian Law. Training Program)), F-129, F-130 to F-131 (E.D. Wash. 1979) (awarding rights to sufficient water flows to maintain a specified water temperature and aesthetic appeal of stream).

178. *See supra* note 164 and accompanying text.

179. *See Big Horn I*, 753 P.2d 76 (Wyo. 1988).

180. *See* 4 WATERS AND WATER RIGHTS, *supra* note 1, §§ 37.02(c)(1), (2) at 226-30; Martha C. Franks, *The Uses of the Practicably Irrigable Acreage Standard in the Quantification of Reserved Water Rights*, 31 NAT. RESOURCES J. 549 (1991).

181. 373 U.S. 546, 600-01 (1963) ("How many Indians there will be and what their future needs will be can only be guessed.").

182. Arizona v. California (Arizona III), 460 U.S. 605, 625-26 (1983). *See also Big Horn I*, 753 P.2d 76, 101-05 (Wyo. 1988), *aff'd without opinion*, 492 U.S. 406, *reh'g denied*, 492 U.S. 938 (1989). The Court has also affirmed repeatedly the need for certainty in water adjudications. *See, e.g., Arizona III*, 460 U.S. at 620 ("certainty of rights is particularly important with regard to water rights in the Western United States"); *Cf.* Nevada v. United States, 463 U.S. 110, 121 (1983). The Court has indicated, in fact, that once quantified under the PIA standard, reserved rights cannot be modified to account for mistakes in determining irrigable acreage. *See Arizona III*, 460 U.S. at 615-28. The technology employed to ascertain PIA is that existing as of the trial date, not the reservation date, *id.* at 625 n.18, and is heavily influenced by variables such as the cost of capital needed to develop an irrigation system and the efficiency of water use. *See* Richard B. Collins, *The Future Course of the Winters Doctrine*, 56 U. COLO. L. REV. 481, 492 n.80 (1985).

183. *See* Rusinek, *supra* note 38, at 394-96 (recounting Wyoming's arguments before the

"may be irrigable academically, but not as a matter of practicality . . . ."[184] Perhaps the PIA standard's greatest virtue is that it has provided an incentive to negotiate settlements of Indian water claims.[185]

Once quantified, Indian irrigation reserved rights may be devoted to other uses, including instream uses. According to the special master in *Arizona v. California*, the PIA standard "does not necessarily mean . . . that water reserved for Indian Reservations may not be used for purposes other than agriculture and related uses."[186] The Court subsequently has approved the use of such rights for non-agricultural uses.[187] However, a divided Wyoming Supreme Court recently rejected an attempt to devote the Wind River reservation's irrigation rights to instream flows.[188]

Reserved fishing rights have been quantified differently. For example, although the Supreme Court rejected needs-based quantification standards for Indian irrigation reserved rights,[189] it has approved a needs-based test for reserved fishing rights.[190] In affirming that Northwest treaties reserved fishing rights to up to one-half of the harvest, the Court stated that "the central principle . . . secures so much as, but no more than, is necessary to provide the Indians with a livelihood — that is to say, a moderate living."[191] This allows the reserved right to be reduced to reflect changed needs, such as where a tribe abandons its reserved rights or dwindles "to just a few members."[192] Whether this test is based only on current uses or embraces reasonably foreseeable needs is not entirely clear. Different courts seem to have supplied different answers.[193]

Supreme Court in *Big Horn I*); *see also* Franks, *supra* note 180, at 562-83 (criticizing several aspects of the PIA standard including the speculative nature of the economic analysis inherent in the standard).

184. *Big Horn I*, 753 P.2d at 119 (Thomas, J., dissenting).

185. 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(c)(2) at 228-30.

186. Report of Simon H. Rifkind, Special Master at 265, Arizona v. California, 373 U.S. 546 (1963) (1960 Term, No. 8 Orig.) (report dated Dec. 5, 1960). *See generally* Harold A. Ranquist, *The Effect of Changes in Place or Nature of Use of Indian Rights to Reserved Water Under the "Winters Doctrine,"* 5 NAT. RESOURCES L. 34 (1972) (concluding that new legal approaches must be developed to deal with changes in the place or nature of tribal use of water derived from reserved rights).

187. Arizona v. California (Arizona II), 439 U.S. 419, 422 (1979) (per curiam); *see also* United States v. Anderson, 736 F.2d 1358, 1365 (9th Cir. 1984) (tribe may use irrigation water rights for non-consumptive purposes).

188. *In re* Big Horn Sys. (Big Horn II), 835 P.2d 273 (Wyo. 1992).

189. *See supra* notes 180-81 and accompanying text.

190. Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n., 443 U.S. 658, 686 (1979).

191. *Id.*

192. *Id.* at 686-87.

193. *Compare* United States v. Adair, 723 F.2d 1394, 1414-15 (9th Cir. 1983), *cert. denied*, 467 U.S. 1252 (1984) (holding that the measure of nonconsumptive water right should be limited to that amount necessary to support current hunting and fishing) *with* Colville Confederated Tribes v. Walton (*Colville II*), 752 F.2d 397, 404-05 (9th Cir. 1985) (awarding tribe reserved water to create a fishery to compensate for tribe's historic fishing grounds now inun-

What is clear is that the fishing right includes a nonconsumptive water right that amounts to a negative servitude restricting activities, such as other diversions, that damage the right.[194] Unlike consumptive Indian water rights, these nonconsumptive rights may not be transferred to other uses, and thus are a powerful tool for instream protection.[195] They frequently extend beyond reservation boundaries to protect fishing sites historically used by the tribes[196] and can survive the termination of the reservation itself.[197] The amount of water necessary to preserve fishing rights has seldom been quantified, but one court awarded a flow of at least twenty cubic feet per second in order to maintain water temperatures at a level low enough to allow native trout to survive.[198] Another awarded 350 acre-feet per year to establish a replacement fishery.[199]

Effectuating the fishing purpose of a reservation by means of reserved rights has restricted a number of activities which threatened the fulfillment of that purpose. For example, courts have issued declaratory relief effectively blocking dam construction,[200] ordered changes in dam operations,[201] limited irrigation withdrawals,[202] and blocked the issuance of federal permits that would have led to the elimination of a portion of a tribal fishery.[203] Although these cases indicate that the reserved fishing

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dated by dams). *See also* Washington v. Acquavella, No. 77-2-01484-5 (Wash. Sup. Ct. Oct. 22, 1990) (awarding minimum reserved streamflows based on current needs).

194. *See* Adair, 723 F.2d at 1411; *see generally* Michael C. Blumm, *Native Fishing Rights and Environmental Protection in North America and New Zealand: A Comparative Analysis of Profits à Prendre and Habitat Servitudes*, 8 WISC. INT'L L.J. 1, 8-11 (1989). *See also* cases cited in *infra* notes 200-04.

195. *See Adair*, 723 F.2d at 1411.

196. *See* United States v. Washington, 384 F. Supp. 312, 332-33, 359-82 (W.D. Wash. 1974) (determining off-reservation fishing rights of tribes in Western Washington); *see also* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(d) at 232-34.

197. *Adair*, 723 F.2d at 1411-12.

198. United States v. Anderson, 6 Indian L. Rep. (Am. Indian Law. Training Program) F-129, F-130 (E.D. Wash. 1979) (holding that the plaintiff tribe possessed a reserved right to flows sufficient to maintain a maximum water temperature of 68 F and a minimum flow of twenty cubic feet per second).

199. *Colville II*, 752 F.2d at 404-05.

200. Confederated Tribes of the Umatilla v. Alexander, 440 F. Supp. 553 (D. Or. 1977) (declaring that construction of a dam that would effectively destroy tribal treaty fishing rights was not permitted absent express congressional abrogation of treaty rights).

201. Kittitas Reclamation Dist. v. Sunnyside Valley Irrigation Dist., 763 F.2d 1032 (9th Cir.), *cert. denied*, 474 U.S. 1032 (1985) (requiring emergency water releases from a reclamation dam to preserve salmon redds); Confederated Tribes of the Umatilla v. Callaway, Civ. No. 72-211 at 8 (D. Or. Aug. 17, 1973) (hydropower operations may not "impair or destroy" treaty fishing rights).

202. *Colville II*, 752 F.2d at 404-05; United States v. Anderson, 591 F. Supp. 1 (E.D. Wash. 1982); *see also Adair*, 723 F.2d at 1394 (holder of non-consumptive water right is not entitled to withdraw water for agricultural purposes); Joint Bd. of Control v. United States, 832 F.2d 1127, 1131-32 (9th Cir. 1987) (requirement of "equitable sharing" among irrigators not applicable to tribes' prior fishing rights).

203. Muckleshoot Indian Tribe v. Hall, 698 F. Supp. 1504, 1505 (W.D. Wash. 1988) (enjoining issuance of a federal dredge and fill permit for a project that would have blocked access

right imposes a broad negative servitude to protect tribal needs,[204] the Ninth Circuit refused to establish, in the absence of a concrete factual dispute, a formula for protecting habitat necessary for the effective exercise of reserved fishing rights.[205]

C. *Negotiated Settlements*

Negotiated settlement of Indian reserved rights claims, whether for irrigation or fishing, increasingly is being employed as the chief means of transforming Indian "paper rights" into water that can be used to improve reservation life.[206] Congress, through the budget for reclamation, controls access to a good deal of water in the West.[207] Because Indians are under represented in Congress, only a percentage of their paper rights are likely to be transferred into water through legislative intervention. But negotiated settlements offer Indian tribes several advantages over the principal alternative to legislative intervention, litigation of reserved rights claims. These advantages include speedier results and financial assistance necessary to make effective use of the water. Settlements can resolve a number of issues not yet clarified by the courts, such as whether

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to part of a tribe's fishing site).

204. The "needs-based" approach that characterizes reserved fishing rights also may extend to tribal irrigation rights having a "time immemorial" priority date. For example, the Pima, Maricopa, and Pueblo Indian tribes, which have time immemorial priority dates because they irrigated prior to white settlement, have had the scope of their rights measured by historic use. Gila River Pima-Maricopa Indian Community v. United States, 695 F.2d 559 (Fed. Cir. 1982) (holding that the tribe is not entitled to damages based on PIA, but on the basis of acreage that the tribe had the ability to irrigate); New Mexico *ex rel.* Reynolds v. Aamodt, 618 F. Supp. 993, 1009-10 (D. N.M. 1985) (basing Pueblo Indian rights on historic use between 1846 and 1924). Historic use may be thought of as a type of "needs-based" approach.

205. United States v. Washington, 759 F.2d 1353, 1357 (9th Cir. 1985) (establishing a right of habitat protection by declaratory judgment in the absence of factual dispute is "contrary to the exercise of sound judicial discretion"), *rev'g* 506 F. Supp. 187, 202-08 (W.D. Wash. 1980) (holding that a reserved tribal fishing right includes the right to have fishery habitat protected from human-caused despoliation), *cert. denied*, 474 U.S. 994 (1985).

206. *See generally* Shupe, *supra* note 159, at 566-67; Folk-Williams, *supra* note 159. Federal non-Indian reserved rights claims are also being settled. *See* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(c) (2) at 263-64.

Indian water right claims are particularly good candidates for settlement because Indian tribes usually lack the financial resources necessary to convert their unquantified water rights into water they can use. *See* David H. Getches, *Management and Marketing of Indian Water: From Conflict to Pragmatism*, 58 U. COLO. L. REV. 515, 518 (1988) (suggesting that tribes lack "sufficient capital to put their apparently formidable water rights to use"). Transforming water rights into usable water not only usually requires an adjudication to determine the scope of the Indian water right, it also frequently requires considerable investment in water diversion technology. Congressional appropriations can supply the financial wherewithal to obtain usable tribal water. Congress also can obviate the need to adjudicate the scope of the tribal right by statutorily ratifying negotiated quantities of water reserved to the tribe.

207. *See* John M. Volkman & Kai N. Lee, *Within the Hundredth Meridian: Western States and Their River Basins in a Time of Transition*, 59 U. COLO. L. REV. 551, 556 (1988) (stating that the reclamation budget during fiscal year 1982 exceeded $1 billion and cumulatively totaled more than $54 billion).

tribes may market their water off-reservation or devote consumptive uses to instream flows and whether reserved rights extend to groundwater. Settlements may also resolve jurisdictional issues related to tribes and states acting in their regulatory capacities.[208]

A number of mechanisms exist to encourage settlements of reserved rights claims. The state of Montana, for example, has established a reserved rights compact commission which successfully negotiated a settlement with the Fort Peck tribes.[209] Additionally, the Departments of Justice and Interior have recently adopted criteria and procedures to govern Indian water settlements. These include (1) the potential for establishment of a consultation team to inform the Departments of Justice and Interior and the Office of Management and Budget, (2) the use of settlement provisions designed to limit federal contributions (such as nonfederal cost-sharing proportional to the benefits received by the nonfederal party), and (3) the encouragement of settlements promoting Indian economic self-sufficiency.[210] Two recent books, which detail the results of Indian water settlements, outline the elements of a successful settlement.[211]

Existing settlements that provide for instream flows include the Fort Peck, Fort Hall, and Pyramid Lake settlements. The Fort Peck Compact, negotiated by the Montana Reserved Water Rights Commission, effectively allocated more than a million acre-feet of water to the tribe, recognized tribal management control, and recognized tribal authority to market water off-reservation and establish instream flows on-reservation.[212] Similarly, the Fort Hall agreement quantified the Shoshone-Bannocks' surface and groundwater rights, approved off-reservation marketing, ratified tribal management authority, and authorized transformation of consumptive water rights to instream flows.[213] The Pyramid Lake settlement contemplated changes in the operation of a

208. *See* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(c)(1) at 259-63.

209. MONT. CODE ANN. §§ 85-2-701 to -705 (1991); Folk-Williams, *supra* note 159, at 82-86; *see also* Charles F. Wilkinson, *Western Water Law in Transition*, 56 U. COLO. L. REV. 317, 339-40 (1985) (discussing the Fort Peck agreement before its ratification by the Montana legislature).

210. Criteria and Procedures for Indian Water Rights Settlements, 55 Fed. Reg. 9223, 9223-24 (1990). *See also Water Rights: Indian Water Rights/Negotiated Settlements*, WESTERN STATES WATER NO. 825 (Western States Water Council, Midvale Utah), (Mar. 9, 1990) at 1-2; WATER INTELLIGENCE MONTHLY, Apr. 1990, at 13.

211. JOHN A. FOLK-WILLIAMS, WHAT INDIAN WATER MEANS TO THE WEST (WATER IN THE WEST, Vol. 1) (1982); SLY, *supra* note 176.

212. *See* SLY, *supra* note 176, at 30 (stating that the tribe was awarded the lesser of 1,050,472 acre-feet per year or enough water to supply 525,236 acre-feet of consumptive use per year).

213. *See* Fort Hall Indian Water Rights Act of 1990, Pub. L. No. 101-602, 104 Stat. 3059 (approving and ratifying the Fort Hall Agreement); *Innovation Through Negotiation: Fort Hall Indian Water Rights Agreement*, WATER STRATEGIST, July 1990, at 1.

reclamation dam in Nevada to produce increased flows in the Carson and Truckee Rivers.[214]

V
TRIBAL REGULATORY RIGHTS

Most Indian reserved rights conflicts have concerned the nature and amount of water reserved to the tribes. Recognition of the scope of these proprietary rights does not, however, settle the question of whether the tribes' sovereign status enables them to regulate on-reservation water use. While it is fairly clear that tribal governments may control water use of tribal members on-reservation,[215] it is less clear whether they may regulate nonmember (usually non-Indian) use on-reservation. This is an important issue since many reservations are checkerboarded with allotments owned by nonmembers.[216] Recent Supreme Court cases have limited tribal land use and tribal criminal authority over non-members,[217] but tribal water regulation of non-members could be sustained either because allotment water rights spring from the tribal reserved right[218] or where the tribe can show that on-reservation use by non-members would directly affect its political integrity, economic security, or health and welfare.[219]

No simple solution to the issue of whether tribes may regulate all uses on-reservation appears likely. Instead, the extent of tribal authority

214. Truckee-Carson-Pyramid Lake Water Rights Settlement Act, Pub. L. No. 101-618, 104 Stat. 3289, 3294 (1990); *see generally California/Nevada Water Compact*, 23 WATER L. NEWSL. (Rocky Mtn. Min. L. Foundation), no. 3, 1990, at 10-11.

215. *See* FELIX S. COHEN, HANDBOOK OF FEDERAL INDIAN LAW 605 (1982 ed.); *see also* California v. Cabazon Band of Mission Indians, 480 U.S. 202, 207 (1987) (stating that tribes retain attributes of sovereignty over their members and territories in a case involving gambling on reservations). Under the doctrine of intergovernmental immunity, Indian tribes retain jurisdiction over their members and property absent congressional intent to the contrary. COHEN, *supra*, at 266-77. *See also id.* at 242-44 (describing generally tribal powers over tribal lands and members).

216. The Indian General Allotment Act, ch. 119, 24 Stat. 388 (1887) (codified as amended at 25 U.S.C. §§ 331-34, 339, 341-42, 348-49, 352, 381 (1988)), aimed at overcoming the problems of reservation life by transferring substantial amounts of tribal land to individual members of the tribes (as well as to dispose of "surplus" lands to non-Indians). Between 1887 and the enactment of the Indian Reorganization Act of 1934, ch. 576, 48 Stat. 984 (codified at 25 U.S.C. §§ 461-79 (1988)), the federal government transferred tens of millions of acres on reservations to individuals, many of whom subsequently conveyed the land to non-Indians. *See* COHEN, *supra* note 214, at 130-39, 612-28 (1982). Because the purpose of individual allotments was to encourage farming, individual allottees succeed to a ratable portion of the reservation's water right. *See id.*

217. Brendale v. Yakima Indian Nation, 492 U.S. 408 (1989); Duro v. Reina, 495 U.S. 676 (1990). *See* Judith V. Royster, *Environmental Protection and Native American Rights: Controlling Land Use Through Environmental Regulation*, 1 KAN. J.L. & PUB. POL'Y 89, 92-93, 95 (1991) (discussing *Brendale*'s adverse affect on tribal control over landuse on reservations).

218. 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.02(f)(2) at 237.

219. *See* Montana v. United States, 450 U.S. 544, 566 (1980) (involving tribal regulation of hunting and fishing by non-members).

is likely to be decided on a case-by-case, reservation-by-reservation basis. Lower court decisions have turned on the characteristics of the waters and reservations involved, sometimes upholding tribal regulation of non-members' water rights,[220] sometimes affirming state regulation.[221] Because of the often extensive scope of privately owned in-holdings, clarification of tribal jurisdiction over non-Indian water uses on-reservation is likely to result in one of the more difficult adjustments necessitated by the quiet revolution in water authority.

A. Tribal Water Codes

A number of tribes have enacted comprehensive water codes to regulate reservation water use. These codes typically attempt to regulate both member and non-member use and to control both water use and water pollution.[222] Such integrated water quantity and quality regulation could serve as a model for states in an era which increasingly is questioning the wisdom of separating water use decisions from water quality control.[223]

Tribes organized under the Indian Reorganization Act of 1934 must have their water codes approved by the Secretary of the Interior.[224] Un-

220. Colville Confederated Tribes v. Walton, 647 F.2d 42, 52 (9th Cir.) (holding that establishment of Colville Reservation preempted state regulation of a creek located entirely on reservation), *cert. denied*, 454 U.S. 1092 (1981); *In re* Big Horn, No. 4993 (Wyo. 5th Dist. Ct. Mar. 7, 1991) (slip op. at 14) (removing the state engineer as administrator of water rights on the Wind River Reservation and assigning that responsibility to the tribe and directing the tribe to use state law in regulating non-Indian rights), *rev'd*, 835 P.2d 273 (Wyo. 1992) (ruling that the lower court's decision "would result in a most unbalanced and unworkable form of government. The district court's action violated not only the separation of powers embodied in the Wyoming Constitution, but also the Constitutional charge that the State Engineer shall have 'general supervision of the waters of the state.' ").

221. United States v. Anderson, 736 F.2d 1358, 1365-66 (9th Cir. 1984) (assigning to the state authority to regulate nonmember use of excess water on a stream that flowed along the boundary of the reservation as long as that use would not affect the tribe's political integrity, economic security, or health and welfare).

222. *See generally* AMERICAN INDIAN RESOURCES INST., TRIBAL WATER MANAGEMENT HANDBOOK ch. 13 (1988) (describing the necessary components of a tribal water code, including the regulation of both tribal and non-member water use); Thomas V. Clayton, *The Policy Choices Tribes Face When Deciding Whether to Enact a Water Code*, AM. INDIAN L. REV. (forthcoming 1992) (manuscript published by the Rocky Mtn. Min. L. Foundation on file with author); Shupe, *supra* note 159, at 585-87 (describing water codes of the Colville and Umatilla Reservations and the Navajo Nation); Getches, *supra* note 206, at 526-32 (discussing tribal water codes generally). The use of these codes to regulate non-member uses is contingent on a demonstration that failure to do so would infringe on the tribe's political integrity, economic security, or health and safety. *See supra* note 218 and accompanying text.

223. *See* Anne W. Squier, *Water Quality, Water Quantity: The Reluctant Marriage*, 21 ENVTL. L. 1081 (1991) (describing the proceedings of a national water law conference which addressed the relationship between regulating water quality and water quantity).

224. *See* Shupe, *supra* note 159, at 579; *see also* Indian Reorganization Act of 1934, 25 U.S.C. § 476 (1988) (giving the Secretary of the Interior the power to approve or disapprove tribal constitutions and bylaws and amendments thereto, including those vesting tribes with powers over tribal lands and associated rights).

fortunately, the Secretary has since 1975 maintained a moratorium on approval of tribal water codes.[225] The Secretary has, however, made one exception to the moratorium.[226] Moreover, many tribes are attempting to enforce the codes without secretarial approval,[227] and at least one settlement agreement has authorized a tribal water code.[228]

B. Tribal Water Quality Regulation

Both the Clean Water Act[229] and the Safe Drinking Water Act[230] authorize EPA to treat qualifying tribes as states for the purpose of administering programs under those statutes. Tribes may obtain approval to issue pollution permits, set water quality standards, receive funds for wastewater treatment facilities, operate underground injection control programs, and undertake public water system enforcement.[231] A number of tribes have developed water quality standards, and EPA has approved at least one of these regimes.[232] Thus, while the Secretary of the Interior continues to enforce the moratorium on approval of tribal water codes,[233] tribes are gaining authority to affect streamflows through water quality regulation under the pollution control laws.[234]

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225. The purpose of the moratorium was to give the Secretary time to promulgate guidelines for approval of tribal water codes. Shupe, *supra* note 159, at 579-81; Getches, *supra* note 206, at 527-28. Although two sets of regulations have been proposed, controversy over their content has prevented the promulgation of either. *See* Indian Reservations: Use of Water, 42 Fed. Reg. 14,885 (1977) (proposed Mar. 7, 1977) (proposing regulations for adopting tribal water codes).

226. Shupe, *supra* note 159, at 581 n.112. *See also* the Fort Peck agreement, discussed in *supra* notes 209, 212 and accompanying text.

227. For example, tribes not governed by the Indian Reorganization Act need not obtain secretarial approval. *See* Kerr-McGee Corp. v. Navajo Tribe, 471 U.S. 195, 198 (1985) (declining to apply terms of the Indian Reorganization Act to a tribe which did not accept its provisions in a tax case).

228. *See* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 37.04(c)(1) at 261 (discussing the Seminole Water Compact).

229. 33 U.S.C. §§ 1251-1387 (1988)

230. 42 U.S.C. §§ 300f-300j (1988).

231. 33 U.S.C. § 1377(e) (1988) (Clean Water Act); 42 U.S.C. §§ 300h-1(e), 300j-11 (1988) (Safe Drinking Water Act).

232. *See* SLY, *supra* note 176, at 72-73 n.84 (listing the Fort Belknap, Rosebud, Colville, Umatilla, Warm Springs, Fort Peck, and Northern Cheyenne tribes); Water Quality Standards for the Colville Indian Reservation in the State of Washington, 54 Fed. Reg. 28,622 (1989) (EPA approval of standards).

233. *See supra* note 225 and accompanying text.

234. *See* U.S. ENVIRONMENTAL PROTECTION AGENCY, EPA POLICY FOR THE ADMINISTRATION OF ENVIRONMENTAL PROGRAMS ON INDIAN RESERVATIONS (Nov. 8, 1984) (recognizing that tribal governments should possess primary responsibility for environmental regulation and program management on reservations); *see also* Washington Dep't. of Ecology v. EPA, 752 F.2d 1465 (9th Cir. 1985) (holding that EPA can refuse to approve state regulation of hazardous waste on tribal lands); Nance v. EPA, 645 F.2d 701 (9th Cir.) (describing tribal role under the Clean Air Act), *cert. denied*, 454 U.S. 1081 (1981); 40 C.F.R. § 171.10 (1991) (tribes may develop pesticide certification programs where statute authorizes "states" to submit such programs); Getches, *supra* note 206, at 532-41 (discussing the tribal role under

Tribes seeking to regulate water quality under the Clean Water Act must have "a governing body carrying out substantial governmental duties and powers."[235] In addition EPA will require tribes to demonstrate inherent or statutory powers authorizing the tribes' exercise of territorial jurisdiction.[236] Moreover, tribes will not be able to impose criminal sanctions on non-members on reservations.[237] Finally, there may be some limits on tribal water quality regulation on reservations declared to be "open."[238] Still, it seems clear that the years ahead will see many tribes using water quality regulation to control streamflows on their reservations.

CONCLUSION

The long rear guard action that states successfully fought against federal and tribal reserved rights on jurisdictional grounds is now over. State courts may interpret the nature and scope of reserved rights in McCarran Amendment proceedings,[239] and many have done so.[240] Quantification of reserved rights is now proceeding, expedited by widespread interest in negotiating settlements to federal and tribal claims.[241]

A new era has dawned — one in which questions about the existence of reserved rights have been replaced by questions about quantification and administration. This new era will require states not only to accommodate long-resisted reserved rights[242] but federal and tribal regulatory rights as well. Although federal land managers have ignored the existence of federal "non-reserved" water rights,[243] other federal agencies have asserted these regulatory rights to alter streamflows in the name of water quality, endangered species, and multiple use at hydroelectric

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the Resources Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, and the Federal Insecticide, Fungicide and Rodenticide Act).

235. 33 U.S.C. § 1377(e)(1) (1988).

236. Amendments to the Water Quality Standards Regulations that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,895 (1991) (to be codified at 40 C.F.R. § 131.8(b)(3)). The rules also establish dispute resolution mechanisms applicable when differing tribal and state water quality standards apply to the same water course. *Id.* at 64,894 (to be codified at 40 C.F.R. § 131.7(f)).

237. Oliphant v. Suquamish, 435 U.S. 191 (1981).

238. *See* Peter W. Sly, *EPA and Indian Reservations: Justice Stevens' Factual Approach*, 20 ENVTL. L. REP. (Envtl. L. Inst.) 10,429, 10,435 (1990) (*interpreting* Brendale v. Yakima Indian Nation, 492 U.S. 408 (1989)). An open reservation is one which was opened to nonmember settlement by a specific statute relating to that reservation. *Id.* at 10,431, n.24. *But see* 56 Fed. Reg. at 64,877-80 (discussing why EPA believes that tribes may enforce water quality standards against nonmembers despite *Brendale*).

239. *See supra* notes 32-36 and accompanying text.

240. *See supra* notes 34, 38, 48-49, 75-77, 91-92, 100, 171, 175, 182-85, 188 and accompanying text.

241. *See supra* notes 206-14 and accompanying text.

242. *See supra* notes 32-35 and accompanying text.

243. *See supra* note 112 and accompanying text.

projects.[244] While both the Clean Water Act and the Endangered Species Act instruct federal officials to cooperate with the states on water management issues,[245] neither statute contemplates federal subordination to state authority. Both statutes have considerable potential to affect streamflows, particularly in the West, where many streams run dry in the summer. The Federal Power Act has even more potential in this regard.[246] Numerous hydroelectric projects constructed in the 1940's and 1950's must be relicensed during the next two decades,[247] and the Federal Power Act demands that relicensing be accomplished according to today's values and regulatory requirements.[248]

Tribal regulatory rights naturally will have the most impact on reservations, where tribes are likely to develop comprehensive water codes regulating both water quantity and quality.[249] This fusion may produce useful models for states which for too long have forced a separation of these two fundamentally-linked components of water resource management. The effects of some tribal regulatory rights will not end at reservation boundaries, however. Where the protection of their proprietary rights requires regulation of off-reservation actions, tribes may restrain damaging activities extraterritorially.[250]

The "quiet revolution" in federal and tribal authority over streamflows is already well underway. There will be no retreat to the earlier, simpler era of predominantly state regulation of streamflows. For even though many states have revised and will continue to revise their authority to manifest greater sensitivity to instream concerns, federal and tribal interests in streamflows cannot depend on state recognition. These interests are not a product of state laws and have been the subject of considerable state hostility. Federal and tribal streamflows are the consequence of proprietary and sovereign rights which are fundamentally distinct from state concerns. The revolution that has occurred is a recognition that streamflow levels must represent an accommodation of three sets of sovereign and proprietary interests, not just the sovereign and proprietary interests of the states. Whether it remains a "quiet revolution" will no doubt depend on whether state officials recognize this reality or attempt to retrieve a bygone era.

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244. *See supra* § III.

245. *See supra* notes 116-22, 132-33 and accompanying text.

246. Even in the more humid East (where streamflow levels, nonetheless, have become an increasing concern) substantial restructuring of streamflows is possible through relicensing of hydroelectric projects.

247. *See supra* note 155.

248. *See* Confederated Tribes v. F.E.R.C., 746 F.2d 466, 476 (9th Cir. 1984), *cert. denied*, 471 U.S. 1116 (1985); *see also* 4 WATERS AND WATER RIGHTS, *supra* note 1, § 40.10(c) at 372-73.

249. *See supra* notes 222-28 and accompanying text.

250. *See supra* notes 196, 200-05 and accompanying text.