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Abandoning the PIA Standard: A Comment on
Gila V

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ABANDONING THE PIA STANDARD:
A COMMENT ON GILA v†

Galen Lemei*

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INTRODUCTION

In the arid western United States, water is gold.1 As the population
increases and global warming reduces water supplies,2 state governments,
metropolitan areas, farmers, ranchers, and American Indian3 tribes are vy-
ing for their share of a shrinking supply. In particular, American Indians
in the Southwest depend on having enough water for irrigation, domestic
use, and economic development because their reservations are located on
dry, barren land.4 The United States Supreme Court has protected Indian
water rights by guaranteeing that Indians are entitled to sufficient water to
meet their current and future needs.5 These reserved rights are sometimes
called Winters rights, named for the case that first recognized them.6 The
Winters doctrine articulates the principle that Indians are entitled to as
much reserved water as is necessary for them to make full use of their

1. See Pauline Arrillaga, Water Settlements Could Help Indians Thrive Economically,
   SAN DIEGO UNION TRIB., Nov. 3, 2002, at A4 (referring to water as “liquid gold”).
2. Andrew Bridges, Global Warming to Shrink Water Supply in West, Study Finds, SAN
3. The term “Indian” rather than “Native American” is used in this article in ac-
   cordance with most of the case law and literature on this topic. See, e.g., Arizona v.
   California, 373 U.S. 546, 599 (1963) [hereinafter Arizona I]; Judith V. Royster, A Primer on
4. See David H. Getches, Management and Marketing of Indian Water: From Conflict to
   (discussing the historical, sacred history of water for various Indian tribes).
6. Id.
reservation land. In the course of adjudicating the rights to the Colorado River in *Arizona v. California* ("Arizona I"), the Supreme Court set the standard for quantifying tribal *Winters* rights, holding that Indian reservations are entitled to as much water as is necessary to irrigate all "practically irrigable" reservation land. The Supreme Court reaffirmed and refined the practically irrigable acreage ("PIA") standard in a later proceeding of *Arizona v. California* ("Arizona II").

Consequently, *Winters* rights give Indians potential control over vast quantities of water. Because most Indian reservations were established in regions before settlers arrived, *Winters* rights tend to give Indians priority access to water over nearly all other users under the prior appropriations system of water allocation prevailing in the western states. According to the Executive Director of the Western States Water Resources Council, *Winters* rights currently entitle Indians to enough water to tie up all of the unallocated water in the West. In fact, according to Professor Storey, "[b]illions of dollars have been invested in water resource projects benefiting non-Indians but using water in which the Indians have a priority of right." In response to this threat to western metropolitan water supplies, as well as the supplies of non-Indian farmers, ranchers, manufacturers, and others, some states have fought to protect their non-Indian voters’ water rights. These states have argued that courts should therefore narrow the scope of Indian reserved rights.

In November 2001, in *In re General Adjudication of All Rights to Use Water in Gila River System and Source* ("Gila V"), opponents of broad

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7. Id.
9. Id. at 595–601 (quantifying Indian *Winters* rights as the amount of water necessary to irrigate all “practically irrigable acreage”).
10. *Arizona v. California*, 460 U.S. 605 (1983) [hereinafter *Arizona II*] (further elaborating on the scope of Indian *Winters* rights in a later proceeding of the same adjudication of the Colorado River); see also infra notes 48–68 and accompanying text (discussing *Arizona I* and *Arizona II* in depth).
11. See John A. Folk-Williams, *The Use of Negotiated Agreements to Resolve Water Disputes Involving Indian Rights*, 28 NAT. RESOURCES J. 63, 66 (1988); see also Royster, supra note 3, at 67 (noting that "in most cases ... little water [is] removed from the reach of the *Winters* doctrine" because of senior claims); infra notes 20–32 and accompanying text (discussing the prior appropriations system and its application to *Winters* rights).
14. See id. at 182.
15. 35 P.3d 68 (Ariz. 2001) [hereinafter *Gila V*].
Indian reserved water rights convinced the Arizona Supreme Court to abandon the PIA standard established by the U.S. Supreme Court for measuring and defining water rights for American Indians. The Arizona court substituted a criteria that granted Indians a much narrower entitlement. This was the first time a court abandoned the practicably irrigable acreage standard for quantifying Indian Winters rights as articulated by the U.S. Supreme Court in Arizona I and Arizona II.

Part I of this Note examines the development of Indian reserved water rights, and the practicably irrigable acreage method of quantifying those rights, as defined by the Court. Part II describes the arguments of state and private interests that oppose broad Indian water rights. Part III discusses Gila V, including the Arizona Supreme Court's rationale for abandoning the standard set forth by the U.S. Supreme Court and the standard for quantifying Indian reserved rights that the court applied in its place. Part IV analyzes the Arizona Supreme Court's justifications for abandoning the standard, and considers alternate grounds for the decision. Ultimately, this Note concludes that the Arizona Supreme Court misinterpreted precedent and wrongfully rejected the standard established by the U.S. Supreme Court in Arizona I and Arizona II. Thus, Gila V should be viewed as an abrogation of the established standard for defining Indian water rights and not serve as precedent.

I. THE HISTORY AND SCOPE OF INDIAN RESERVED RIGHTS

A. Water in the Western United States and the Prior Appropriations Doctrine

Legal claims to water in most western states are governed by the "prior appropriations" doctrine. Originally adopted to promote development of water resources by rewarding early capital investment in

16. Id. at 81.
17. Id.
18. Id. at 79.
19. For a contrary opinion, see Barbara A. Cosens, The Measure of Indian Water Rights: The Arizona Homeland Standard, Gila Five Adjudication, 42 Nat. Res. J. 835 (2002). Cosens views the PIA standard as prejudicial to Indian interests, and applauds the Arizona Supreme Court's decision to abandon the traditional standard for measuring Indian water rights. This Note rejects the notion that the PIA standard, as properly applied, is prejudicial to Indians, and attacks the assumptions underlying this notion. See infra note 130.
20. See Dan Tarlock, Law of Water Rights and Resources § 5:1 (2002) (noting that "[p]rior appropriation has been adopted in whole or in part in the arid and semi-arid regions of the United States").
21. Id. This system was deliberately adopted by arid western states as an alternative to the common law "riparian" system inherited from Europe and preserved in the eastern
infrastructure, the doctrine grants the legal right to use a quantity of water to the party that first puts it to beneficial use.22 States have interpreted the term “beneficial use” as a requirement that water is used in a historically recognized way, such as irrigation, mining, domestic, or industrial use.23 The “priority date” of a claim is the date water is first put to beneficial use on a piece of land.24 Parties who subsequently appropriate water from the same body have rights junior to prior appropriators. When there is insufficient water to meet the needs of all appropriators, prior claims will be satisfied first, irrespective of other considerations.25 There has been criticism of the prior appropriations doctrine on the ground that it promotes inefficient use of water by entrenching ancient utilization, and prevents future development of unallocated water.26 Some anticipate the doctrine may be overhauled in the near future to mitigate this problem.27 Nevertheless, some form of the doctrine currently exists in the statutory scheme of nineteen western states.28

B. The Origin of Federal Reserved Rights: Winters v. United States

Federal reserved rights are an exception to the requirement in prior appropriation jurisdictions that water must be put to beneficial use in order to be claimed.29 Reserved water rights are claims to water appurtenant

states, under which owners of land bordering a body of water have the inherent right to make reasonable use of the water that does not interfere with other users.


23. See, e.g., Ariz. Rev. Stat. Ann. § 45-151(B)-(C) (West 2003) (defining “beneficial use” in Arizona). Some states have additional procedural requirements, such as obtaining a permit from an agency or a decree from a court, that parties must take before their right is considered fully perfected. See Reed D. Benson, Maintaining the Status Quo, Protecting Established Water Uses in the Pacific Northwest, Despite the Rules of Prior Appropriation, 28 ENVT L. 881, 886 (1998) (noting that “all four Northwestern states now require a permit application to establish a new water”).


25. Benson, supra note 23, at 886. There is no comparative cost benefit analysis or other discriminating between competing uses on the basis of economic or social utility; see David Getches, Water Law in a Nutshell 11 (2d ed. 1990) [hereinafter Water Law].


27. Tarlock, supra note 20, § 5:1 (“To stimulate the re-allocation of water, there are mounting pressures on water rights holders to use existing allocations more efficiently. In time, the concept of beneficial use, which is the lynch pin of prior appropriation, may be redefined to mean the efficient use of water.”).


to land set aside by the United States government for a specific purpose. In prior appropriation jurisdictions, a reserved right to appurtenant water vests in the federal government. The "priority date" of that right is the date the reservation was established, whether or not that water has been put to beneficial use.

The doctrine of reserved rights was established in Winters v. United States to protect the water rights of Indians on reservations. The case concerned the water rights of the Fort Belknap Indian reservation, established for the Gros Ventre and Assiniboine tribes in 1889. Ten years later, the federal government began constructing an irrigation project to divert water from the Milk River, appurtenant to the reservation, for the Indians. At approximately the same time, non-Indian settlers began diverting water from upstream of the Reservation. For several years there was no conflict, but in 1905 drought conditions left the reservation with insufficient water, and the federal government filed suit on behalf of the Indians, against Henry Winters and the other settlers to enforce the Indians' right to the water.

The main issue in the lower courts was whether the government or the settlers had first put the water to beneficial use and therefore gained

document “[c]onflicts ... with the doctrine of federal reserved water rights ... [which] exist independently of beneficial use or quantification ... [and] are therefore fundamentally different in character from rights established by prior appropriation”).

30. See Gila V, 35 P.3d 68, 71 (Ariz. 2001) (“[W]hen the Federal Government withdraws its land from the public domain and reserves it for a federal purpose, the Government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation.”). Reserved rights were first recognized for Indian reservations, but the doctrine has been expanded to apply to other federal enclaves. See, e.g., Cappaert v. United States, 128 U.S. 137, 138 (1976) (“The [Winters] doctrine applies to Indian reservations and other federal enclaves, encompassing water rights in navigable and nonnavigable streams.”). The United States Supreme Court explicitly extended the Winters doctrine to other, non-Indian federal reservations, reserving water for wildlife refuges, national parks, and recreational purposes. Arizona I, 373 U.S. 546, 550-51 (1963); see also Fisher, supra note 29, at 1082.

31. In the case of an Indian reservation, the federal government holds both the land and appurtenant water rights in trust for the Indians, and has a fiduciary duty to protect the Indians use of the resource. See FELIX S. COHEN, HANDBOOK OF FEDERAL INDIAN LAW 221 (Rennard Strickland et al. eds., 1982) (noting that the principle that the federal government acts as trustee for tribes “[i]s one of the primary cornerstones of Indian law”). For simplicity, this Note will ignore this distinction, and discuss tribal water rights as if they are held by the Indians directly.

32. See Royster, supra note 3, at 70.
33. 207 U.S. 564 (1908).
34. See Royster, supra note 3, at 63.
35. Winters, 207 U.S. at 565.
36. Id. at 566.
37. See Royster, supra note 3, at 64.
38. See id. at 63-64 (noting that the government acts as trustee to Indians).
superior water rights under the prior appropriations doctrine. The Supreme Court mooted that issue, noting that the Indian lands "were arid, and, without irrigation, were practically valueless, and thus could not sustain the Indians." The Court defined the Indians' right to the water in broad terms, holding that even absent an express provision, Congress had implicitly reserved as much water from the river as was "necessary for . . . the purposes for which the reservation was created." The Court held that the Indians' water rights had vested when the reservation was created, giving the tribes a senior claim. The Court did not quantify or limit the scope of this claim, leaving open the question of how much water was reserved for the Indians.

The Winters doctrine became a key component of federal Indian policy at a time when the objective of the federal government was to give Indians land where they could become farmers. Absent adequate water supplies, many Indian reservations would have been useless for farming, and unable to support their Indian populations.

C. Arizona I and the Practicably Irrigable Acreage Standard for Quantifying Indian Reserved Rights

Reserved rights were rarely litigated, and remained unquantified throughout the early twentieth century. Eventually, demands on western

39. Id. at 64 (citing Winters v. United States, 143 F.740, 741-42 (9th Cir. 1906)); The lower court held that some of the settlers water use preceded the government's water use.
41. See id. at 576-77.
42. There was no dispute that the creation of the Reservation predated the appropriation by the settlers. See Royster, supra note 3, at 66 n.22.
43. The Court, relying on the canon that ambiguities in treaties, agreements, and statutes should be resolved in favor of the Indians, reached this result despite the fact that the actual agreement with the Indians was silent on the issue of water rights. See id. at 66 n.19 and accompanying text.
44. Mergen and Liu argue that "the Winters decision and most of the reserved rights cases that immediately followed, held that Indians' rights should not be quantified, allowing the entitlement to expand and meet the reasonable needs of the tribes." Andrew C. Mergen & Sylvia F. Liu, A Misplaced Sensitivity: The Draft Opinions in Wyoming v. United States, 68 U. COLO. L. REV. 683, 691 (1997) (citing Conrad Inv. Co. v. United States, 161 F. 829 (9th Cir. 1908) and United States v. Ahtanum Irrig. Dist., 236 F.2d 321 (9th Cir. 1956)); see also Fisher, supra note 29, at 1082 ("In earlier reserved rights cases, the Court had not closely examined what quantity of water was necessary to satisfy the purposes of the reservations.").
45. COHEN, supra note 31, at 579.
46. Id.
47. Because tribes themselves had limited resources and infrequent government assistance to develop irrigation projects or other infrastructure to utilize their resource tribes, Indians were largely unable to put their theoretical Winters rights to use. There have
water necessitated greater certainty, and the U.S. Supreme Court addressed how such rights should be quantified in Arizona I. Arizona initiated litigation to determine its precise share of the Colorado River and the United States intervened on behalf of interested tribes. A Special Master, appointed by the court to act as fact finder, found that five reservations on the river had rights to water sufficient to provide for their future needs. The Special Master concluded that the correct measure of the Winters rights was a function of the amount of reservation land that could be irrigated and farmed, which he called a reservation’s “practicably irrigable acreage.” This measure tied the reserved water right to the potential development of the reserved land. He acknowledged that his standard was “potentially generous,” noting that more land was reserved for Indian use than was necessary to support the current Indian population.

The Supreme Court agreed with the Special Master’s conclusion on the quantification of the water. Justice Black, writing for the majority of the Court stated:

We also agree with the Master’s conclusion as to the quantity of water intended to be reserved. He found that the water was intended to satisfy the future as well as the present needs of the Indian Reservations, and ruled that enough water was reserved to irrigate all the practicably irrigable acreage on the

thus been few controversies and courts have had limited opportunities to clarify the issue. See Mergen & Liu, supra note 44, at 717 (noting that between 1908 and 1987 the United states spent only $4.4 million constructing and maintaining Indian irrigation projects, compared to $70 million spent on one major non-Indian Reclamation project alone). Moreover, “with the exception of occasional litigation or acts of Congress applicable to particular reservations, tribal rights to water in the decades after Winters were relegated to the legal attic.” Royster, supra note 3, at 73.

48. 373 U.S. at 595–601.
49. Id. at 546. Because the matter was between states, the Supreme Court had original jurisdiction. Id. at 550–51.
50. See Mergen & Liu, supra note 44, at 690 (citing the Report of Special Master Simon H. Rifkind 257–62 (Dec. 5, 1960)).
52. See Mergen & Liu, supra note 44, at 690 (citing the Report of Special Master Simon H. Rifkind 265–66 (Dec. 5, 1960)). The Special Master stated that “[a]n award based on the current Indian population or needs would require open-ended decrees that allowed for modification as the population changed in the future.” Id. The Special Master found this solution unsatisfactory “because it would jeopardize junior water rights and hamper the financing of future irrigation projects.” Id.
53. Id.
reservations. Arizona, on the other hand, contends that the quantity of water reserved should be measured by the Indians' "reasonably foreseeable needs," which, in fact, means by the number of Indians. How many Indians there will be and what their future needs will be can only be guessed. We have concluded, as did the Master, that the only feasible and fair way by which reserved water for the reservations can be measured is irrigable acreage.55

Notwithstanding the agricultural focus of the PIA analysis, the Special Master held that Indians were free to use their water however they wished and were not limited to agricultural purposes. In his report, he wrote:

This [method of quantifying water rights] does not necessarily mean, however, that water reserved for Indian Reservations may not be used for purposes other than agricultural and related uses . . . . The measurement used in defining the magnitude of the water rights is the amount of water necessary for agriculture and related purposes because this was the initial purpose of the reservation, but the decree establishes a property right which [may be used] for the benefit of the Indians as the relevant law may allow.56

Many commentators have noted that because Indian water use is unrestricted that tribes may market their water absent other legal barriers, arguing that not only is such a use legitimate but that for many tribes marketing may be the best use of their water rights.57

55. Id. at 600–01.

Generally, prior appropriation water rights are considered a transferable property interest by courts. See Gould at 459–60 (citing Maeris v. Bicknell, 7 Cal. 261, 263 (1857) and McDonald v. Bear River Co., 13 Cal. 220, 232 (1859)). Agreements transferring water interests may convey a water right permanently, lease it for a fixed term, or be more complicated. See Shupe at 186–93 (cataloging various innovative transfer agreements). Laws enacted by states impose several potential legal obstacles to water transfers. See MEYERS & POSNER, supra note 26, at 5. For example, under western state law, water or water rights cannot be transferred if another water user would be adversely affected. See Shupe at 193; see also Gould at 463 (discussing origins and nuances of the "no injury" rule). Some states, including Wyoming, Montana, and North Dakota, have gone further, enacting statutes that impede free transfer of water rights or that prevent transfer across...
D. Cases Since Arizona I Affirming the PIA Standard

Since Arizona I, the Supreme Court has twice reconsidered and upheld the PIA standard. The first time was in Arizona II. The tribes affected by the 1963 decree argued that because the Special Master had underestimated the amount of reservation land available for irrigation, they were entitled to more water than they had been granted in Arizona I. The Court appointed a second Special Master, who recalculated the Indians' practicably irrigable acreage, and agreed that the decree should be modified.

The Court approved of the Special Master's calculations, and unanimously agreed that the PIA standard was still the appropriate measure of water rights, although it ultimately rejected most of the Indians' claims on other grounds. However, Arizona II modified the PIA standard in a way that changed the scope of PIA litigation. While the Special Master in Arizona I only considered whether irrigating Indian land was technologically

state lines, often reflecting a desire to preserve "agricultural ambience" of the state. See Gould at 461–63. Tribes may be immune from State restrictions on transfers, however, due to their status as quasi-sovereign entities. Chris Seldin, Interstate Marketing of Indian Water Rights: The Impact of the Commerce Clause, 87 CAL. L. REV. 1545, 1579 (1999) (citing Collins, The Future Course of the Winters Doctrine, 56 U. COLO. L. REV. 481, 490 (1985)). Contra Schapiro, supra note 56, at 288 n.60 ("Two Supreme Court decisions are read by at least one commentator to suggest that tribal transfers, if allowed, will have to be limited to protect junior appropriators...The practical effect of such a limitation would mean that the Indians could convey only a portion of their Winters rights.")

The primary barrier that Indians face when seeking to transfer their reserved rights is the Non-Intercourse Act, which provides that, "[n]o purchase, grant, lease, or other conveyance of lands, or of any other title or claim thereto, from any Indian nation or tribe of nations shall be of any validity in law or equity, unless the same be made by treaty or convention entered into pursuant to the Constitution." 25 U.S.C. § 177 (1982). Because of the Non-Intercourse Act, "tribes must have congressional permission to market their water because Indians can transfer interests in reservation real property only if Congress consents." See Marketing of Indian Water, supra note 4, at 542. The Ninth Circuit reaffirmed this understanding, holding, "Because the use of reserved water is not limited to fulfilling the original purposes of the reservation, Congress had the power to allot reserved water rights to individual Indians, and to allow for the transfer of such rights to non-Indians." Colville, 647 F.2d at 49.

59. Id. 612–13.
60. Id. at 612.
61. Id. at 615.
62. Id. at 616. The Court decided five-to-three that substantially altering the prior decree ran against "strong interests in finality" because it would injure non-Indian users who had relied on the earlier determination. Id. at 620–21. Justice Brennan, joined by Justices Stevens and Blackmun, asserted that the revised determinations of the new Special Master should have nonetheless been given effect, but otherwise agreed with the majority position. Id. at 64 (dissenting in part and concurring in part). Justice Marshall did not participate in the decision. Id.
possible, the Special Master in *Arizona II* also required irrigation to be *economically feasible*. In other words, he held that land is practicably irrigable only if the economic benefits of irrigation exceed the costs. The Special Master distinguished between economic feasibility and financial feasibility. Economic feasibility requires only that a project have a positive cost-benefit ratio, not that the tribe is actually able to raise the money to build the project.

In some ways, *Arizona II*'s modification of the PIA standard to require tribes to demonstrate economic feasibility of potential projects has made quantification of water rights more difficult for Indians. Economic feasibility has proven to be a pliable standard that allows for significant judicial discretion in estimating benefits and costs. Judicial determination of economic feasibility has been characterized as creating a "battle of experts" who "analyze the potential cost-benefit ratios of hypothetical irrigation projects that potentially could be employed to irrigate the

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66. Rejecting the tribes' argument that government subsidies might be considered in determining the economic viability of irrigation, and thus its "practicability," the Special Master wrote:

The argument by the tribes, that the definition of practicably irrigable should incorporate various subsidies to the Indian tribes, such that any analysis is financial analysis from the point of view of the Indians, are misguided. The past analysis accepted by the former Master and the Court clearly was a non-Indian economic analysis measuring total benefits against total cost for water without regard to the special considerations available to the tribes.

*Id.* at 573 (emphasis added); see also H. Stuart Burness et. al, *The "New" Arizona v. California: Practically Irrigable Acreage and Economic Feasibility*, 22 Nat. Resources J. 517, 518 (1982) (discussing the distinction between economic feasibility, meaning the benefits must exceed the costs, and financial feasibility, meaning a tribe's ability to repay those costs); Mergen & Liu, *supra* note 44, at 695 (noting that economic feasibility is easily confused with financial feasibility, as in the actual ability of tribes to procure funding for a project).

67. See Franks, *supra* note 63, at 580 (describing conflicting testimony by experts as to the proper discount rate during a trial in which Franks participated); Mergen & Liu, *supra* note 44, at 696.
reservation land so as to permit farming. Requiring tribes to demonstrate the economic feasibility of irrigating their lands has made it much more expensive for tribes to quantify their water rights, and increased the likelihood that their claims will be denied. Nonetheless, Arizona II was a victory for Indians in that it clearly reaffirmed that the PIA standard was the proper method for quantifying the water rights of Indian reservations.

Seven years after Arizona II, the U.S. Supreme Court upheld the PIA standard for a third time in In re The General Adjudication of All Rights to Use Water in the Big Horn River System ("Big Horn I"). Wyoming filed suit requesting a determination of the relative priority rights in the Big Horn River basin, affecting the water rights of the Wind River Indian reservation. The Wyoming trial court, on advice of a Special Master, applied the PIA standard and granted the Wind River Reservation rights to 487,292 acre-feet of water. The Wyoming Supreme Court affirmed the

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68. Fort Mojave Indian Tribes, 32 Fed. Cl. at 29. Although this case concerned a tribe's allegation that the United States had breached its fiduciary duty by failing to claim all the water they were entitled to under the PIA standard, the method of quantifying PIA was a central issue.

69. One tribe's Winters claims have been defeated due to their inability to demonstrate economic feasibility. In State ex rel. Martinez v. Lewis, the New Mexico Court of Appeals declined to disturb a district court's finding that a tribe's elaborate proposal to drill through a mountain to irrigate mountainous land was not economically feasible. 861 P.2d 235, 246 (N.M. Ct. App. 1993). See also Mergen & Liu, supra note 44, at 695 ("[T]he PIA standard works to the advantage of tribes inhabiting alluvial plains or other relatively flat lands adjacent to stream sources. In contrast, tribes inhabiting mountainous or other agriculturally marginal terrains are at a severe disadvantage when it comes to demonstrating that their lands are practicably irrigable.").

70. 753 P.2d 76, 84 (Wyo. 1988) [hereinafter Big Horn I].

71. Id.

72. Id. at 85.

73. See Mergen & Liu, supra note 44, at 701. The Wyoming state district court appointed Special Master Teno Roncalio to prepare recommendations on and in December 1982, he issued a 451-page report on the Indian's reserved water rights. In his report, the Special Master quantified the amount of surface water reserved for agriculture on the basis of PIA. He recommended an annual award of 288,355 acre-feet for lands that had been or were currently being irrigated. He also recommended an annual award of 188,937 acre-feet for lands that had not been previously irrigated and that an additional 20,000 acre-feet be set aside annually for non-agricultural uses and in-stream flows. Special Master, Report Concerning Reserved Water Right Claims by and on Behalf of the Tribes of the Wind Indian River Reservation, Wyoming Dec. 15, 1982, reprinted in Appendix to Petition for Writ of Certiorari at 446a, 547a, Wyoming v. United States, 488 U.S. 1040 (1989) (No. 88-309). The district court affirmed the Special Master's award of reserved water rights for PIA, but rejected the additional 20,000 acre-foot grant recommendation. See Mergen & Liu, supra note 44, at 701. The court held that agriculture was the sole purpose, and therefore PIA was the correct standard of quantification. Id.
district court's application of the PIA standard and calculation of economic feasibility three-to-two. 74

Wyoming appealed to the U.S. Supreme Court, arguing that the PIA standard should be rejected as the appropriate standard for measuring Indian water rights because it gave Indians too much water. 75 The Court granted certiorari to review whether the PIA standard was still the appropriate measure of Indian reserved water rights. 76 The Court ultimately affirmed the Wyoming Supreme Court's application of the PIA standard four-four, without opinion, with Justice O'Connor abstaining. 77

It was later revealed that the Indians narrowly escaped a crushing defeat. The conservative Justices of the Court were a heartbeat away from joining an opinion, drafted by Justice O'Connor before she recused herself, that would have accepted the arguments of state and private interests and thrown out the PIA standard as it is currently applied. 78

The essential points of these arguments, set forth by those who wish to limit the scope of Indian water entitlements, can be found in both O'Connor's

74. Big Horn I, 753 P.2d at 96–101, 103–04.
75. See Petition for Writ of Certiorari to the Supreme Court of Wyoming at 20–23, Wyoming v. United States, 488 U.S. 1040 (1989) (No. 88–309) [hereinafter Petition]. Wyoming argued that the PIA standard was inconsistent with recent opinions expressed by the Supreme Court in measuring non-Indian reserved rights. See id. n.20; see also infra notes 80–107 and accompanying text.
78. See Mergen & Liu, supra note 44, at 684–85. Justice O’Connor recused herself after she discovered a conflict of interest because her family owned a ranching corporation on land affected by the adjudication. Recently, legal scholars discovered that prior to recusing herself, O’Connor had drafted an opinion that would have commanded a majority opinion of the Court, as Justices Rehnquist, Scalia, and Kennedy, were prepared to join her, and Justice White would have concurred separately. Id. at 684 n.9. Justice Brennan drafted a dissent, which Justices Marshall and Blackmun were prepared to join, and Stevens drafted a separate dissent. Id. Drafts of Justice O’Connor’s opinion and Justice Brennan’s dissent were discovered among 173,000 documents donated to the library of Congress by Justice Marshall upon his death. Andrew Mergen and Sylvia Liu reproduced and commented on these drafts in their article. See generally id.

Justice O’Connor accepted the petitioner’s argument that the PIA standard, as applied by the Wyoming Supreme Court, was flawed because it was inconsistent with the non-Indian reserved rights cases. See infra notes 80–109. Her opinion sought to significantly narrow the scope of Indian reserved rights. See Mergen & Liu, supra note 44, at 706–08. She felt that sufficient water should not be granted to irrigate all practicably irrigable acreage; instead, she proposed that water should only be granted if the hypothetical projects required to irrigate land were reasonably likely to be built, either by the federal government or by the tribes themselves. Id. at 737. Further she felt Indian reserved rights should be granted “with sensitivity” to non-Indian users. Id. at 706–08. In his vigorous dissent, Justice Brennan noted that Indians were unable to use their reserved water because they lacked capital or did not receive enough federal funds. Id. at 708. Mergen and Liu argue that O’Connor’s opinion is contrary to Supreme Court precedent defining Indian reserved rights, and undermines tribal autonomy and self-sufficiency. Id. at 709–23.
draft opinion and the Arizona Supreme Court's decision to reject the PIA standard.

II. ARGUMENTS BY STATE AND PRIVATE INTERESTS TO LIMIT THE IMPACT OF THE PIA STANDARD

By adopting the practicably irrigable acreage standard, the U.S. Supreme Court gave Indians potential control over vast quantities of water, thereby reducing the amount of water controlled by states and private interests. Opponents of broad Indian reserved rights have formulated three major arguments to attack Indian reserved rights. These opponents have sought to reduce the impact of the PIA standard, or eliminate it entirely.

A. Non-Indian Precedent Should Limit Indian Reserved Rights

First, opponents have argued that principles articulated by the U.S. Supreme Court in two cases that adjudicated non-Indian water reservations, *Cappaert v. United States* and *United States v. New Mexico*, should apply to Indian reserved rights. They suggest that the PIA standard, as currently applied, is inconsistent with these cases because it awards more water than is necessary to fulfill the original purpose of Indian reservations and because it fails to weigh the interests of states and private parties against Indian tribal interests in determining the scope of tribal water rights.

1. The Restrictive Standards of *Cappaert* and *New Mexico*

In *Cappaert*, the Supreme Court articulated a minimalist standard for determining implied reservations of non-Indian water. The Court reviewed an injunction issued at the request of the federal government to prevent extensive pumping of groundwater by the defendants, the Cappaerts. The pumping caused a reduction in the water level in Devil's Hole Monument, thereby endangering with extinction a unique species

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79. See Crass, *supra* note 12, at 109. For example, the five tribes involved in *Arizona I* received priority over 900,000 acre-feet of water per year. *Arizona I*, 373 U.S. 596, 600 (1963).
83. See *infra* notes 102–09 and accompanying text.
84. See, e.g., Petition, *supra* note 75, at 20–23.
85. *Cappaert*, 426 U.S. at 129.
of fish that inhabited the pool.\textsuperscript{86} While the United States sought complete elimination of groundwater extraction by the Cappaerts,\textsuperscript{87} the Court affirmed an injunction allowing the level of the pool to drop to the point where the fish were not endangered.\textsuperscript{88} Writing for a unanimous Court, Justice Burger wrote, "the implied-reservation-of-water-rights doctrine, however, reserves only that amount of water necessary to fulfill the purpose of the reservation, no more."\textsuperscript{89}

The Court further restricted the interpretation of implied non-Indian water rights in \textit{United States v. New Mexico}.\textsuperscript{90} The Court was required to determine how much water the federal government implicitly reserved when it protected the Gila National Forest.\textsuperscript{91} Following \textit{Cappaert}'s logic, the Court had to determine the federal government's original purpose in creating the forest in order to award the minimal amount of water necessary to satisfy that purpose. Five justices\textsuperscript{92} interpreted this purpose very narrowly, determining that Congress intended only to preserve timber and secure waterfowls and that "[n]ational forests were not to be reserved for aesthetic, environmental, recreational, or wildlife-preservation purposes."\textsuperscript{93} The Court refused to grant more water than necessary to effectuate this narrow purpose,\textsuperscript{94} holding that water is necessary for a primary purpose of a reservation only if, without that water, "the purposes of the reservation would be entirely defeated."\textsuperscript{95} In contrast, any secondary use of water is not reserved, and may only be acquired based on priority through beneficial use under state law.\textsuperscript{96} The Court reasoned that its restrictive interpretation of the original purpose of the reservation was necessary because additional water devoted to the forest would come at the expense of a "gallon for gallon" reduction in water available to state and private interests.\textsuperscript{97}

\begin{itemize}
\item \textsuperscript{86} \textit{Id.} at 133, 141.
\item \textsuperscript{87} \textit{Id.} at 135.
\item \textsuperscript{88} \textit{Id.}
\item \textsuperscript{89} \textit{Id.}
\item \textsuperscript{90} 438 U.S. 696 (1978).
\item \textsuperscript{91} \textit{Id.} at 698 (stating that the Court's task was to determine "what quantity of water, if any, the United States reserved out of the Rio Mimbres when it set aside the Gila National Forest in 1899").
\item \textsuperscript{92} Justice Rehnquist drafted the opinion in which Justices Stevens, Blackmun, Burger, and Stewart joined. \textit{Id.} at 696. Justice Powell filed a dissenting opinion in which Justices Brennan, White, and Marshall joined. \textit{Id.} at 718–19. The dissenting opinion claims that water should be deemed to have been reserved in order to sustain wildlife and foliage. \textit{Id.}
\item \textsuperscript{93} \textit{Id.} at 708.
\item \textsuperscript{94} \textit{Id.} at 700 (citing \textit{Cappaert}, 526 U.S. at 128).
\item \textsuperscript{95} \textit{Id.} at 700 (emphasis added).
\item \textsuperscript{96} \textit{Id.} at 702.
\item \textsuperscript{97} \textit{Id.} at 705.
\end{itemize}
Taken together, *Cappaert* and *New Mexico* narrow the scope of federal reserved water rights, at least with respect to non-Indian reservations. First, *Cappaert* requires the minimum amount of water possible to achieve the original purpose of the reservation be granted.\(^9\) Second, *New Mexico* requires narrow construction of a reservation's original purpose, reserving only enough water necessary for the narrow, primary purpose, but not providing water for secondary benefits.\(^9\) Third, *New Mexico* suggests that reserved water should be granted with "sensitivity" to current state and private water interests,\(^9\) allowing the possibility that state and private interests might outweigh federal interests under some circumstances.\(^9\)

2. Application of *Cappaert* and *New Mexico* to Indian Reservations

Although both *Cappaert* and *New Mexico* adjudicate non-Indian reservations of water, opponents of broad Indian reserved rights have argued that the logic of these cases should apply to all federal reservations, including Indian reservations.\(^10\) They further argue that these cases should be read to implicitly overrule, or at least sharply limit, the "potentially generous"\(^9\) PIA method of determining Indian reserved water rights.\(^10\)

At least two courts have explicitly expressed the view that *Cappaert* and *New Mexico* limit Indian reserved rights, even though they adjudicated non-Indian reserved rights. In *Colville Confederated Tribes v. Walton*,\(^10\) the Ninth Circuit applied the principle articulated in *New Mexico*,\(^10\) holding that Congress is presumed to have reserved rights only

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99. See *New Mexico*, 438 U.S. at 708.
100. This aspect of *New Mexico* is sometimes called the "sensitivity doctrine" based on language from Powell's dissent, which agreed with the majority's "sensitivity" to state water interests, but disagreed with its interpretation of the intent of Congress. *Id.* at 718-19.
101. Opponents of Indian reserved rights claim the "sensitivity test" of *New Mexico* imposes an additional barrier to reserved rights by balancing them against state interests. See *Crass*, *supra* note 12, at 115; see also *Mergen & Liu*, *supra* note 44, at 697.
102. See, e.g., *Fisher*, *supra* note 29, at 1085 (arguing that the *Cappaert* case "marked a turning point in the Court's reserved rights jurisprudence").
104. *Crass*, *supra* note 12, at 116 (noting that "States quote the *Cappaert* statement that the reserved rights doctrine 'reserves only that amount of water necessary to fulfill the purpose of the reservation, no more' to support the argument that tribal reserved rights should be quantified to a 'minimal need' standard"); see, e.g., *Petition*, *supra* note 75, at 20-23 (setting forth such an argument).
105. 647 F.2d 42 (9th Cir. 1981).
106. United States v. *New Mexico*, 438 U.S. 696, 702 (1978) (noting that "[w]here water is only valuable for a secondary use of the reservation, however, there arises the
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for the primary and not the secondary purposes of Congress in creating the Indian reservation. The U.S. Claims Court went further in *White Mountain Apache Tribe of Arizona v. United States*, stating that while the PIA standard is still the accepted method of quantification of tribes' reserved rights, it is restricted by *Cappaert* and *New Mexico*. *White Mountain* and, to a lesser extent, *Colville* support the position of opponents of broad Indian water rights that the limiting principles of *Cappaert* and *New Mexico* apply to Indian reservations and therefore limit the scope of Indian entitlements.

B. Indian Use of Their Reserved Water Should Be Limited to Agricultural Purposes

A second argument waged by opponents of broad Indian water rights is that tribes should only be able to use their water for agricultural purposes because the practicably irrigable acreage standard should be understood in an agricultural context. In other words, they argue that the method of quantifying reserved rights should restrict the Indians' use of the water. There is some judicial support for this interpretation of the PIA standard, although it directly contradicts the view expressed by the contrary inference that Congress intended, consistent with its other views, that the United States would acquire water in the same manner as any other public or private appropria-tor”).

107. *Colville*, 647 F.2d at 47. The Court of Appeals went on to find a broad primary purpose for the Colville reservation that included creation of a fishery, and held that this purpose was included in the implied reservation. *Id.* at 47–48.


109. *Id.* at 626. According to the Court:

The term "practicably irrigable acreage" is now recognized as the quantification of a tribe's Winters Doctrine rights. However, more recent Supreme Court decisions manifest a restrictive interpretation of that measure. [*Cappaert*] stated that *Winters* had held that a reservation of water rights sufficient to accomplish the purpose of the reservation is made when the Government reserves land for a reservation or other federal enclave... The law is now settled that "Congress reserved 'only that amount of water necessary to fulfill the purpose of the reservation, no more.'" United States v. *New Mexico* (quoting *Cappaert* and *Arizona v. California*). The Supreme Court in United States v. *New Mexico* ventured a step further: "Each time this Court has applied the 'implied-reservation-of-water doctrine,' it has carefully examined both the asserted water right and the specific purposes for which the land was reserved, and concluded that without the water the purpose of the reservation would be entirely defeated."

*Id.* at 626 (citations omitted).

Special Master who originally defined the standard in *Arizona I*. Wyoming Supreme Court Justice Thomas expressed this opinion in his dissent from the court's affirmation of the practicably irrigable acreage standard in *Big Horn I*. He assumed that the PIA standard implicitly limits an Indian reservation's purpose to agriculture. While this conception was not expressed by a majority of the Wyoming Supreme Court at that time, in a later proceeding of the Big Horn River adjudication, the court explicitly held that Indians could not change their future water use without referring to state law. According to Karen Crass, "limiting use in this way means tribes are not free to reallocate water previously used for agriculture to other uses such as instream flow or for natural resources development projects that might prove better for tribes economically." Under this interpretation of the PIA standard, tribes that successfully quantify their *Winters* rights win a Pyrrhic victory; the price they pay for their water is that they limit themselves to an agrarian existence.

C. "Economic Feasibility" Should be Interpreted Narrowly to Limit Indian Rights

Finally, opponents of broad Indian reserved water rights have argued for an extremely narrow interpretation of "economic feasibility" in calculating the practicably irrigable acreage of reservations. Some have suggested that the unwillingness of private interests to fund irrigation projects, and the fact that in recent years federal projects have not been profitable, are evidence of the lack of economic feasibility of such projects. One commentator argues that the cost of irrigating tribal land...
should be multiplied by a discount rate that reflects the true “opportunity cost” of using the money.\textsuperscript{118} In other words, the amount a tribe would need to pay to obtain financing for a hypothetical irrigation project should be included as a cost when evaluating economic feasibility. Further, this commentator proposes that in determining the economic feasibility of irrigating tribal lands, courts should include the “opportunity cost” of alternate, off-reservation uses in the analysis.\textsuperscript{119} This would allow Indian reserved rights only if Indians propose to put the water to better use than the non-Indian user next in line for the water.\textsuperscript{120} These restrictive interpretations of “economic feasibility” insure tribal PIA claims will be small, as they allow tribes to claim only as much water as they have the current financial resources to utilize, which is unlikely to be significantly more than they have already put to use.

III. \textit{Gila V: Rejection of the PIA Standard}

\textit{Gila V}\textsuperscript{121} marked the first time a court refused to apply the practicably irrigable acreage standard for measuring Indian reserved water rights since the U.S. Supreme Court established the doctrine in \textit{Arizona I}.\textsuperscript{122} \textit{Gila V} proceedings began when parties interested in the Gila River petitioned for a general stream adjudication.\textsuperscript{123} In determining the entitlements of Indian tribes along the river, the Arizona trial court applied the PIA standard.\textsuperscript{124} The trial court rejected the notion that \textit{Cappaert} and \textit{New Mexico} created uncertainty as to the proper method of quantifying Indian reserved rights, holding that:

While as to other types of federal lands courts have allowed controversy about what the purpose of the land is and how much water will satisfy that purpose, as to Indian reservations the courts have drawn a clear and distinct line. . . . [The reservation is measured] by the amount of water necessary to

\textsuperscript{118} See Franks, supra note 63, at 581.
\textsuperscript{119} See Franks, supra note 63, at 573–74. This is a reformulation of the “sensitivity” doctrine in economic terms.
\textsuperscript{120} \textit{Id.}
\textsuperscript{121} 35 P.3d 68 (Ariz. 2001).
\textsuperscript{122} \textit{See id.} at 81.
\textsuperscript{123} A general stream adjudication is a “legal proceeding involving multiple users brought to determine ownership and characteristics of water rights to a river system or other common sources of water.” Conference Report, 5 U. DENV. WATER L. REV. 308 (2001) (quoting John E. Thorson, former Special Master for Arizona General Stream Adjudication).
\textsuperscript{124} \textit{Gila V}, 35 P.3d at 71.
irrigate all of the *practically irrigable acreage* ... on that reserva-

By declining to apply the limiting principles of *Cappaert* and *New Mexico* to Indian water rights, the trial court obviated an inquiry into the "primary" or "secondary" purposes of the Indian reservations, and avoided the requirement that Indian water rights be adjudicated "with sensitivity" to state and private interests. Instead the trial court relied on the certainty of the PIA standard, as defined by the U.S. Supreme Court.

A. The Arizona Supreme Court's Justifications for Rejecting the PIA Standard

1. The PIA Standard Prejudices Indians

The Arizona Supreme Court granted interlocutory review of *Gila V* to "determine the manner in which water rights on Indian lands are to be quantified," and ultimately rejected the PIA standard as the appropriate measure. The court's main criticism of the PIA standard was that it unfairly prejudiced Indians.

As a preliminary matter, the court disagreed with the lower court's determination that *Cappaert* and *New Mexico* are inapplicable to Indian water. Rather, the Arizona Supreme Court held that the original purpose of the Indian reservations must be determined before water rights could be allocated. Claiming to construe this purpose liberally, in light of the reality that the federal government's true motives in creating Indian reservations were often less than noble, the court held that the purpose of Indian reservations is to create a "permanent home and abiding place" for the Indian people.

125. *Id.* (citing Order, September 9, 1988 at 17).
126. *Id.* at 72.
127. *Id.* at 73–74.
128. *Id.* at 74 (claiming that the general principle under *Cappaert* and *New Mexico*, that the purposes of federal reservations must be construed narrowly in determining appurtenant water rights, did not apply to Indian reservations).
129. *Id.* at 75 (citing Rusinek, *supra* note 64, at 406) ("[T]he fact is that Indians were forced onto reservations so that white settlement of the West could occur unimpeded.").
130. *Id.* at 76 (citing Winters v. United States, 207 U.S. 564, 565 (1908)). The court reasoned that creation of a homeland for Indians was the primary and only purpose of the reservation, obviating the need to distinguish between primary and secondary purposes as suggested by *New Mexico*. See *id.* at 76–77. Cosen's article praises *Gila V* primarily for this aspect of the Arizona Supreme Court's decision. She writes:

On November 26, 2001, the Arizona Supreme Court introduced an element of sanity and equity into the reserved water rights arena by concluding that Indian reservations were actually established for the purpose of providing a
The Arizona Supreme Court purported to reject the practicably irrigable acreage standard because it was unfair to Indians and inconsistent with the "homeland purpose" of the reservation. The court gave two reasons for this conclusion. First, it claimed that the PIA standard binds tribes to an agrarian way of life because it requires them to use their water solely for agricultural purposes. The court took notice of the general macroeconomic trend in the U.S. economy away from agriculture, and concluded that the PIA standard constrained tribes in "the twenty-first century, to use water in the same manner as their ancestors in the 1800's." The court further wrote that "[j]ust as the nation's economy has evolved, nothing should prevent tribes from diversifying their economies if they so choose and are reasonably able to do so."

Second, the court criticized the "economic feasibility" requirement of the PIA standard for placing an undue burden on tribes seeking to quantify their reserved rights. It pointed out that the exclusive focus on irrigable acreage works injustice against tribes inhabiting mountainous or agriculturally marginal terrain, and risks the denial of reserved water to these tribes. The court suggested, however, that economic feasibility was an unreasonably high bar for any tribe:

[L]arge agricultural projects [requiring irrigation] are risky, marginal enterprises ... demonstrated by the fact that no federal project planned in accordance with the Principles and Guidelines [adopted by the Water Resources Council of the Federal Government] has been able to show a positive benefit/cost ratio in the last decade [1981 to 1991].

More startling than the ruling itself is the fact that it took 93 years from the recognition of Indian reserved water rights by the U.S. Supreme Court for a state court to reach this conclusion.

Cosens, supra note 19, at 836 (citations omitted). I agree that the only sensible view of the purpose of Indian Reservations is to create a homeland for Indians. However, I reject Cosens assumption that the PIA standard is inconsistent with such a purpose, and I disagree that the "original purpose" of an Indian reservation is relevant to quantifying that reservation's water rights.

131. See Gila V, 35 P.3d at 76-79.
132. See id. at 75-76.
133. Id. at 76.
134. Id.
135. See id. at 78-79.
136. Id. at 78 (citing State ex rel Martinez v. Lewis, 861 P.2d 235, 246-51 (N.M. Ct. App. 1993)); see supra note 69.
137. Gila V, 35 P.3d at 78 (quoting Franks, supra note 63, at 578). The court also quoted the following from Judge Thomas's dissent in Big Horn I:

I would be appalled ... if the Congress ... began expending money to develop water projects for irrigating these Wyoming lands when farm more
Thus, the court found that the PIA Standard forces tribes "to prove economic feasibility for a kind of enterprise that . . . is simply no longer economically feasible in the West." Ironically, the Arizona Supreme Court claimed to reject the PIA standard in order to protect the affected tribes from the consequences of a standard specifically formulated by the U.S. Supreme Court to protect Indian interests.

2. The PIA Standard Prejudices State and Private Interests

The primary objection to the PIA standard expressed by the Arizona Supreme Court was that it prejudiced Indians. Nevertheless, the court suggested an alternate justification that was inconsistent with its primary objection. In the two sentences at the end of its assessment of the PIA standard, the court noted that the standard "potentially frustrates the requirement that federally reserved water rights be tailored to minimal need." The opinion continued, "rather than focusing on what is necessary to fulfill a reservation's overall design, PIA awards what may be an overabundance of water by including every irrigable acre of land in the equation." Although it appeared not to rest its opinion on this argument, this language suggests that the Arizona Supreme Court was in fact concerned that the PIA standard was overgenerous, and thus inconsistent with the limiting principle of Cappaert and New Mexico, and unfairly prejudicial to state and private interests.

B. The Arizona Supreme Court's Standard for Determining Water Rights

Instead of the practicably irrigable acreage standard, the Arizona Supreme Court advocated a fact-intensive inquiry to determine the

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Id. at 79 (quoting Big Horn 1, 753 P.2d at 119 (Thomas, J. dissenting)).
138. Id. at 78.
139. Id. at 79.
140. Id.
141. Id.
142. Id. at 80. The court cited Cappaert earlier for the proposition that the grant of a reserved right must be tailored to "minimal need," and New Mexico for the requirement that water must be so vital to a reservation's original purpose that "without the water the purposes of the reservation would be entirely defeated." Id. at 73.
Abandoning the PIA Standard

amount of water necessary to create a permanent homeland. This inquiry requires the consideration of such factors as a tribe’s history, culture, financial resources and economic base, the geography and topography of the reservation, past use of water on the reservation, and the present and projected population of a tribe. The court held that any proposed use by Indians must be scrutinized for both engineering and economic feasibility, an approach nearly identical to the PIA “economic practicability” two-part analysis. The court further specified that the development projects must be “achievable from a practical standpoint—they must not be pie-in-the-sky ideas that will likely never reach fruition.” The opinion suggested a presumption against irrigation projects, noting that “[i]ncreasing the use of water for irrigation runs counter to a historic trend in western water use the transition from agricultural to less consumptive and higher-valued municipal and industrial uses.” The Arizona Supreme Court concluded with a nod to the “sensitivity doctrine” suggested in New Mexico, claiming the “minimalist approach” it used to quantify Indian water rights in Gila V demonstrates appropriate sensitivity and consideration to existing users of water.

IV. THE ARIZONA SUPREME COURT ERRED IN REJECTING THE PIA STANDARD

In refusing to apply the PIA standard, the Arizona Supreme Court relied on the three major arguments advanced by opponents of the PIA standard: that the PIA standard is unfair to Indians because it requires tribes to use their water only for agricultural purposes, that proposed Indian use is rarely, if ever, “economically feasible,” and that Indian reservations of water must be narrowly tailored to the initial purpose of the reservation. The Arizona Supreme Court’s decision is flawed because each principle is inconsistent with U.S. Supreme Court precedent. The Arizona Supreme Court’s reasoning therefore violates the holdings of the U.S. Supreme Court with respect to reserved Indian water rights, its interpretation of the practicably irrigable acreage standard, and the logic upon which the standard relies.

143. Id. at 79.
144. Id. at 79–80.
145. Id. at 80–81.
146. Id. at 81.
147. Id. at 80 (citing Rusinek, supra note 64, at 410.)
148. See supra notes 100–01 and accompanying text.
149. Gila V, 35 P.3d at 81.
150. See supra notes 79–120 and accompanying text.
A. The PIA Standard Does Not Restrict Tribes to Agricultural Use of Their Water

The Arizona Supreme Court claimed that the PIA standard allows tribes to use their water only for agricultural purpose, and that consequently the PIA standard prevents Indian tribes from developing and modernizing. They argued that by requiring tribes to live an anachronistic lifestyle, the PIA standard undermines the congressional purpose of Indian reservations, to create a “permanent homeland and abiding place” for Indians.1

This conclusion is based on the faulty assumption that PIA water can only be used for agricultural purposes. This is the most obvious error of the Arizona Supreme Court in Gila V, as this assumption is explicitly contrary to the holding of the U.S. Supreme Court in Arizona I. The Court adopted the Special Master’s report defining the PIA standard, which established reserved water rights as a “property interest” to be used or disposed of for the benefit of the Indians.153 According to the Special Master’s report in Arizona I, tribes are free to use their reserved right in any manner “such as the relevant law may allow,” and are not restricted to agricultural use.154

This language directly contradicts the Arizona Supreme Court’s assumption that the water awarded under the PIA standard may only be used by tribes for agricultural purposes. Since tribes are free to use their water, once quantified using the PIA standard, in any manner allowed by law, then the standard will not constrain Indians “to use water in the same manner as their ancestors in 1800’s” as the Arizona Supreme Court asserts.155 Thus, contrary to the Arizona Supreme Court’s assumption, using the PIA standard to quantify a tribe’s water rights will not prevent it from modernizing, since the standard in no way impairs the flexibility of the Indians to use their water as they please. Consequently, the Arizona Supreme Court’s criticism that the PIA standard controverts Congress’s purpose of creating a permanent homeland for the Indians by forcing them to live as their ancestors did in centuries past, is erroneous.

151. Gila V, 35 P.3d at 75–76; supra notes 132–34 and accompanying text.
152. Gila V, 35 P.3d at 75–76.
153. See supra note 56 and accompanying text.
154. Colville Confederated Tribes v. Walton, 647 F.2d 42, 48 (9th Cir. 1981) (citing Report from Simon H. Rifkind, Special Master, to the Supreme Court 265–66 (December 5, 1960)); see also supra notes 56–57 and accompanying text (citing scholarship discussing tribal water marketing as one legitimate non-agricultural use for PIA water).
155. Gila V, 35 P.3d at 76.
B. The Arizona Supreme Court Incorrectly Defines "Economic Practicability"

The court is also wrong in its determination that the PIA standard is too burdensome to tribes because it is nearly impossible to demonstrate the economic practicability of irrigation projects. The court stated that the PIA standard requires tribes to demonstrate the economic viability of "a kind of enterprise that, judging from the evidence of both federal and private willingness to invest money, is simply no longer economically feasible in the West."\(^{156}\)

If irrigation is not economically feasible, then practicably irrigable acreage would not exist. The fact that reserved water has been routinely granted for tribes inhabiting agriculturally hospitable regions belies the assertion that irrigation is not "economically feasible" as defined by the Supreme Court. For example, the Gila V trial court conducted a thorough analysis, and determined that the tribes in this case did have acreage that was practicably irrigable.\(^{157}\) In fact, only one court has denied the PIA claims of tribes because it determined that irrigating their land was not "economically feasible."\(^{158}\)

The paradox is resolved by closely examining how the Arizona Supreme Court conceived of "economic practicability." The opinion did not define the term directly, but indirectly shed light on its usage.\(^{159}\) While describing the criteria to be used in lieu of the PIA standard, the Arizona Supreme Court directed the lower court to consider a tribe's economic station, including its "technology, raw materials, financial resources, and capital . . . ."\(^{160}\) The court explained that this means proposed Indian water use must be "economically sound" and achievable from a practical standpoint rather than "pie-in-the-sky ideas."\(^{161}\) For the Arizona Supreme Court to consider a proposed Indian water use project economically practical, the tribe must have sufficient capital and financial resources to complete it. In other words, the court equated economic feasibility, a positive cost-benefit ratio, with financial feasibility, the ability to obtain financing and capitalize the irrigation project.

The Special Master in Arizona II explicitly rejected an interpretation of "economic feasibility" that includes these financial considerations.\(^{162}\)

\(^{156}\) Id.
\(^{157}\) See supra notes 124–25 and accompanying text.
\(^{158}\) The exceptions are the tribes considered in State ex rel Martinez v. Lewis, 861 P.2d 235 (N.M. Ct. App. 1993). The tribes inhabited a mountainous region that required an elaborate irrigation plan, which involved involving drilling through a mountain and pumping water up 400 feet. Id. at 246–51; see also supra note 69.
\(^{159}\) Gila V, 35 P.3d at 80.
\(^{160}\) Id. (emphasis added); see supra note 144 and accompanying text.
\(^{161}\) Gila V, 35 P.3d at 81; see supra note 146 and accompanying text.
\(^{162}\) See supra note 66 and accompanying text.
His report, adopted by the U.S. Supreme Court, foreclosed consideration of a tribe's ability to pay for a hypothetical project, requiring instead that a project be evaluated on its cost-benefit economic merits.\(^\text{163}\) He was concerned that government subsidies would facilitate projects that otherwise would not make economic sense in terms of cost-benefit ratio.\(^\text{164}\)

However, his findings apply with equal force to projects that are currently not financially feasible for tribes, but for which the economic benefits nevertheless exceed the costs. Economic feasibility, defined as cost-benefit ratio, rather than ability to capitalize, is the standard adopted by the U.S. Supreme Court. It is also the standard utilized by the lower court in this case to determine whether practicably irrigable acreage exists.\(^\text{165}\)

The Arizona Supreme Court's claim that the PIA standard is unfair to tribes because irrigation projects are almost never economically feasible is erroneous because it considers the Indian's practical ability to finance their projects as a factor of economic feasibility. Like the court's claim that the PIA standard binds tribes to agricultural use, this consideration is in derogation of legal principles established by the Supreme Court, and almost universally accepted by other courts. Thus, the Arizona Supreme Court's conclusion that the PIA standard deals unfairly with Indian tribes is unsound.

The court made one argument relating to economic feasibility that warrants separate consideration. The court noted that the PIA standard discriminates against tribes on the basis of topography and geography by granting water rights exclusively on the basis of irrigable acreage.\(^\text{166}\) It is true that the PIA standard was designed with tribes that inhabit deserts and plains, with water running through arid but otherwise fertile soil, in mind. This standard may therefore exclude some tribes with different circumstances.\(^\text{167}\) Nevertheless, it is unfair to strip an entitlement belonging to most tribes because a few are excluded. It is particularly inappropriate to violate Supreme Court precedent in this manner when the parties before the court are proper beneficiaries of the intended right.

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163.  See supra note 66.
164.  See supra note 66.
165.  See supra note 125 and accompanying text.
166.  See supra note 136 and accompanying text.
167.  See supra note 69 and accompanying text.
C. The "Minimal Need" Analysis of Cappaert and New Mexico Do Not Apply to Indian Reserved Water Rights

While the Arizona Supreme Court spends several pages arguing about how the PIA standard is unfair to Indians, it devotes only two conclusory sentences to the proposition that the PIA standard "may potentially frustrate" the minimal need requirement articulated in Cappaert and New Mexico. This approach seems disingenuous, since the Arizona court advances, in place of the PIA, a formula based on a tribe's historical use and financial resources that ultimately may give tribes little more than what they had before litigation. The court deliberately avoided resting its holding on the arguments, asserted by opponents of Indian reserved rights, that the PIA standard is not minimally tailored to the purpose of the reservation or sensitive to non-Indian users. Perhaps the court avoided these arguments because the U.S. Supreme Court already upheld the PIA standard over these objections. Nonetheless, this is probably the strongest attack on the PIA standard. Many commentators and judges have viewed Cappaert and New Mexico as implicitly overruling or modifying the PIA standard. In spite of the Arizona Supreme Court's skirting of the issue of the effect of Cappaert and New Mexico on the PIA standard, consideration of the validity of the PIA in light of this recent Winters jurisprudence is warranted.

The essential question is whether the limiting principle articulated in Cappaert and New Mexico (that only a minimal amount of reserved water may be granted to fulfill a federal non-Indian reservation's narrowly defined purpose) applies to the quantification of Indian reserved rights. The Supreme Court affirmed the PIA standard more recently than either Cappaert or New Mexico in Wyoming v. United States. However, although

168. The opinion spends two pages discussing the history of the Winters doctrine, including Cappaert and New Mexico. See Gila V, 35 P.3d 68, 72-73 (Ariz. 2001). The Court devotes nearly six pages to discussing the injustices of the PIA standard. Id. at 73-79.
169. See supra note 139 and accompanying text.
170. Although the court concluded that a broad homeland purpose obviated a primary-secondary purpose inquiry of New Mexico it emphasized the minimal need principle. See supra notes 128-30 and accompanying text.
171. See supra notes 143-49 and accompanying text.
172. See supra notes 83-109 and accompanying text (discussing the minimalist principles of Cappaert and New Mexico and their potential application to Indian water rights).
173. A major thrust of appellant's petition to appeal the decision of the Wyoming Supreme Court in Big Horn I was that the PIA standard is inconsistent with the "restrictive interpretation" dictated by Cappaert and New Mexico. See Petition, supra note 75, at 19-23; see also supra note 78 and accompanying text.
174. See supra notes 102-09 and accompanying text.
175. Wyoming v. United States, 492 U.S. 406, 407 (1989) (per curiam); see also Crass, supra note 12, at 116 (pointing out that the PIA standard was upheld in the Big Horn
the Court officially upheld the PIA standard over allegations that *Cappaert* and *New Mexico* undermine its viability, the release of Justice Marshall’s papers reveals that five Justices, four of whom are currently sitting on the Supreme Court, were critical of the PIA standard. A stronger justification than pure *stare decisis* is therefore desirable to justify insulating Indian reserved water rights from the limits of *Cappaert* and *New Mexico*. In fact, Indian water reservations are distinguished from the reservations discussed in *Cappaert* and *New Mexico* in three important ways.

1. The “Minimal Need” Requirement Is Inconsistent with Cannons of Construction Pertaining to Indian Rights

Unlike other federal reservations of water, Indian reserved water rights warrant liberal construction because they concern Indians. Canons for interpreting treaties and statutes require that “all ambiguities . . . are to be interpreted in favor of the tribes.” The original purpose of Indian reservations was “to promote the well-being of tribes and to ensure their self-sufficiency.” In *Colville Confederated Tribes v. Walton*, the Ninth Circuit expressed the idea as follows: “the general purpose [of an Indian reservation], to provide a home for the Indians, is a broad one and must be liberally construed. We are mindful that the reservation was created for the Indians, not for the benefit of the government.” These doctrinal principles are bolstered by the practical consideration that Indian reservations are some of the “most economically depressed sectors of the nation” and thus an overabundance of water resulting from the PIA standard is an acceptable consequence of insuring that the interests of adjudication, the most recent Supreme Court decision with respect to the quantification of Indian water rights).

176. Justices Rehnquist, Stevens, and Kennedy were apparently prepared to join Justice O’Connor’s draft opinion. See *supra* note 78 and accompanying text. Although the standard advanced by O’Connor’s draft opinion was technically a modification of the PIA, rather than an outright rejection, it applied the logic of *Cappaert* and *New Mexico* to reduce the scope of Indian *Winters* rights. See *supra* note 78 and accompanying text. In fact, the standard advanced in the draft opinion arguably went even further in limiting Indian water rights, as the “sensitivity” principle may have required potential benefit to Indians to be balanced against injury to State interests. This is not how the Arizona Supreme Court applied the sensitivity doctrine. *Gila V*, 35 P.3d 68, 81 (Ariz. 2001) (noting that its minimalist approach demonstrates appropriate sensitivity and consideration of existing water rights without explicitly balancing their interests).


178. *See Mergen & Liu, supra* note 44, at 713.

179. 647 E2d 42 (9th Cir. 1980).

180. *See Mergen & Liu, supra* note 44, at 717 (citing *Colville*, 647 E2d at 47).

181. *Id.*
historically disadvantaged, disenfranchised people are protected. Because Cappaert and New Mexico mandate narrow, rather than liberal, construction of treaties and statutes reserving water rights, they are doctrinally inconsistent with principles that concern Indians.

2. Indian Reserved Water Rights are Judicially Implied Reservations

When courts adjudicate an express reservation of water, their goal should be to determine the amount of water Congress intended to reserve. The same is not true for judicial recognition of implied reservations, where the documents reserving the land make no reference to water. In such cases, the judicial decision to grant water represents an equitable determination by the court that a grant of water is necessary to promote justice, rather than an interpretation of the original intent at the time the reservation was created.

The reservations in Cappaert and New Mexico closely resemble express rather than implied reservations of water, because the policy makers that created these reservations specifically referred to water in the documents creating the reservations. In Cappaert, the executive proclamation that reserved Devil's Hole as a national monument specifically referenced the existence of "a remarkable underground pool." This proclamation noted the importance of preserving the pool, as well as a unique species of fish found only therein. Similarly, the National Parks Act considered in New Mexico explicitly addresses water.

Cappaert and New Mexico therefore suggest the following principle of construction: When the federal government reserves a resource such as water for a specific purpose, but does not explicitly define the quantity of that reserved resource, the court will presume the quantity reserved to be the minimum amount necessary to carry out the specified purpose of the

182. An express reservation of water is defined by documents that explicitly say what water is reserved.
183. See Michael R. Newhouse, Note, Recognizing and Preserving Native American Treaty Usufructs in the Supreme Court: The Mille Lacs Case, 21 PUB. LAND & RESOURCES L. REV. 169, 198 n.227 (2000) (noting that an implied federal reserved right exists where "public land withdrawals (such as Indian reservations) are silent concerning water rights" and that in such cases "a right to water on withdrawn land will be implied").
184. Technically the water reservations in Cappaert and New Mexico are implied because the documents creating these land reservations do not explicitly lay claim to a quantity of appurtenant water.
186. Id. at 132–33; see supra notes 85–88 and accompanying text.
187. United States v. New Mexico, 438 U.S. 696, 702–03 (1978) ("Congress authorized appropriations ... including the acquisition of water rights or of lands or interests in lands or rights-of-way for use and protection of water rights necessary or beneficial in the administration and public use of the national parks and monuments.").
reservation. In other words, courts should presume Congress and other governing bodies intend to carry out their purposes with as little intrusion on the rights of others as possible, unless otherwise specified. It is appropriate that the federal government, a government of limited powers, would do so, in order to minimally infringe on state and local prerogatives.

In contrast, the statutes or treaties creating Indian reservations made no mention of water. Indian reserved water rights have been created and defined by courts, not Congress. The reservation of water is implied by the Court. In the law, for a court to “imply” means “to impute or impose on equitable or legal grounds.” When the Supreme Court “implied” a reservation of water for the Indians in Winters, the Court was not engaging in an interpretive exercise, but rather an equitable one. Similarly, when the Court quantified the reserved amount of water as what is necessary for practicable irrigable acreage in Arizona I, it made an equitable determination that Indian reservations should be granted a “generous” supply, so as to avert any risk they would ever come up dry. Perhaps the court considered the quality of the land that the Indians were allowed to keep, or the way they had been treated historically, but ultimately it determined this was the “only feasible and fair way” to protect the Indians.

In some respects, it is absurd to speak of the original Congressional “purpose” of the Indian reservations with respect to water rights. The congressional “purpose” in establishing Indian reservations is unclear. Like any legislation, it had numerous purposes and motives, one of which was to get the Indians out of the way of White settlers. Most courts would not be interested in effectuating this mandate today. The Arizona Supreme Court’s requirement, that only the minimum amount of water should be reserved so as to fulfill the original purpose of Congress in creating the Indian reservation, is therefore illusory.

3. Granting Indians Reserved Water Rights is Economically Efficient

A third distinction can be made between Indian reserved water rights and the water reservations in Cappaert and New Mexico. Granting Indians water rights does not cause water to be removed from productivity and usually will not hinder state and private use. New Mexico suggests

188. See supra note 41 and accompanying text (noting that there is no express provision for water in the treaty at issue in Winters).
189. BLACK'S LAW DICTIONARY 333 (2nd Pocket ed. 2001).
190. See supra note 53 and accompanying text.
191. See supra note 54 and accompanying text.
192. See supra note 54 and accompanying text.
193. See supra note 129 and accompanying text.
that federal reserved rights should be construed narrowly because they result in a “gallon-for-gallon” reduction in use by state interests.\textsuperscript{194} This was also the case in \textit{Cappaert}.\textsuperscript{195}

However, this does not apply to Indian reserved water rights. Indians usually do not have the resources necessary to realize their “paper” water rights,\textsuperscript{196} even after they are confirmed in court.\textsuperscript{197} The water projects necessary to actually put water to use are often prohibitively costly, and most tribes lack the financial resources to build them.\textsuperscript{198} Thus, granting Indians reserved water does not generally result in the diversion of large amounts of additional water from state and private users.

Tribes care about preserving their reserved water rights in order to protect distant future interests, when they might someday be able to develop their water rights. Indians may also be able to market their water rights.\textsuperscript{199} Justice Brennan, at the conclusion of his draft dissent in \textit{Wyoming v. United States},\textsuperscript{200} states that what is truly at stake for Indians is the possibility that tribes might market their water.\textsuperscript{201} While there are still barriers to tribes marketing the water granted to them under the PIA standard, such as Congressional permission under the Non-Intercourse Act,\textsuperscript{202} successful quantification of their claims at least provides a platform from which tribes can negotiate. Even without Congressional authorization to expressly lease their resource, tribes might be able to extract some profit through deferral agreements, wherein a tribe bargains not to develop or use a quantity of water if that use might injure a user

\textsuperscript{194.} See \textit{supra} note 97 and accompanying text. \\
\textsuperscript{195.} See \textit{supra} notes 85–88 and accompanying text. \\
\textsuperscript{196.} A “paper right” is a legal entitlement that is not necessarily realizable. See Susan D. Brienza, \textit{Wet Water vs. Paper Rights: Indian and non-Indian Negotiated Settlements and Their Effects}, 11 \textit{STAN. ENVTL. L.J.} 151, 160 (1992) (“From the Native American point of view, the legal result of \textit{Winters v U.S.} and \textit{Arizona v California} is that the tribes possess strong paper rights, yet the practical result is that with the concomitant and continued over-use of the actual water by non-Indians, the tribes have very little wet water.”). \\
\textsuperscript{197.} See E. Brandon Shane, \textit{Water Rights and Gila River III: The Winters Doctrine Goes Underground}, 4 \textit{U. DENV. WATER L. REV.} 397, 421 (2001) (noting that “paper rights” to surface water are often of little or no use due to the lack of infrastructure to transport water and put water rights to practical use”; see also \textit{Marketing of Indian Water}, \textit{supra} note 4, at 545 (“So long as tribes lack capital, reserved rights will go unused and the tribes’ senior priority dates will have little practical effect on non-Indian uses.”)). \\
\textsuperscript{198.} As several commentators point out, many tribes’ water rights would be defeated if economic practicability required them to presently have the financial resources to build the water projects they propose in PIA litigation. See \textit{supra} notes 137–38 and accompanying text. \\
\textsuperscript{199.} See \textit{supra} note 57 and accompanying text. \\
\textsuperscript{200.} The draft dissent was written in response to Justice O’Connor’s draft opinion prior to her recusal in \textit{Wyoming v. United States}. See \textit{supra} note 78. \\
\textsuperscript{201.} See Mergen & Liu, \textit{supra} note 44, at 709. \\
\textsuperscript{202.} See \textit{supra} note 57.
A tribe might also agree to forgo lobbying the government to build a project in exchange for some nominal consideration. Even marginal water claims could provide some income for tribes. The vast scope of their potential rights gives tribes value and leverage. However, while this leverage may enable tribes to extract some value from current users, it will usually not prevent current users from continued use of the resource or cause large quantities of water to be removed from production.

On the other hand, with Congressional approval, tribes could act as water brokers. By transferring water interests to high bidders, tribal marketing could be a mechanism for overcoming some of the inherent inefficiencies of the prior appropriations doctrine. Indian tribes could be the instruments through which western water markets are created. Thus, while the Arizona Supreme Court criticized the PIA standard for impeding the ability of tribes to modernize and tying them to antiquated uses of water, quite the opposite may be true. Proper interpretation of the PIA standard could allow Congress to enable Indians to transfer their substantial water rights and empower Indians to revolutionize western water allocation. This could ultimately result in a more efficient use of water in the western United States, substantially increasing the net benefit to society.

CONCLUSION

Tribes were robbed of most of their land long ago. Now, the Arizona Supreme Court reasons that they should also lose the right to the water necessary to reap the full benefit from what little land they have left. The Arizona Supreme Court abandoned the standard for quantifying Indian water rights specifically designed by the U.S. Supreme Court to guarantee Indians sufficient water to meet their future needs. The Arizona court substituted a standard that in effect limits tribes to water they have utilized in the past, or will be able to use in the immediately foreseeable future. It is unfair that tribes should lose their water rights because the government failed to quantify or develop their claims, and because Indians lacked the financial resources to utilize their water before it was usurped by others. The Arizona Supreme Court purported to reject the PIA standard because it is unfair to Indians, but in its place it offered a standard that gives tribes a shadow of what they had before. In the fight for western water, the tribes of Gila V are the losers.

203. See Marketing of Indian Water, supra note 4, at 546.
204. See supra note 79 and accompanying text.
206. See supra note 26–27 and accompanying text.
207. See supra note 133 and accompanying text.
Abandoning the PIA Standard

This is not the result the U.S. Supreme Court intended when it recognized Winters rights, or when it adopted the PIA standard. By abandoning the practicably irrigable acreage method of quantifying Indian reserved water rights, the Arizona Supreme Court violated U.S. Supreme Court precedent. The court's rationales for its deviation do not justify its position. The PIA standard does not deal inequitably with tribes. The Arizona court's assertions—that the PIA standard forces tribes to live an anachronistic, agrarian existence, and that it is impossible for tribes to demonstrate the economic feasibility of irrigation projects—are both based on misapprehensions of the PIA standard and are contradicted by the reports of the Special Masters in Arizona I and Arizona II respectively.

The Arizona Supreme Court hinted at an alternate justification for abandoning the PIA standard—that PIA gives Indians too much water and is inconsistent with minimalist principles recently expressed by the U.S. Supreme Court in Cappaert and New Mexico. This conclusion is also invalid. Cappaert and New Mexico adjudicate reservations of non-Indian water, and are distinguished from Indian reserved water cases establishing the PIA standard in three ways. First, canons of construction require that original documents be construed in favor of Indians, rather than in favor of state and private interests.

Second, while in Cappaert and New Mexico water was intentionally reserved by the federal government for a specific purpose, the notion that Congress intentionally reserved water for Indians is a fiction. The "original intent" underlying the creation of Indian reservations was largely to get Indians out of the way of White settlers, with little concern for the welfare of Indian peoples. Indian Winters rights were created by judges to promote equity and justice by protecting Indian interests. Consequently, an analysis of the original legislative or executive purpose in creating these reservations, as required by Cappaert and New Mexico, is nonsensical.

Finally, while the reservations in Cappaert and New Mexico were arguably economically inefficient because they resulted in water being removed from economically productive use, upholding tribal claims will not have this effect. Instead, it will place control over the resource in the hands of Indians instead of non-Indians. Since tribes generally lack the financial resources to develop their water claims, it will often be in the best interest of tribes to market their water. With the cooperation of the federal government, Indians could be the instruments through which inefficiencies in the prior appropriations system are overcome and water allocation in the western United States is modernized. Absent such cooperation, tribes could negotiate settlements, agreeing to leave water in the hands of current users in exchange for some nominal consideration. In this way tribes could protect their future water rights and extract modest value from their resource, while leaving present non-Indian uses largely intact. In any event, water usage after the adjudication of tribal claims is
likely to be at least as economically efficient as it was before their claims were upheld, and has the potential to be much more efficient.

In sum, neither the holdings nor the logic of *Cappaert, New Mexico*, nor any other case, justify the abandonment of the PIA standard. While it is true that several current Justices of the Supreme Court have expressed dissatisfaction with the PIA standard, and there is evidence that they might be sympathetic to some of the reasoning of *Gila V*, these opinions do not have the effect of law. Therefore, *Gila V* must be rejected as a derogation of U.S. Supreme Court precedent, the supreme law of the land.