THE ADJUDICATION THAT ATE ARIZONA WATER LAW

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[O]ne does not "get out" of the Gila adjudication. It is a sort of judicial black hole into which light, sound, lawyers, water—even Judge Goodfarb—indeed, whole forests of paper, will disappear. The only way out is out the other end.[1]

INTRODUCTION

On April 26, 2004, the thirtieth anniversary of the initiation of the Gila River water adjudication ("the Adjudication"),[2] the Salt River Project ("SRP") filed five motions with the clerk of the Maricopa County Superior Court. Each styled "APPLICATION FOR ORDER TO SHOW CAUSE AND REQUEST FOR INJUNCTION," the motions requested that the court order five different respondents to cease and desist from water uses that were allegedly depleting water flows in Arizona's Verde River.[3] According to the motions and an accompanying Memorandum of Points and Authorities, these depletions of the Verde River were depriving SRP and its members of water to which they are entitled as senior appropriators on the Salt River, to which the Verde is tributary.

SRP's attempts to restrain water uses in the Verde Valley actually go back much farther than the initiation of the Adjudication in 1974. Over a century

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1. Michael J. Brophy, *The Gila Adjudication from the Perspective of Irrigation Districts*, *in* ARIZONA SECTION, AMERICAN WATER RESOURCES ASSOCIATION, PROCEEDINGS OF THE SYMPOSIUM ON ADJUDICATION OF WATER RIGHTS: GILA RIVER WATERSHED, ARIZONA 139, 144 (1988) [hereinafter 1988 SYMPOSIUM].

2. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, No. W-1, W-2, W-3, W-4 (Consolidated) (Ariz. Super. Ct. Maricopa County). For a review of the first decade of the adjudication, see Mikel L. Moore & John B. Weldon, Jr., *General Water Rights Adjudication in Arizona: Yesterday, Today, and Tomorrow*, 27 ARIZ. L. REV. 709 (1985).

3. *See infra* Part VI.

ago, in 1905, SRP and its members initiated an adjudication of water rights in the Salt River and its tributaries, including the Verde, in Arizona's Third District Territorial Court. That adjudication resulted in the 1910 "Kent Decree" determining water rights in the Salt River.[4] However, even though water users in the Verde Valley were parties to that adjudication, the territorial court declined to adjudicate Verde River water rights, finding that, at that time, water uses on the Verde River were so minor that they did not significantly affect the flow of water in the Salt. Over a half-century later, in 1966, in the face of expanding Verde Valley water uses, SRP attempted to enlarge the Kent Decree to adjudicate Verde water rights, but the federal district court (the successor to the territorial court) held that the decree could not be reopened without joining all landowners and water users in the Verde watershed.[5] SRP's next attempt was the initiation of the Gila River Adjudication in 1974.

With the filing of these motions, the Adjudication has come full circle. As a comprehensive general stream adjudication, the proceeding was intended to determine, once and for all, all claims to water rights on the Gila River and its several tributaries, thus avoiding the need for ad hoc, piecemeal litigation to settle individual disputes.[6] These motions, however, represent an implicit determination by SRP that the Adjudication will not be completed in time to address the water supply conflicts that it was supposed to resolve. Having given up hope for a timely completion of the Adjudication, SRP has resorted, within the Adjudication, to the type of piecemeal, two-party litigation that general stream adjudications are designed to avoid.

The Adjudication is the largest and longest judicial proceeding in the history of Arizona, and is among the most complex judicial proceedings in the history of the United States. The Adjudication is supposed to determine the quantities and relative priorities of all legal rights to the use of water from the Gila River and its tributaries within Arizona. The Gila and its tributaries—including the Salt, Verde, Agua Fria, Santa Cruz, and San Pedro Rivers—drain most of central and southern Arizona, including the Phoenix and Tucson metropolitan areas. The Gila watershed includes most of the state's population, agriculture, and industry,

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4. *See infra* Part II.A.

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

6. *See In re* Rights to the Use of the Gila River (*Gila River I*), 830 P.2d 442, 444 (Ariz. 1992). A similar, parallel proceeding is determining water rights in the Little Colorado River and its tributaries. *See In re* Gen. Adjudication of All Rights to Use Water in the Little Colo. River Sys. & Source, No. CV-6417 (Super. Ct. Apache County). For a comprehensive account of the history and current status of general stream adjudications across the west, see John E. Thorson et al., *Dividing Western Waters: A Century of Adjudicating Rivers and Streams*, 8 U. DENV. WATER L. REV. 355 (2005) [hereinafter Thorson et al., *Dividing Western Waters I*]; John E. Thorson et al., *Dividing Western Waters: A Century of Adjudicating Rivers and Streams, Part II*, 9 U. DENV. WATER L. REV. 299 (2006) [hereinafter Thorson et al., *Dividing Western Waters II*]. Mr. Thorson was formerly the Special Master for the Gila River and Little Colorado adjudications.

and the Gila and its tributaries provide the majority of the surface water supply for the region.[7]

The size and complexity of the Adjudication are commensurate with the area that it covers. It began in 1974,[8] and its end is nowhere in sight.[9] The money spent on the Adjudication as of the mid-1990s was estimated at one hundred million dollars;[10] the total is certainly much higher by now. At the initiation of the Adjudication, summonses were served by mail on over 849,000 recipients.[11] Approximately 24,000 of those recipients became parties to the Adjudication, eventually filing a total of over 78,000 claims.[12] The parties include the United States, the State of Arizona, Indian tribes, municipalities, public and private utilities, agricultural irrigation districts, industrial corporations, and individual farms, ranches, and other private water users. Although the Adjudication has yet to result in a final judgment, it has already spawned one extensive revision of Arizona's water code, nine decisions of the Arizona Supreme Court[13] (one of

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7. The other significant water sources for southern Arizona are pumped groundwater and Colorado River water imported through the Central Arizona Project canal. For an overview of Arizona's water supply, see ARIZ. DEP'T OF WATER RES., SECURING ARIZONA'S WATER FUTURE, *available at* http://www.azwater.gov/dwr/Content/Publications/files/supplydemand.pdf (last visited Apr. 2, 2007).

8. The case was initially filed before the Arizona State Land Department, in accordance with statutory procedures then in effect. It was transferred to the Maricopa County Superior Court in 1979 when the applicable statutes were amended to require that stream adjudications be brought in the Superior Courts. *See* United States v. Superior Court, 697 P.2d 658, 663–64 (Ariz. 1985).

9. In 1985, the Arizona Supreme Court observed, "The case has been pending more than ten years and may well take another twenty for decision." *Id.* at 662. It is now evident that the court severely underestimated the time that the case would require. The court's was not the only such overly optimistic prediction. In 1988, a spokesman for the Arizona Department of Water Resources predicted that the statutorily required Comprehensive Report on the Adjudication would be completed in 1996 or 1997. *See* Donald J. Gross, *Status Report: General Adjudication of the Gila River System and Source*, *in* 1988 SYMPOSIUM, *supra* note 1, at 63, 70. As of 2006, completion of the Comprehensive Report is nowhere in sight.

10. *See* Thorson et al., *Dividing Western Waters II*, *supra* note 6, at 432.

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

12. Arizona Supreme Court, Overview of Arizona's General Stream Adjudications (2001), http://www.supreme.state.az.us/wm/bulletin/Overview.htm#2. This website is an excellent source of information about many aspects of the Adjudication.

13. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, 127 P.3d 882 (Ariz. 2006); *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River V*), 35 P.3d 68 (Ariz. 2001); *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River IV*), 9 P.3d 1069 (Ariz. 2000); *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River III*), 989 P.2d 739 (Ariz. 1999); San Carlos Apache Tribe v. Bolton, 977 P.2d 790 (Ariz. 1999); San Carlos Apache Tribe v. Superior Court, 972 P.2d 179 (Ariz. 1999); *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River II*), 857 P.2d 1236 (Ariz. 1993); *In re* Rights to the Use of the Gila River (*Gila River I*), 830 P.2d 442 (Ariz. 1992); United States v. Superior Court, 697 P.2d 658 (Ariz. 1985).

which overturned much of the code revision[14]), and one decision of the United States Supreme Court.[15] One additional issue arising from the Adjudication has been accepted for review by the Arizona Supreme Court but has not yet been decided.[16]

Given the enormous resources that have been invested in the Adjudication, and given the Adjudication's apparent failure to achieve its objectives in a timely manner, it seems appropriate at this time to assess where the Adjudication has been and where it is going. Part I of this Article introduces the Gila River and its tributaries and their role in Arizona's water supply. Part II summarizes key developments in Arizona water law that set the stage for the Gila River Adjudication. Part III reviews the history of the Adjudication and the related litigation and legislation that it has spawned. Part IV assesses the prospects for completion of the Adjudication in the foreseeable future. Part V discusses the negative effect the Adjudication has had, and is having, on enforcement of water rights in Arizona. Part VI discusses the motions for interim relief filed by SRP in 2004. Part VII questions whether comprehensive general stream adjudications such as the Gila River Adjudication are really an efficient means of determining water rights, and Part VIII suggests an alternative mechanism, based on Colorado's system of "rolling" water adjudications, for determining and enforcing water rights in Arizona. Finally, Part IX discusses the relationship between the proposed alternative mechanism and the adjudication and settlement of Indian reserved water rights claims.

I. THE GILA RIVER SYSTEM AND ITS ROLE IN ARIZONA'S WATER SUPPLY

Except for the Colorado River, the Gila is by far the largest river in Arizona, as measured both by its length and the volume of water that it carries. The Gila originates in the mountains of southwestern New Mexico and enters Arizona at its eastern border, approximately one hundred miles north of Mexico and three hundred miles south of the Four Corners where Arizona, New Mexico, Colorado, and Utah meet. It flows generally westward for over 300 miles across southern Arizona, passing about 50 miles north of Tucson and skirting the southern fringe of the Phoenix metropolitan area, to where it joins the Colorado River where the latter forms the Arizona–California border at Yuma, in the southwestern corner of the state.

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14. *See* San Carlos Apache Tribe v. Superior Court, 972 P.2d 179.

15. Arizona v. San Carlos Apache Tribe of Arizona, 463 U.S. 545 (1983).

16. In December 1990, the Arizona Supreme Court granted petitions for interlocutory review of six issues that had been decided by the Superior Court in the adjudication. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, No. WC-90-0001-IR (Ariz. Dec. 11, 1990) (orders concerning petitions for interlocutory review), *available at* http://www.supreme.state.az.us/wm/bulletin/pdfs7-01/order121190.pdf; *Gila River III*, 989 P.2d at 742 & n.2. Five of those issues were decided in *Gila River I* through *Gila River V*. *See supra* note 13. The sixth issue—whether claims of conflicting water use or interference with water rights should be resolved as part of the adjudication—has yet to be decided by the court.

The largest tributaries of the Gila are the Salt River and its tributary, the Verde River. The Salt River drains much of mountainous eastern Arizona, flows west through the Phoenix metropolitan area, and enters the Gila from the northeast just west of Phoenix. The Verde River drains the mountains of central Arizona and flows south into the Salt just east of Phoenix, about thirty miles upstream of the Salt–Gila confluence.

Other significant tributaries are the San Pedro, which starts in Mexico and flows north to enter the Gila about 50 miles east of Phoenix, the Santa Cruz, which originates near Nogales on the Arizona–Mexico border and flows north through Tucson to enter the Gila near Phoenix, and the Agua Fria, which enters the Gila from the north just downstream of the Salt–Gila confluence.

The Gila River and its tributaries provide about twenty percent of the water used in Arizona.[17] The other eighty percent comes mainly from the Colorado River[18] and from pumped groundwater,[19] in approximately equal amounts. In the Phoenix metropolitan area, however, the importance of one Gila tributary, the Salt, is much greater than these statewide figures suggest. The Salt River and its tributary the Verde River, through SRP, provide about forty percent of the water used in the Phoenix area.[20]

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17. ARIZ. DEP'T OF WATER RES., *supra* note 7.

18. Arizona is entitled to 2.8 million acre-feet of Colorado River water annually. Arizona v. California, 373 U.S. 546, 575–79 (1963). This entitlement is equal to about forty percent of the state's annual water use. Before the 1980s, Arizona made use of only about half this amount, principally for irrigation of agricultural lands near the river. *See, e.g.*, ARIZONA DEP'T OF WATER RES., 1 ARIZONA WATER RESOURCES ASSESSMENT 6 (1994) (showing average surface water diversion of 1,296,000 acre-feet of water from the Lower Colorado River from 1971 to 1990). The construction of the Central Arizona Project in the 1980s and 1990s, however, allowed importation of water from the Colorado River to the Phoenix and Tucson areas. Arizona now makes full use of its entitlement of Colorado River water. *See, e.g.*, Colorado River Water Users Association: Arizona State Profile, http://www.crwua.org/az/crwua_az.htm (last visited Apr. 2, 2007); DALE PONTIUS, COLORADO RIVER BASIN STUDY: FINAL REPORT 28 (1997) (report to the Western Water Policy Review Advisory Commission).

19. Groundwater use in Arizona averaged over 4 million acre-feet between 1971 and 1990, ARIZONA DEP'T OF WATER RES., *supra* note 18, at 6, but declined following the construction of the Central Arizona Project. Groundwater use in Arizona in 2006 was 2.9 million acre-feet. ARIZ. DEP'T OF WATER RES., *supra* note 7, at 2.

20. *See* ARIZ. DEP'T OF WATER RES., THIRD MANAGEMENT PLAN FOR PHOENIX ACTIVE MANAGEMENT AREA 2000–2010, at 3-3 tbl.3-2, 11-10 tbl.11-6 (1999), *available at* http://www.azwater.gov/dwr/Content/Publications/files/ThirdMgmtPlan/tmp_final/ (follow "Phoenix AMA" hyperlink; then follow "Water Use Characteristics" hyperlink to Chapter 3 and "Water Budgets and Projections" hyperlink to Chapter 11) (showing that, out of approximately 2.3 million acre-feet of water used annually in the Phoenix area, 0.9 million acre-feet are from the Salt and Verde rivers).

II. BEFORE THE FLOOD: KEY DEVELOPMENTS IN ARIZONA WATER LAW PRIOR TO THE GILA RIVER ADJUDICATION

A. The First Adjudication: The Kent Decree

In 1905, one P.T. Hurley, a farmer in the Salt River Valley, filed a suit to quiet title to water rights for irrigation of his farm. At this time, the United States was also interested in the determination of water rights on the Salt River for two reasons. First, such a determination would be necessary to guide the Bureau of Reclamation in the distribution of stored water from the Salt River Project, which was then under construction. Second, the United States, as trustee for Indian tribes with reservations in the valley, was interested in a determination of the water rights of those tribes.

The United States intervened in Hurley's suit and filed a cross complaint, naming as defendants all land owners in the area of the valley served by numerous canals. These actions of the United States expanded Hurley's quiet title suit to a broad adjudication of water rights in much, but not all, of the Salt–Verde river system. The suit culminated in 1910 in the "Kent Decree,"[21] named after the territorial judge who rendered it. The decree determined priority dates from 1869 through 1909 for a total of approximately 151,000 acres of irrigated non-Indian farmland[22] and allocated water for 2,500 acres of farmland on the Salt River Indian Reservation, with a priority superior to that of all non-Indian farmers.[23]

The decree established a duty of water of 0.3 miners' inches, or 0.0075 cubic feet per second, continuous flow, for each irrigated acre,[24] plus extra allowances for seepage and evaporation from canals.[25] Over the course of a year, use of water at this rate would result in a total use of approximately 5.4 acre-feet of water for each acre of farmland,[26] or over 800,000 acre-feet for the 153,500 acres, exclusive of seepage and evaporation. When the allowances for seepage and evaporation are added, the water allocated by the decree comes close to, or exceeds, the million acre-foot median annual flow of the Salt and Verde Rivers.[27]

The completion of the Salt River Project's storage dams on the Salt and Verde Rivers, beginning with Roosevelt Dam (the largest) in 1911, made

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21. Hurley v. Abbott (*Kent Decree*), Arizona Territorial Court, No. 4564 (Mar. 1, 1910) (slip opinion reprinted and published by the Salt River Valley Water Users Association). The Kent Decree is discussed in *Grey v. United States*, 21 Cl. Ct. 285 (1990), *aff'd*, 935 F.2d 281 (Fed. Cir. 1991), *cert. denied*, 502 U.S. 1057 (1992), and in *Taylor v. Tempe Irrigating Canal Co.*, 193 P. 12 (Ariz. 1920).

22. *Kent Decree*, Arizona Territorial Court, No. 4564, at 78.

23. *Id.* at 19.

24. *Id.* at 11. The decree expresses the duty of water as 48 miners' inches for each quarter-section of land. Since one quarter-section is 160 acres, this is equal to 0.3 miners' inches per acre. One miners' inch is defined in the decree to be one fortieth (0.025) of one cubic foot per second, *id.* at 21, so 0.3 miners' inches equals 0.0075 cubic feet per second.

25. *Id.* at 11–13. The allowances for seepage and evaporation vary from 6 percent to 36 percent, depending on the lengths of canals.

26. One cubic foot per second equals 724 acre-feet per year.

27. *See supra* note 20.

additional irrigation water available in the Salt River Valley by allowing the storage of flood waters in years of heavy precipitation. The Kent Decree summarized the terms of an agreement between the United States and the Salt River Valley Water Users Association regarding use of these stored waters,[28] but it did not adjudicate rights to them. Between the issuance of the decree in 1910 and the enactment of the state water code in 1919,[29] an additional 87,000 acres were brought into cultivation.[30]

The decree also appointed a Water Commissioner to "execute and carry out" the provisions of the decree.[31] The Commissioner was authorized to enter canals, dams, reservoirs, and other water facilities "whenever necessary to ascertain existing conditions, or to control, supervise, or regulate the proper delivery, carriage, or distribution of the water" and "to make such rules and regulations as may be expedient and proper to ensure the delivery, carriage, and distribution of the water" in accordance with the decree.[32] Actions of the Commissioner were subject to review by the court on application of a party.[33]

B. The 1919 Water Code

In 1912, Arizona became a state. Seven years later, in 1919, the Arizona legislature enacted a water code,[34] which, in much-amended form, remains in effect today.[35]

The 1919 code established the office of the state Water Commissioner and invested the Commissioner with "general control and supervision of the waters of the State of Arizona and of the appropriation and of the distribution thereof," with the important exception of water distribution functions reserved to court-appointed commissioners under existing decrees,[36] such as the Kent Decree. The powers of the Water Commissioner were transferred in 1943 to the state Land Commissioner,[37] in 1950 to the state Land Department,[38] and, finally, in 1980, to the Department of Water Resources,[39] where they currently reside.[40]

The code requires "any person . . . intending to acquire the right to the beneficial use of any waters" to apply for a permit from the Department of Water Resources.[41] The application may be denied if the proposed water use "conflicts

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28. *Kent Decree*, Arizona Territorial Court, No. 4564, at 15.
29. *See infra* note 34 and accompanying text.
30. *See* Salt River Valley Water Users' Ass'n v. Norviel, 241 P. 503, 504 (Ariz. 1925).
31. *Kent Decree*, Arizona Territorial Court, No. 4564, at 17.
32. *Id.*
33. *Id.* at 17–18.
34. 1919 Ariz. Sess. Laws, ch. 164.
35. *See* ARIZ. REV. STAT. ANN. §§ 45-151 to -175, 45-251 to -260 (2006).
36. 1919 Ariz. Sess. Laws, ch. 164, § 2.
37. 1943 Ariz. Sess. Laws, ch. 28, § 5.
38. 1950 Ariz. Laws 1st Spec. Sess., ch. 30, § 1.
39. 1980 Ariz. Laws 4th Spec. Sess., ch. 1, § 35.
40. *See* ARIZ. REV. STAT. ANN. § 45-103(B) (2006).
41. *See* 1919 Ariz. Sess. Laws, ch. 164, §§ 5–6 (codified as amended at ARIZ. REV. STAT. ANN. § 45-152 (2006)).

with vested rights, is a menace to public safety, or is against the interests and welfare of the public."[42] If the application is denied, "the applicant shall take no steps toward construction of the proposed work or diversion of the water."[43]

In order to perfect a water right, the permittee must begin construction of the facilities necessary to put the water to use within two years of the granting of the permit, and construction must be completed within a time specified in the permit, but not to exceed five years.[44] The Department may extend the time beyond five years "if the magnitude, physical difficulties, and cost of the work justify extension."[45] Upon putting water to beneficial use, a permittee may apply to the Department for a certificate of water right, which must be issued "[w]hen it appears to the satisfaction of the director [of the Department] that an appropriation has been perfected and a beneficial use completed."[46]

Certificates issued pursuant to the 1919 code did not represent judicial determinations of water rights, or even the results of contested administrative proceedings.[47] The code, however, also established a procedure for resolution of conflicting water rights claims. In its amended form, before its repeal and replacement in 1979 by the current provisions for general stream adjudications,[48] the code provided as follows:

> The [state land] department may, and upon a petition signed by one or more water users upon a stream or water supply requesting the determination of the relative rights of the various claimants to the waters of that stream or supply shall, if the facts and conditions justify, determine the rights of the various claimants.[49]

Where the department initiated a proceeding for such a determination on a stream already covered by an existing court decree, the code required the department to accept the rights and priority dates determined in that decree, and

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42. ARIZ. REV. STAT. ANN. § 45-153.

43. *Id.* § 45-158.

44. ARIZ. REV. STAT. ANN. § 45-160. Cities and towns appropriating water for municipal use are exempt from these time limits. *Id.*

45. *Id.*

46. ARIZ. REV. STAT. ANN. § 45-162(A).

47. *See* Beach v. Superior Court of Apache County, 173 P.2d 79, 82–83 (Ariz. 1946) (noting that in granting or denying an application for a permit, the Water Commissioner [now the Department of Water Resources] does not determine the relative rights of the permittee and other appropriators; other appropriators have no right of appeal from the granting of a permit); Salt River Valley Water Users' Ass'n v. Norviel, 242 P. 1013, 1014 (Ariz. 1926) (noting that the Water Commissioner, in granting or denying an application for a permit, has "no jurisdiction to settle and determine the relative rights" of competing water users); *cf.* Rettkowski v. Dep't of Ecology, 858 P.2d 232, 236–39 (Wash. 1993) (distinguishing the "tentative determinations" made in permit issuance from the final determinations made in an adjudication of water rights).

48. *See* 1979 Ariz. Sess. Laws, ch. 139, § 39 (codified as amended at ARIZ. REV. STAT. ANN. §§ 45-251 to -259 (2006)); *see infra* Part III.B.

49. ARIZ. REV. STAT. ANN. § 45-231(A) (1956) (codifying 1919 Ariz. Sess. Laws, ch. 164, § 16, as amended).

specifically provided that the holders of such rights need not appear in the proceeding except to disprove abandonment "or other loss" of their rights.[50]

When such a proceeding was initiated, the code required hydrological and water use investigations by the department,[51] notice by mail of the proceeding to all claimants "so far as the claimants can reasonably be ascertained" as well as published notice in newspapers of general circulation,[52] a statement of claim to be filed by each claimant on a prescribed form,[53] opportunity for each claimant to contest the claims of others,[54] and hearings on the contests.[55] After the completion of hearings, the department was to prepare findings of fact and an order "determining and establishing the several rights of the claimants to the waters of the stream or supply."[56] The code then provided for the filing of the department's order with the superior court of the appropriate county, opportunity for the filing of exceptions, hearings on the exceptions, and a final judgment of the court, affirming, modifying, or remanding the department's order.[57]

The code provided that the "[t]he determination of the department as confirmed or modified by the judgment of the court shall be conclusive as to all prior rights and the rights of all existing claimants upon the stream or body of water embraced in the determination."[58] Except for claimants exempted from participation by virtue of prior decrees and claimants without prior actual notice who intervened during a one-year grace period after the filing of the department's order, a claimant who failed to appear in the proceeding "shall be barred and estopped from subsequently asserting any right theretofore acquired upon the stream or other body of water embraced in the proceedings, and shall forfeit all rights to the use of water theretofore claimed by him."[59]

The hybrid administrative–judicial procedure for adjudicating water rights set out in the 1919 code was not exclusive. The drafters apparently contemplated that actions for the determination of water rights might also be brought directly to the courts: Under the code, a court hearing such an action "may" transfer the action to the Land Department.[60]

As it turned out, parties to water rights disputes generally ignored the code's lengthy procedure. The only water rights adjudication completed pursuant to the procedure was on a small stream in Cochise County in the far southeastern corner of the state.[61] Most water rights disputes were taken directly to the state's

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50. *Id.* § 45-231(B).
51. *Id.* § 45-233.
52. *Id.* § 45-234.
53. *Id.* § 45-235.
54. *Id.* § 45-237(A).
55. *Id.* § 45-237(B)–(D).
56. *Id.* § 45-238(A).
57. *Id.* §§ 45-238(B), 45-239.
58. *Id.* § 45-240(B).
59. *Id.* § 45-243.
60. *Id.* § 45-231(A).
61. *See* Stuart v. Norviel, 226 P. 908 (Ariz. 1924).

courts in the form of actions to quiet title to water rights,[62] to enjoin water uses that allegedly infringed on existing rights, to cancel appropriation permits that allegedly conflicted with existing rights,[63] or to enjoin the future issuance of such permits.[64] The courts did not hesitate to make such determinations of water rights as necessary to resolve the particular disputes before them.[65]

C. The Globe Equity Decree

Arizona's most significant water rights adjudication completed since statehood was not in state court but in federal court. The so-called "Globe Equity Decree" of 1935[66] determined water rights on the Gila River above its confluence with the Salt River.

Like the Kent Decree on the Salt River, the Globe Equity Decree arose from litigation brought by the United States to determine Indian and non-Indian water rights in anticipation of the completion of a federal water storage project, this time Coolidge Dam, and San Carlos Reservoir behind it, on the Gila. By the 1920s, irrigators in the upper valley of the Gila River had depleted the flow of the river to the point that insufficient water was left downstream for irrigation on the San Carlos Apache and Gila River [Pima and Maricopa] Indian Reservations and for senior irrigators in both the Florence–Casa Grande Irrigation Project ("FCIP") and the San Carlos Irrigation Project ("SCIP").

Coolidge Dam on the San Carlos Apache Indian Reservation, completed in 1928, was designed to store floodwaters that could subsequently be released to satisfy Indian and senior non-Indian rights downstream, while reducing the necessity for restricting non-Indian irrigation upstream. Before completion of the dam, the United States in 1925 brought suit on behalf of the tribes and of irrigators in FCIP and SCIP against the upstream irrigators to adjudicate the competing Indian and non-Indian rights so that, when the dam was completed, it could be operated in accordance with those rights. The suit was brought in the Globe division of the U.S. District Court for the District of Arizona and the case was denominated "Globe Equity No. 59." The parties reached a settlement and the stipulated decree was issued in 1935. The decree incorporated a duty of water of six acre-feet per acre of irrigated land and, based on that duty, awarded 210,000 acre-feet annually to the Gila River Reservation with an "immemorial" priority date,[67] 6,000 acre-feet to the San Carlos Apache Reservation with a priority date of

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62. *See, e.g.*, Salt River Valley Water Users' Ass'n v. Norviel, 241 P. 503 (Ariz. 1925).

63. *See, e.g.*, *id.*

64. *See* St. Johns Irrigation & Ditch Co. v. Ariz. Water Comm'n, 621 P.2d 37 (Ariz. 1980).

65. *See, e.g.*, *Salt River Valley*, 241 P. 503, 507 (Ariz. 1925) (holding that complaint requesting cancellation of defendants' appropriation permit "is sufficient in our judgment upon which to base an adjudication of the rights of appropriators in and to the waters of the Verde River as between [the plaintiff and the defendant]").

66. United States v. Gila Valley Irrigation Dist., Globe Equity No. 59 (D. Ariz. June 29, 1935).

67. *Id.* at 86.

1846,[68] 162,000 acre-feet to private lands in FCIP and SCIP with a priority date of 1916,[69] and an additional 231,276 acre-feet to FCIP and SCIP lands with a priority date of 1924.[70] Upper valley irrigators in Arizona were awarded a total of approximately 225,000 acre-feet of water annually with priority dates ranging from 1872 to 1920[71] and irrigators farther upstream in New Mexico were awarded rights totaling approximately 16,000 acre-feet with priorities ranging from 1874 to 1929.[72]

Because all rights in the upper valley were junior to the "immemorial" right of the Gila River Reservation to 210,000 acre-feet, and many of them were also junior to the 1916 rights of non-Indian FCIP and SCIP lands, enforcement of the decree without construction of Coolidge Dam would have shut down much of the upper valley irrigation in dry years. However, the dam was completed in 1928, and the decree authorized the United States, under a 1924 priority date, to store excess water in wet times behind the dam, up to the 1,285,000 acre-foot capacity of the reservoir.[73] Because the upper valley irrigators are upstream of the reservoir, water stored there could be of no direct use to them. But the stipulated terms of the decree effectively transferred much of the benefit of the reservoir to the upper valley by providing that, when water was stored in the reservoir, an equivalent amount of water could be diverted from the river by upper valley diverters despite the senior rights below the reservoir.[74] In effect, the decree substituted stored water from the reservoir for the natural flow to which the downstream rightholders were otherwise entitled, allowing upper valley irrigators to divert water to which they otherwise would not have been entitled. In consideration for this benefit, the decree limited the upper valley irrigators' consumptive water use to a total of 120,000 acre-feet in any given year.[75]

Despite the construction of Coolidge Dam and the attempt to use the storage capability of San Carlos Reservoir to satisfy all parties, the flow of the Gila River is nowhere near sufficient to fulfill all the rights adjudicated in the Globe Equity Decree. The average annual diversion for the Gila River Reservation, FCIP, and SCIP at the Ashurst-Hayden Diversion Dam is 230,000 acre-feet, or around one third of the total of 672,000 acre-feet that the decree awarded to these lower valley users by the decree. San Carlos Reservoir is rarely full, usually less than half-full, and sometimes completely empty.

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68. *Id.*

69. *See id.* The figure of 162,000 acre-feet is derived by subtracting the 210,000 acre-feet awarded to the Gila River Indian Reservation from 372,000 acre-feet authorized to be diverted at the Ashurst-Hayden and Sacaton diversion dams. The subtraction must be performed because the diversion rights listed in the decree for the Ashurst-Hayden and Sacaton dams are cumulative. *See id.* at 105.

70. *See id.* at 98. The figure is derived by subtracting the 372,000 acre-feet with earlier priority dates from the total of 603,276 acre-feet.

71. *See id.* at 14–72. This figure is the total of all decreed diversions in Graham and Greenlee counties, which are in the upper valley, above San Carlos Reservoir.

72. *See id.* This figure is the total of all decreed diversions in Hidalgo County, which is in New Mexico.

73. *Id.* at 105.

74. *Id.* at 106.

75. *Id.* at 107.

D. The Water Rights Registration Act

The permit/certificate system established by the 1919 water code provides records of water rights established subsequent to its enactment. Until the 1970s, there was no comparable set of records for pre-1919 water rights. In 1974, the legislature passed the Water Rights Registration Act.[76] That Act required any claimant of a right to use surface water to file a statement of claim unless the claim was already recorded in the form of a permit or certificate, a court decree, or a contract with the United States.[77] Under the original form of the statute, failure to file the required statement of claim by June 30, 1979,[78] would have resulted in loss of the claimed water right.[79] However, the statute was amended in 1995 to replace the single, statewide deadline with watershed-specific deadlines tied to the sequence of proceedings in general stream adjudications.[80]

E. The Jumble of Arizona Water Rights

As a result of this history, surface water rights in Arizona vary in the way they are recorded and whether they have administrative or judicial imprimatur, or both, or neither. In general, pre-1919 rights outside the scope of the Kent, Globe Equity, and other decrees have never been subject to administrative or judicial scrutiny. They should have been registered by 1979 pursuant to the 1974 Water Rights Registration Act, but the legislature's decision to replace the 1979 deadline with watershed-specific deadlines dependent on the procedures in general stream adjudications means that, in most of the state, as of this writing, it is still not too late to file claims of pre-1919 rights.

Water rights established by post-1919 appropriations should be documented by permits and certificates issued by the Arizona Department of Water Resources or by its predecessor, the Arizona Water Commission. However, because application for a certificate of water right is not mandatory, some of these appropriations may be completed but not certificated. Where there is a permit but no certificate, there is no way to determine from the Department's records whether the appropriation was ever completed. Moreover, although the water code has, since 1919, forbidden appropriation of water without a permit,[81] there is some indication of legislative intent to allow subsequent recognition of permitless appropriations, even though undertaken in violation of the code, as valid water rights.[82] Further, even certificated water rights may be challenged in subsequent

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76. 1974 Ariz. Sess. Laws, ch. 122 (codified as amended at ARIZ. REV. STAT. ANN. §§ 45-181 to 45-190 (2006)).

77. 1974 Ariz. Sess. Laws, ch. 122, § 2 (codified as amended at ARIZ. REV. STAT. ANN. § 45-182). Water rights on the mainstem of the Colorado River are exempted from the filing requirement. ARIZ. REV. STAT. ANN. § 45-182(B)(3).

78. *See* 1974 Ariz. Sess. Laws, ch. 122, § 2.

79. ARIZ. REV. STAT. ANN. § 45-184.

80. *See id.* § 45-182(A). For a discussion of general stream adjudications under current Arizona law, see *infra* Part III.B.

81. *See* ARIZ. REV. STAT. ANN. § 45-158.

82. *See, e.g.*, ARIZ. REV. STAT. ANN. § 45-188 (referring to water rights established by post-1919 appropriations and evidenced by certificates, decrees, "or previous possession or continued beneficial use"). *But see* Tattersfield v. Putnam, 41 P.2d 228, 235–

judicial proceedings to adjudicate water rights,[83] and are also subject to forfeiture and abandonment. Finally, water rights adjudicated in decrees such as the Kent and Globe Equity decrees would appear to be the most secure, but even those decrees are not binding on persons who were not parties to the cases that generated them.[84]

III. THE GILA RIVER ADJUDICATION

A. Initiation of the Adjudication

The proceeding now known as the Gila River Adjudication was initiated in 1974 by the Salt River Valley Water Users Association ("SRVWUA"), the private association of the users of water from the Salt River Project. Seeking to protect its water supply from potential encroachment by growing communities higher in the watershed, SRVWUA filed a petition with the State Land Department for adjudication of water rights in the Salt River above Granite Reef Dam, which is the point where SRP diverts water for municipal, industrial, and agricultural use in the Phoenix metropolitan area.[85] In 1976, SRVWUA filed a similar petition requesting an adjudication for the Verde River, the largest tributary of the Salt, which enters the Salt just above Granite Reef.[86] In 1978, Phelps Dodge Corporation filed petitions for adjudications of water rights in portions of the mainstem of the Gila River and ASARCO Corporation petitioned for adjudication of water rights in another Gila tributary, the San Pedro.[87]

B. The 1979 Code Revisions

In 1979, the Arizona legislature repealed the statutory provisions for adjudication of water rights by the State Land Department and replaced them with provisions for general stream adjudications in the state trial courts.[88] Under the new provisions:

> One or more water users upon a river system and source, the water rights of which have not been previously adjudicated under this article and administered by the director of water resources, or the state of Arizona upon the request of any state agency other than the department of water resources may file a petition to have determined in a general adjudication the nature, extent and relative priority of the water rights of all persons in the river system and source.[89]

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36 (Ariz. 1935) (explaining that no water right can be acquired without compliance with the code).

83. *See, e.g.*, Salt River Valley Water Users' Ass'n v. Norviel, 241 P. 503 (Ariz. 1925).

84. *See, e.g.*, California v. United States, 235 F.2d 647, 663 (9th Cir. 1956).

85. *See* United States v. Superior Court, 697 P.2d 658, 663–64 (Ariz. 1985).

86. *See* Arizona Supreme Court, *supra* note 12.

87. *Id.*

88. *See* 1979 Ariz. Sess. Laws, ch. 139, § 39 (codified as amended at ARIZ. REV. STAT. ANN. §§ 45-251 to 45-259 (2006)).

89. ARIZ. REV. STAT. ANN. § 45-251.

The petition must be filed "in the superior court in the county in which the largest number of potential claimants resides."[90] Once a general adjudication is initiated, the code assigns to the Director of the Department of Water Resources ("ADWR") the responsibility to effect service "on all known potential claimants,"[91] including, "as far as reasonably possible the current record owners of all real property within the geographical scope of the adjudication."[92] Service on "all unknown potential claimants" is effected by repeated publication in newspapers "in each of the counties within which interests in and to the use of water may be affected by the general adjudication,"[93] and the ADWR is also required to "publicize the general adjudication through the electronic media and in general circulation newspapers."[94]

Each claimant of a water right in the river system under adjudication must file a "statement of claimant" on a prescribed form[95] that includes, among other things, the quantity of water claimed, the purpose of the claimed use, the point of diversion, the place of use, and the date of initiation of the right.[96] ADWR is directed to investigate each claim asserted[97] and to prepare a report, known as a hydrographic survey report ("HSR"), containing ADWR's proposed findings regarding the validity and attributes of all claimed water rights in the river system.[98] Claimants are then given an opportunity to file objections to the HSR.[99] A court-appointed master[100] then holds hearings on the objections and prepares a report for the court with recommended decisions.[101] Claimants may then file objections to the master's report with the court, and the court then makes final determinations of water rights.[102]

Pursuant to these new provisions, the petitions pending before the State Land Department for adjudications of the Salt, Verde, and Gila Rivers were transferred to the Maricopa County Superior Court and the San Pedro petition was transferred to the Cochise County Superior Court.[103] In November 1981, the Arizona Supreme Court consolidated the various petitions into a single case in the Maricopa County Superior Court and assigned the case to Judge Stanley Goodfarb.[104] Motions granted before and after the consolidation expanded the case

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90. *Id.* § 45-252.
91. *Id.* § 454-253(A)(2).
92. *Id.* § 45-256(A)(1).
93. *Id.* § 45-253(B).
94. *Id.* § 45-253(C).
95. *Id.* § 45-253(A)(2), 45-254(A).
96. *Id.* § 45-254(C).
97. *Id.* § 45-256(A).
98. *Id.* § 45-256(B).
99. *Id.*
100. *See id.* § 45-255.
101. *Id.* § 45-257(A); *see also* ARIZ. R. CIV. P. 53 (relating to masters).
102. ARIZ. REV. STAT. ANN. § 45-257(A), (B).
103. *See* Arizona Supreme Court, *supra* note 12.
104. *See id.*; United States v. Superior Court, 697 P.2d 658, 664 (Ariz. 1985).

to encompass all the watershed of the Gila River except for the small portion in New Mexico.[105]

C. Jurisdictional Challenges

The next four years of the Adjudication were occupied with challenges, both external and internal, to the court's jurisdiction to resolve Indian tribes' reserved water rights claims. Externally, some Arizona Indian tribes filed actions in federal court seeking removal of the Adjudication to federal court, an injunction against adjudication of Indian water claims by the state court, and adjudication of the Indian claims in the federal court. These actions resulted in a 1983 decision by the United States Supreme Court that the federal and state courts each had jurisdiction to adjudicate the Indian claims, but that the federal actions should be stayed or dismissed in deference to the ongoing general adjudication in the state court.[106] Internally, the United States and the San Carlos and Tonto Apache Tribes moved to dismiss the Adjudication on the grounds that a provision of the Arizona Constitution had the effect of disclaiming state court jurisdiction over Indian water rights. In 1985, the Arizona Supreme Court, in a special action for interlocutory review, rejected this jurisdictional challenge and thus cleared the way for the Adjudication to proceed.[107]

D. Interlocutory Appeals

The next major step in the Adjudication was a lengthy pre-trial order issued by Judge Goodfarb in 1986.[108] This order, among other things, established procedures for filing and service of pleadings and identified a series of preliminary issues that needed to be resolved before the court could proceed to adjudicate individual claims.

In 1988, Judge Goodfarb issued a series of orders addressing some of those issues. In an order issued in September of 1988, Judge Goodfarb established a test (the "50%/90 day" test) to determine which groundwater wells are sufficiently close to streams that they should be deemed to be pumping appropriable surface water and therefore included in the Adjudication.[109] Other orders issued by Judge Goodfarb in 1988 concluded that federal and Indian

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105. *See In re* Rights to the Use of the Gila River, 830 P.2d 442, 445 & n.1 (Ariz. 1992); Arizona Supreme Court, *supra* note 12.

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

107. *Superior Court*, 697 P.2d 658.

108. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, Nos. W-1, W-2, W-3, W-4 (Consolidated) (Ariz. Super. Ct. Maricopa County May 30, 1986) (Pre-Trial Order No. 1).

109. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River II*), 857 P.2d 1236 (Ariz. 1993) (setting aside the "50%/90 day" test). Under the 50%/90 day test, a well would be deemed to be pumping appropriable surface water (in the form of "subflow") if, during a 90-day period of well operation, the flow of a surface stream is depleted by more than 50% of the volume of water pumped. *See id.* at 1239.

reserved water rights may extend to groundwater as well as surface water;[110] that the federal government and Indian tribes should be protected against impairment of their reserved rights by groundwater pumping even where appropriators under state law would not be similarly protected;[111] and that the Indian reserved water rights on all Arizona Indian reservations should be quantified through the "practicably irrigable acreage" ("PIA") standard.[112]

In December 1990, the Arizona Supreme Court granted interlocutory review of six issues generated by Judge Goodfarb's orders.[113] In March 1992, the court issued its first decision on those issues, affirming that Judge Goodfarb's procedures for filing and service of pleadings comported with the due process clauses of the Arizona and federal constitutions.[114] In July 1993, the court decided the second issue by rejecting Judge Goodfarb's "50%/90 day" test for distinguishing appropriable surface water from non-appropriable groundwater and ordered Judge Goodfarb to develop a new test more consistent with historic Arizona water law.[115] In 1999, the court affirmed Judge Goodfarb's decisions recognizing potential Indian reserved rights to groundwater and providing reserved rights with greater protection against infringement by groundwater pumpers than that provided by state law.[116] In 2000, the court affirmed Judge Goodfarb's new test for the surface water/groundwater distinction, developed on remand from the court's 1993 decision.[117] Finally, in 2001, the court rejected the PIA standard for quantification of Indian reserved water rights[118] and created its own multi-factor standard, a "fact-intensive inquiry"[119] that takes into account a tribe's land use plans, history, culture, economic base, past water use, present and projected future population, and its reservation's geography, topography, natural resources, and groundwater availability.[120]

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110. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River System and Source (*Gila River III*), 989 P.2d 739, 745–49 (Ariz. 1999).

111. *See id.* at 749–50.

112. *See In* re Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source *(Gila River V*), 35 P.3d 68, 71 (Ariz. 2001).

113. *See supra* note 16.

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

115. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River II*), 857 P.2d 1236 (Ariz. 1993). For further discussion of the surface water/groundwater distinction, *see infra* Part IV.A.

116. *Gila River III*, 989 P.2d 739.

117. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River IV*), 9 P.3d 1069 (Ariz. 2000).

118. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River V*), 35 P.3d 68, 77–79 (Ariz. 2001).

119. *Id.* at 79.

120. *Id.* at 79–81. The court's decision is arguably inconsistent with the U.S. Supreme Court's decision in *Arizona v. California*, 373 U.S. 546, 600–01 (1963), which eschewed any attempt to determine the "reasonably foreseeable needs" of Indian reservations along the lower Colorado River and concluded that "the only feasible and fair way by which reserved water for the reservations can be measured is irrigable acreage."

E. Up Silver Creek Without a Paddle

While the Gila River Adjudication was stalled pending the Arizona Supreme Court's resolution of interlocutory issues, a parallel adjudication of the Little Colorado River in Apache County Superior Court[121] was moving forward. The first sub-watershed to be addressed by the Little Colorado adjudication was that of Silver Creek, a tributary that arises along the Mogollon Rim near Show Low, Arizona and flows north to join the Little Colorado near Holbrook, Arizona. The attempt to adjudicate water rights in the Silver Creek drainage would demonstrate the formidable nature of the task facing both the Gila and the Little Colorado adjudications and would lead to a major revision of the state's water code and a critical decision of the Arizona Supreme Court.

The HSR for the Silver Creek watershed, the first such report to be prepared in either adjudication, was filed with the Apache County court on November 29, 1990.[122] In the ensuing 180-day objection period, 3,456 objections to the report were filed.[123] The objections raised virtually every imaginable question about the scope, nature, methodology, and quality of ADWR's work in preparing the HSR and about the validity, water sources, priority dates, points of diversion, places of use, and quantities of water associated with the water rights found in the HSR.[124]

The objections to the Silver Creek HSR created a panic among farmers and ranchers whose water rights were at stake and who faced the daunting prospect of defending those rights against the thousands of objections that had been filed.[125] They sought, and obtained, relief from the legislature in the form of a rewriting of much of the surface water code.[126] The amendments to the water code were ostensibly designed to speed and simplify the Gila and Little Colorado adjudications, but they generally did so by favoring claimants of appropriative water rights over those who would challenge their claims. The amendments to the code included the following:

• exemption of pre-1919 water rights from forfeiture for non-use;[127]

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121. *See supra* note 6.

122. *See* Comprehensive Case Management Order No. 1 Regarding Objections Filed to the Silver Creek Hydrographic Survey Report at 3, *In re* Gen. Adjudication of All Rights to Use Water in the Little Colo. River Sys. & Source, No. CV-6417 (Super. Ct. Apache County Dec. 2, 1991).

123. *Id.*

124. *See id.* at 4–9; Notice of Revised Statement of Issues for Special Consolidated Cases at 4–11, Nos. 6417-033-9001 to -9006, *In re* Gen. Adjudication of All Rights to Use Water in the Little Colo. River Sys. & Source, No. CV-6417 (Super. Ct. Apache County Feb. 6, 1992).

125. For an interesting discussion of the Silver Creek experience, see Opening Brief of Salt River Project and City of Tempe at 6–15, San Carlos Apache Tribe v. Superior Court, 972 P.2d 179 (Ariz. 1999) (No. CV-95-0161-SA).

126. *See* 1995 Ariz. Sess. Laws, ch. 9. Many of the provisions of the 1995 code amendments were struck down by the Arizona Supreme Court in 1999, *San Carlos Apache Tribe*, 972 P.2d 179, but, as of this writing, they remain on the books.

127. ARIZ. REV. STAT. ANN. § 45-141(C) (2006).

• a stipulation that failure to obtain approval for a change in use does not result in forfeiture, abandonment, or loss of priority of a water right;[128]

• recognition of water rights established by adverse possession between 1919 and 1974;[129]

• exemption of water rights within irrigation districts from forfeiture and abandonment;[130]

• a "de minimis" provision for summary adjudication of stockponds smaller than fifteen acre-feet and domestic and small business uses of less than three acre-feet;[131]

• a provision that appropriative rights would be measured by the capacity of water diversion facilities rather than by the quantity of water actually diverted and used;[132]

• a requirement that adjudication courts accept, without reviewing, settlement agreements made by claimants;[133]

• a requirement that adjudication courts accept information in prior filings as true unless found by ADWR to be "clearly erroneous";[134]

• a prohibition on the consideration of the public trust doctrine by adjudication courts.[135]

These and other provisions of the amended code reduced the opportunities to challenge appropriative claims and thus placed claimants of reserved rights—Indian tribes and the United States—at a relative disadvantage. In a special action, the United States and several tribes challenged numerous provisions of the amendments on the grounds that they violated the due process clause or the separation of powers clause of the Arizona Constitution. The Arizona Supreme Court struck down many of the amendments—including all of those listed above—while upholding others.[136] With the legislature's rewriting of the water code largely overturned, the problem revealed by the Silver Creek

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128. *Id.* § 45-156(E).

129. *Id.* § 45-187. The applicability of adverse possession principles to water rights during this period had previously been in doubt. *See San Carlos Apache Tribe*, 972 P.2d at 190–91.

130. ARIZ. REV. STAT. ANN. § 45-188(C).

131. *Id.* § 45-258.

132. *Id.* § 45-256(A)(7). As a trial judge and the Arizona Supreme Court noted, this provision would have created water rights far in excess of actual beneficial use. *See San Carlos Apache Tribe*, 972 P.2d at 197.

133. ARIZ. REV. STAT. ANN. § 45-257(C).

134. *Id.* § 45-261(A)(2).

135. *Id.* § 45-263(B). In other states, particularly California, the public trust doctrine has been held to be a limitation on private water diversions that deplete navigable waterways. *See* Nat'l Audubon Soc'y v. Superior Court (*Mono Lake Case*), 658 P.2d 709 (Cal. 1983); Michael C. Blumm & Thea Schwartz, *Mono Lake and the Evolving Public Trust in Western Water*, 37 ARIZ. L. REV. 701 (1995).

136. *San Carlos Apache Tribe*, 972 P.2d 179.

experience, namely, the unmanageable nature of an adjudicatory process with so many potential objectors and objections, remains unsolved.

IV. THE DIM PROSPECT FOR COMPLETION OF THE ADJUDICATIONS IN THE FORESEEABLE FUTURE

It is unlikely that either the Gila River Adjudication or the Little Colorado Adjudication will be completed in the foreseeable future. The reasons for this dim prospect are twofold: First, the adjudications are currently mired in two threshold issues that will take many years to resolve. Second, even (if and) when these threshold issues are finally resolved, the adjudications will simply be back in the position they were in during the early 1990s, when the Silver Creek fiasco demonstrated the difficulty and complexity of the adjudications' basic task of determining individual appropriative water rights in the face of thousands of potential objectors to each right. Because the legislature's attempt to circumvent such complexity and difficulty through the enactment of statutory presumptions and exemptions was largely overturned by the courts, there is no reason to assume that a resumed effort to adjudicate rights will go any more smoothly in the future than it did a decade and a half ago.

A. The "Subflow" Conundrum

The first unresolved threshold issue in the two adjudications is the fundamental question of which water users are included in the adjudications and which are not. Under the water code, an adjudication shall determine water rights in a "river system and source,"[137] which is defined to mean "all water appropriable under § 45-141" as well as "all water subject to claims based upon federal law."[138] Under section 45-141 of the Arizona Revised Statutes, water "flowing in streams, canyons, ravines or other natural channels, or in definite underground channels" is appropriable. Thus, the rights of a person pumping groundwater are to be determined in an adjudication if, and only if, she is pumping from a "definite underground channel." Water flowing in a "definite underground channel" is also known as "subflow,"[139] a term introduced into Arizona law in the 1931 case of *Maricopa County Municipal Water Conservation District Number 1 v. Southwest Cotton Co.*[140] The court in *Southwest Cotton* defined subflow as "those waters which slowly find their way through the sand and gravel constituting the bed of the stream, or the lands under or immediately adjacent to the stream, and are themselves a part of the surface stream."[141]

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137. ARIZ. REV. STAT. ANN. § 45-252.

138. *Id.* § 45-251(7).

139. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River II*), 857 P.2d 1236 (Ariz. 1993).

140. 4 P.2d 369 (Ariz. 1931).

141. *Id.* at 380. For discussions of the subflow concept, and its lack of connection to hydrogeologic reality, see Robert Jerome Glennon & Thomas Maddock, III, *In Search of Subflow: Arizona's Futile Effort to Separate Groundwater from Surface Water*, 36 ARIZ. L. REV. 567 (1994); John D. Leshy & James Belanger, *Arizona Law Where Ground and Surface Water Meet*, 20 ARIZ. ST. L.J. 657 (1988).

The Gila River adjudication court, the Arizona Supreme Court, and the Arizona Department of Water Resources ("ADWR") have spent nearly twenty years attempting to resolve exactly whose pumps are drawing from "definite underground channels" and whose are not, and they are not nearly done. The adjudication court initiated the quest in 1987 with five days of hearings on the relationship between surface water and groundwater, followed by a round of briefing and argument and an order issued in 1988. The 1988 order defined subflow by a functional test, the "50%/90 day rule," which depended on the degree of surface stream depletion induced by a hypothetical 90-day operation of a groundwater pump.[142] In 1993, this rule was overturned on interlocutory appeal by the Arizona Supreme Court, which found it to be at odds with *Southwest Cotton* because it did not limit subflow to water "within or immediately adjacent to the stream bed."[143]

On remand, the adjudication court came up with a new test, under which underground water is considered subflow if it is found within the "saturated floodplain holocene alluvium," i.e., within the water-saturated sediments laid down by a stream in its floodplain within the past 10,000 years or so.[144] This test survived interlocutory review by the Arizona Supreme Court in 2000,[145] but the affirmation of the test merely set the stage for the next three tasks, namely: (1) the development of a protocol for determining whether a particular well does or does not fall within the saturated floodplain holocene alluvium; (2) the application of this protocol to Arizona's thousands of groundwater wells to determine which need to be included in the Adjudication; and (3) the incorporation of the included wells into the Adjudication. Six years after the affirmation of the test, the first task is not complete, the second task has not yet begun, and the third task has barely been imagined.

After the Arizona Supreme Court affirmed the "saturated floodplain holocene alluvium" definition of subflow, the Gila River adjudication court, in January 2002, ordered ADWR to prepare a report "specifically identifying and describing the procedures and processes it proposes to use to establish the limits of the subflow zone . . . ."[146] After the filing of the report and more than three years of comments, objections, discovery, briefings, and hearings, the court approved ADWR's report, with modifications, in September 2005.[147] The court's decision has been appealed to the Arizona Supreme Court; it is unknown whether the court will accept the interlocutory appeal, and, if it does, how long it will take to brief, argue, and decide the appeal.

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142. *See Gila River II*, 857 P.2d at 1239.

143. *Id.* at 1245.

144. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River IV*), 9 P.3d 1069, 1073 (Ariz. 2000).

145. *Id.*

146. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, No. W-1, W-2, W-3, W-4 (Consolidated), Contested Case No. W1-103 (Ariz. Super. Ct. Maricopa County filed Jan. 22, 2002) (minute entry).

147. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, No. W-1, W-2, W-3, W-4 (Consolidated), Contested Case No. W1-103 (Ariz. Super. Ct. Maricopa County Sept. 28, 2005) (order approving report of the Special Master).

If and when the Arizona Supreme Court either decides not to hear the appeal or to affirm the adjudication court's decision, the actual process of determining which wells are pumping subflow, and therefore should be included in the Adjudication, may begin. This process will involve: (a) examination and interpretation of geologic maps, which ADWR estimates will take four to six months for each of seven sub-watersheds within the Gila watershed, or two to four years altogether;[148] (b) computer modeling to determine the cones of depression of wells that lie outside, but near, the saturated floodplain holocene alluvium, which ADWR estimates could take "several years;"[149] and (c) determination, through remote sensing, existing records, and field investigations, of which wells may be excluded from the Adjudication because their effect on streamflow is *de minimis*, which will take another three to five years.[150] In other words, the process of determining who the parties to the Adjudication are, which may fairly be characterized as preliminary to the merits of the Adjudication, is likely a decade or more from completion.

Once this "preliminary" task is completed, the claims of those well owners whose wells are determined to be pumping non–*de minimis* subflow will need to be brought into the Adjudication. No one knows exactly how this will happen. Even though subflow has been classified as appropriable water since *Southwest Cotton* in 1931, both the government and most well owners have always acted as if their wells were outside the appropriation system. Thousands of wells have been drilled and operated without appropriation permits or certificates of water rights. Most well owners have not filed statements of their claims in the Adjudication, the hydrographic survey reports prepared by ADWR so far have not included groundwater wells, and well owners have never been assigned priority dates or had their rights quantified. The Author will not venture to guess how long it will take to bring these claimants into the Adjudication, but it won't be quick and it won't be easy.

B. The Binding Effect of Prior Decrees

A second "preliminary" issue that has only partly been resolved is whether, and to what extent, prior decrees of water rights within the Gila watershed are binding upon the parties to the current adjudication. Such decrees include the Kent Decree on the Salt River[151] and the Globe Equity Decree on the Gila River.[152]

It took the courts five years to determine the binding effect of the Globe Equity decree. Motions for summary judgment on this issue were filed in 2001.[153] In 2002, the adjudication court held that Globe Equity Decree precludes any party

148. ARIZ. DEP'T OF WATER RES., SUBFLOW TECHNICAL REPORT, SAN PEDRO WATERSHED 42 (2002), *available at* http://www.azwater.gov/dwr/Content/Publications/files/subflow_technical_report_San_pedro_watershed_A_032902.pdf.

149. *Id.* at 43.

150. *Id.* at 44–45.

151. *See supra* notes 21–23 and accompanying text.

152. *See supra* notes 66–72 and accompanying text.

153. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, 127 P.3d 882, 886 (Ariz. 2006).

to that decree, including Indian tribes who were represented by the United States as trustee, from claiming any more water from the mainstem of the Gila River than was awarded by that decree.[154] Such parties, however, are not precluded from claiming additional water from tributaries to the Gila. Four years later, in 2006, the Arizona Supreme Court affirmed.[155]

Although this issue is now resolved with respect to the Globe Equity Decree, significant questions remain with respect to other decrees, particularly the Kent Decree. While the Salt River Project relies on the Kent Decree to establish the rights of its members to hundreds of thousands of acre-feet of Salt and Verde River water, many parties to the current adjudication, including many Verde Valley water users, were not parties to the Kent Decree. Under the rules of res judicata, such non-parties to the Kent Decree cannot be bound by it. Therefore, although SRP members are likely precluded from claiming *more* water than they were awarded by the Kent Decree, other parties should be free to argue that the SRP members are entitled to *less* water than specified in the Kent Decree. Thus, thousands of claims may have to be relitigated, and are potentially subject to the same plethora of objections that sent farmers and ranchers in the Silver Creek proceeding running to the legislature for relief.

V. THE EFFECT OF THE ADJUDICATION ON ENFORCEMENT OF WATER RIGHTS IN ARIZONA

Ironically, while a primary motivation behind the initiation of the Gila River Adjudication was to facilitate enforcement of water rights, the effect of the Adjudication has been to stifle enforcement of water rights during the thirty-some year pendency of the litigation.

Under Arizona's water code, it is a misdemeanor to use water to which another is entitled, to divert water from a stream "[w]ithout authority," or to use, store, or divert water without the required appropriation permit.[156] Since 1980, the code has provided for the administration of water rights by the director of the ADWR. Among other powers and duties of the director, the code specifies that "[t]he director shall . . . [i]nvestigate and take appropriate action upon any complaints alleging withdrawals, diversions, impoundments or uses of surface water or groundwater that may violate this title or the rules adopted pursuant to this title."[157] The code also invests the director with rulemaking authority,[158] and authorizes the director to divide the state into water districts and to appoint a superintendent for each district,[159] with the authority to close diversion head gates "to prevent the waste of water or its use in excess of the volume to which the

154. *Id.*
155. *Id.* at 903.
156. ARIZ. REV. STAT. ANN. § 45-112(A)(3), (4), (7) (2006).
157. ARIZ. REV. STAT. ANN. § 45-105(B)(8).
158. *Id.* § 45-105(B)(1).
159. *Id.* § 45-109. The provisions regarding water superintendents predate the creation of ADWR in 1980. The 1980 code amendments assigned to ADWR the authority to appoint the superintendents.

owner of the right is lawfully entitled."[160] A water superintendent may also arrest any violator, deliver him or her to the county sheriff or police, and make a complaint before a justice of the peace.[161] In an area where no water superintendent has been appointed, "any affected person" may "make a complaint to the sheriff or other police officer" against an alleged unlawful water user.[162]

To date, no water superintendents have been appointed in Arizona, and ADWR has established no administrative process for exercising its more general authority to "take appropriate action" on a complaint of unlawful water use. In other words, there is currently no administrative process for enforcement of water rights in Arizona.

The lack of an administrative process for enforcement of water rights was acutely demonstrated in a recent water use dispute between the United States Forest Service and a private landowner. The Forest Service holds certificated water rights for instream flows in Cave Creek and its tributary, Seven Springs Wash, on the Tonto National Forest in the hills north of Phoenix. In 2004 and 2005, the Forest Service complained to the Department of Water Resources that an upstream landowner on Seven Springs Wash was diverting water from the springs that feed the wash in a quantity, and for a use, that was not within the landowner's water right.[163] The Forest Service alleged that the unlawful diversion was depleting the instream flows to which the Forest Service was entitled in Seven Springs Wash and in Cave Creek.

In response to the Forest Service's complaint, the director of ADWR sent a letter disclaiming any authority to act:

> Currently, the Maricopa County Superior Court is adjudicating water rights in the Gila River Watershed to determine their nature, extent, and relative priority. Until the water rights involving Seven Springs are adjudicated and a water rights decree is entered, state law does not authorize the Department to take enforcement action regarding water uses at Seven Springs. However under A.R.S. § 45-112, certain violations of surface water law may be brought to the attention of the sheriff or other police officers within the county. In addition, persons affected by the violations may bring a private cause of action.[164]

As the letter states, in the absence of an administrative enforcement mechanism, the only options available to an aggrieved appropriator are to call the sheriff or police or to file a private lawsuit. Neither option may be viable. With regard to the first option, nothing in the statute requires a sheriff or police officer to act on a complaint, and it seems unlikely that, given the choice, a sheriff or

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160. *Id.* § 45-110(A)(4).

161. *Id.* § 45-112(C).

162. *Id.*

163. *See* Letter from Herbert R. Guenther, Dir., Ariz. Dep't of Water Res., to Gene Blankenbaker, Supervisor, Tonto National Forest, at 1 (Sept. 13, 2005) (referring to Forest Service letter of July 11, 2005, and to contacts in 2004).

164. *Id.* at 2.

police officer who otherwise has no responsibility with respect to water rights would want to get involved in a water rights dispute. Moreover, even if the sheriff or police officer wanted to be helpful, the statute confers no civil enforcement authority on either. Apparently, the only action either could take, other than informal persuasion, would be to make an arrest and initiate a criminal prosecution, an unlikely and unattractive prospect.

With regard to the second option, not only would a private lawsuit entail substantial expense and delay, but it is unclear whether any such lawsuit could proceed. The Arizona Court of Appeals has held that, while an adjudication is ongoing, no court other than the adjudication court has jurisdiction to determine water rights within the watershed covered by the Adjudication.[165] Since a private lawsuit to enjoin allegedly unlawful water use would likely require determination of the water rights of both the plaintiff and the defendant, under this holding no such suit may be heard anywhere in the Gila or Little Colorado watershed while these two adjudications are underway. The Gila and Little Colorado watersheds collectively comprise most of the land area of the state. They also contain the vast majority of the state's population and, except for the Colorado River, most of its surface water. Therefore, the result of the abstention of the Department and the courts from water rights enforcement is that, unless and until these adjudications are completed, there simply is no enforcement of water rights in most of Arizona.

The lack of current enforcement of water rights cannot be entirely attributed to the two ongoing adjudications. The statutory authority for administrative enforcement of water rights is general and vague, and the resources available to ADWR for enforcement are extremely limited. It is therefore possible that, even if the adjudications were not pending, there would still not be effective administrative enforcement. But the possibility that any enforcement action might lead to a jurisdictional conflict with an adjudication court has been a major factor in ADWR's decision to abstain from taking such action, and the likelihood that a court would refuse to entertain a private lawsuit while the adjudications are ongoing has probably discouraged such suits.

Of course, the question of whether and how water rights would be administered and enforced were the two adjudications not pending cannot be answered definitively, because there is simply no relevant modern experience. The adjudications have been pending since 1974, which was six years *before* the statutory creation of ADWR and its administrative authority. The areas of the state that lie outside of the watersheds under adjudication are mostly remote, sparsely populated, and have little water. We therefore simply do not know how Arizona water law would work in the absence of the adjudications. ADWR's enforcement powers have not been tried or tested, no enforcement regulations have been issued, no water superintendents have been appointed, and no body of interpretive case law has developed.[166] In this sense, the adjudications have, as suggested by the title of this Article, "eaten" Arizona water law.

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165. Gabel v. Tatum, 707 P.2d 325 (Ariz. Ct. App. 1985).

166. *See, e.g.*, ARIZ. REV. STAT. ANN. §§ 45-105, 45-109, 45-110, 45-112 (2006), Notes of Decisions (listing only one case, and no cases since 1969, interpreting or applying these sections).

VI. BAILING OUT: THE MOTIONS FOR ORDERS TO SHOW CAUSE

On April 26, 2004, SRP, which had initiated the Gila River Adjudication exactly thirty years earlier, filed in the Gila River adjudication court five motions requesting preliminary injunctions against five groups of water users in the Verde Valley. According to SRP, these water users' diversions and groundwater pumps were depleting flows in the Verde River, which is tributary to the Salt, and were thereby depriving SRP's members and customers of Salt River water to which they were entitled by virtue of their senior water rights.[167] In other words, SRP was seeking interim relief to address the very problem that had prompted it to initiate the Adjudication thirty years earlier. In a memorandum supporting the motions, SRP's attorneys colorfully expressed their frustration both at the failure of the Adjudication to come to fruition in a timely manner and at the lack of any effective alternative administrative or judicial mechanism, outside the Adjudication, to enforce its water rights:

> On the spring afternoon of April 26, 1974, the undersigned attorney, on behalf of SRVWUA [(Salt River Valley Water Users Association, the private association of users of water from the Salt River Project)], delivered to the Arizona State Land Department a petition to determine the water rights in the Salt River above Granite Reef Dam. At that time, the nation was in the midst of the Watergate scandal, and Richard Nixon was still President (until August). The top album of the year was the soundtrack from "American Graffiti," and the most popular movie was "The Towering Inferno." Hank Aaron hit his 715th homerun that summer, and the Boston Celtics beat Kareem Abdul-Jabbar and the Milwaukee Bucks in the NBA championship. The population of Phoenix was around 600,000. SRP was concerned that upstream junior water users were taking water (through surface diversions and pumps) in derogation of the senior vested rights of SRP and the SRVWUA shareholders.
>
> Many things have changed in thirty years, but some things have, unfortunately, stayed almost exactly the same. This Adjudication has now lived through seven U.S. Presidents. During this time, the population of Phoenix has increased several-fold, Kareem has long since left Milwaukee, and the Bucks have not seen the NBA championship in decades. The upstream water diversions by junior users in derogation of the senior vested rights of SRP and the SRVWUA shareholders, however, still continue unabated and, if anything, have increased. In this Adjudication, time has virtually stood still.
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> On this, the thirtieth anniversary of the filing of its original adjudication petition, SRP has filed with the Court five OSC [(Order to Show Cause)] applications and requests for injunctions against

167. *See* Salt River Project's Consolidated Memorandum Re Applications for Orders to Show Cause and Requests for Injunctions at 4–5, *In re* Gen. Adjudication of All Rights to Use Water in The Gila River Sys. & Source, Nos. W-1, W-2, W-3, W-4 (Consolidated) (Ariz. Super. Ct. Maricopa County Apr. 26, 2004).

> water users in the Verde Valley. The water users named in these applications are perhaps among the most egregious, but certainly not the only, upstream water users who continue to engage in illegal and unauthorized diversions (on the surface or by pumps) that adversely affect the ability of SRP and the SRVWUA shareholders to exercise their vested senior rights. SRP has notified these individuals in writing of their transgressions, but they have refused to stop. The Arizona Department of Water Resources ("ADWR") has, on at least one occasion, notified one of these water users that it needed to file an Application to Appropriate or stop using water, and that water user simply refused to do so. In that same instance, SRP requested permission to intervene in other superior court proceedings to, among other things, enforce the senior rights of SRP and the SRVWUA shareholders against these junior users. The superior court rejected SRP's request to intervene, stating that the proper forum in which to address these issues was this Adjudication Court.
>
> SRP recognizes that this is a massive case, that the Court has numerous other matters that require its attention, and that ADWR has limited funding. Faced with these difficulties, all parties must concede that this Adjudication likely will take many more years, and perhaps decades, to complete. SRP has been a consistent proponent of completing this Adjudication in a timely and efficient manner, but it recognizes the inherent delays associated with the nature of this proceeding.
>
> The long-enduring nature of this proceeding should not, however, require holders of senior rights to suffer at the whims of junior users for multiple decades.[168]

SRP's motions were successful. Four out of five of the motions resulted in settlements whereby the target water users obtained and transferred water rights from third parties in order to allow their (previously unlawful) water uses to continue. The water uses originally associated with the transferred water rights will be retired, thereby, at least in theory, restoring the depleted flows to the Verde River.

The fifth motion was actually litigated. After briefing by both sides, Judge Eddward Ballinger of the Maricopa County Superior Court issued an order on August 28, 2006, holding that SRP was entitled to a preliminary injunction against the Shield Ranch to restrain the ranch from irrigating 22 acres of farmland in the Verde Valley for which the ranch had "no colorable claim" of a water right.[169] Judge Ballinger's order was a significant milestone not only in the history of Arizona's general stream adjudications, but also in Arizona water law in general. It was the first time in over thirty years that a water right has actually been enforced in the state.

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168. *Id.* at 2–4.

169. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, Nos. W-1, W-2, W-3, W-4 (Consolidated) (Ariz. Super. Ct. Maricopa County Aug. 28, 2006) (minute entry showing grant of summary judgment).

But the order did not represent the success of the Gila River Adjudication. Rather, it represented the Adjudication's failure and futility. The order was not the culmination of a systematic determination of all water rights in a watershed. Instead, it grew out of a recognition that (1) such a systematic determination is not likely to occur in a reasonable timeframe, and (2) such a systematic determination is not necessary for the resolution of specific conflicts over water use. It was because of the Adjudication's failure to reach, or even promise, a timely completion that the request for the injunction was necessary. And the injunction itself demonstrated that a remedy could be provided for a specific problem *without* adjudicating all water rights in the watershed.

While SRP's motions for preliminary injunctions resulted in relief with respect to a handful of alleged unlawful water users, these motions constitute a threat to the future orderly progress of the Adjudication. If such motions become the standard mechanism for addressing claims of unlawful water use, they could greatly multiply in number and the adjudication court could become swamped with requests to provide relief in individual water disputes. The time and resources required to address such disputes would come at the expense of the court's progress, such as it is, toward the Adjudication's goal of a systematic and comprehensive adjudication of water rights.

VII. GENERAL STREAM ADJUDICATIONS: AN IDEA WHOSE TIME HAS GONE?

The enormous resources that have been invested in Arizona's general stream adjudications, their failure to reach a timely conclusion, and their negative effect on ongoing administration of water rights in the state raise the issue of whether these adjudications are really a good idea at all.[170] The theory behind such adjudications is simple: If the water supply is insufficient to satisfy all claims (which it generally is in the western United States), and if such claims are subject

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170. Such problems are not unique to Arizona. *See* Thorson et al., *Dividing Western Waters I*, *supra* note 6, at 358 ("Modern general stream adjudications, most of which have been filed since the 1970s, are characterized by their enormity and longevity. These complex lawsuits are among the largest civil proceedings ever litigated in state or federal courts."); Thorson et al., *Dividing Western Waters II*, *supra* note 6, at 303 ("These water rights adjudications in major river basins typically involve tens of thousands of parties, consume tens of millions of dollars in public and private funds, sometimes irreparably divide communities, and often offer no assurance that they will ever end.").

At an American Bar Association conference in 1997, a panel of attorneys discussed their experiences in general stream adjudications in Arizona, New Mexico, Idaho, Montana, Utah, Colorado, Oregon, and Nevada. A synopsis of the panel discussion stated,

> Each panelist expressed frustrations with laborious, lengthy, and costly western stream adjudications. Progress has been elusive in many states, and the simple goal of quantifying and prioritizing water rights has proved difficult to achieve. After twenty or more years of litigation in many western states, the panelists pointed out that few adjudications are complete.

OFFICE OF THE SPECIAL MASTER, ARIZ. SUPREME COURT, ARIZONA GENERAL STREAM ADJUDICATION BULLETIN 3–4 (1997), *available at* http://www.supreme.state.az.us/waternews/issues/mar97.htm.

to dispute (which they inevitably are), then litigation is inevitable. And if litigation is unavoidable, it is better to join all claimants in a single legal proceeding rather than for the courts to adjudicate water claims piecemeal as disputes arise. Litigation of individual water disputes, the theory goes, is inefficient because the result is binding only on the parties. Therefore, any water rights determined by a court in the course of adjudicating a specific dispute between a limited number of parties will be subject to re-litigation in subsequent suits involving different parties. Only by joining all water claimants on a stream in a single proceeding can secure water rights be established.[171]

But the convening of a massive proceeding to determine all water rights on a stream creates another type of inefficiency, namely, it forces the litigation of countless issues that, in the absence of such a proceeding, might never have arisen in the course of actual disputes.[172] For example, if a rancher claims a stockwater right on a small creek that drains into a larger creek that drains into a river, it is possible, but not likely, that the existence, priority date, or quantity of that rancher's right will be a dispositive issue in a water dispute between that rancher and a large irrigation district that relies on water diverted from the same river two hundred miles downstream. If the rancher and the irrigation district are joined, along with all other claimants, in a general stream adjudication, then the irrigation district will be forced to assert in that adjudication whatever objections it might conceivably have to the rancher's claim, on penalty of having such objections forever precluded in the unlikely, but possible, event that a dispute between the rancher and the district should arise in the future. This is exactly what happened in the Silver Creek proceeding in the Little Colorado adjudication.[173] When the court attempted to determine the water rights of farmers and ranchers along Silver Creek, numerous parties felt compelled to assert all sorts of objections to the farmers' and ranchers' claims, regardless of the likelihood that such claims, and such objections, would ever be at issue in any actual dispute. The number of objections overwhelmed both the claimants and the court. If and when the adjudication courts resume their attempts to actually determine individual water rights, as they must do if the adjudications are ever to be completed, the same scenario is likely to re-emerge, not just in the Silver Creek watershed but in every watershed in the Gila and Little Colorado drainages.

VIII. AN ALTERNATIVE MODEL

Experience to date suggests that the completion of Arizona's general stream adjudications in the foreseeable future is not likely, and Judge Ballinger's recent order in the Gila River Adjudication suggests that it is not necessary. Judge Ballinger's order demonstrates that water rights can be enforced without awaiting a determination of all water rights in a stream system. Therefore, the public interest might best be served by simply abandoning the quest for comprehensive determinations and devoting resources instead to developing an efficient

171. *See, e.g.*, Thorson et al., *Dividing Western Waters I*, *supra* note 6, at 407.

172. *Cf.* Thorson et al., *Dividing Western Waters II*, *supra* note 6, at 477 ("The myth of comprehensiveness has led some states to adjudicate some areas and some types of rights that, from a water management perspective, do not need adjudication.").

173. *See supra* Part III.E.

mechanism for enforcement of water rights, while providing a forum for adjudication of water rights where such adjudication is needed to resolve actual disputes. Specifically, I propose the following:

(1) ADWR should develop an administrative process for receiving, hearing, and acting upon complaints of unlawful or out-of-priority water uses. Such a process might be developed under the administrative authority granted ADWR under the existing water code, including the authority to appoint water superintendents. However, the development of such a process would best be facilitated by new legislation that includes more specific direction and authority as well as funding.

(2) The general stream adjudications should be reconstituted as standing tribunals to which cases can be referred when, in the course of addressing a claim of unlawful or out-of-priority water use, it becomes necessary to resolve a dispute over the existence or characteristics of a particular water right or rights. In other words, instead of systematically attempting to determine all water rights, adjudication courts would instead determine, as and when the need arises, just those rights whose existence or characteristics are dispositive of actual water disputes. A case could be referred to an adjudication court either by ADWR or by either of the parties to the dispute. Parties to a settlement desiring to have the settlement formalized as a decree could also submit the settlement to an adjudication court for approval, as they do in the current Gila River and Little Colorado adjudications.

Such a "rolling" adjudication has a successful precedent in Colorado's system of water courts. In the Colorado system, the water courts are constantly adjudicating new water rights as they are established.[174] The operation of the system has been described by Colorado Supreme Court Justice Gregory J. Hobbs, Jr.:

> Each water court publishes a monthly resume of applications received. The resume summarizes important details of an application; the water courts supply standardized forms for filing. The resume serves as notice to all interested persons for purposes of subject matter and personal jurisdiction. Persons who do not enter the noticed proceeding remain nonetheless bound by the result. The adequacy of the notice is subject to a "reasonable inquiry" standard regarding the nature, scope, and impact of the claim.
>
> In every water division, Colorado's adjudication is ongoing. Pursuant to the monthly resume notice, each application proceeds to judgment and to decree separately. If appealed, the application continues on to the Colorado Supreme Court for review and decision without the need to wait for any other case.[175]

Colorado's system is purely judicial. In Colorado, a would-be appropriator needs no permission from any administrative agency before initiating

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174. *See* COLO. REV. STAT. §§ 37-92-201 to -402 (2006).

175. Gregory J. Hobbs, Jr., *Colorado's 1969 Adjudication and Administration Act: Settling In*, 3 U. DENV. WATER L. REV. 1, 15 (1999) (footnotes omitted).

a water use. Because of this lack of administrative control over new appropriations, other states, including Arizona, have not adopted the Colorado system.[176] Moreover, because most of Arizona's surface water has already been appropriated, switching over to the Colorado system for new appropriations at this late date would largely be a moot exercise. Nonetheless, the Colorado system is useful as a procedural model for Arizona's stream adjudications because it demonstrates that water rights can be adjudicated one (or a group) at a time, instead of all in a single proceeding.

The key distinction between the Colorado system and the one I propose for Arizona is that whereas in Colorado a case is initiated by the filing of an application for a new water right, in the proposed Arizona system a case would be initiated either (1) by referral of a contested water right from the ADWR's administrative enforcement tribunal, or (2) by submission of a settlement for approval. Despite this difference, the Arizona system would share with Colorado's water courts the essential attribute of an ongoing adjudication that hears individual cases as and when they arise, and notice of whose proceedings is published and widely disseminated. As in Colorado, any interested party would be permitted to enter and participate in any case, and all interested parties would be bound by the ensuing determinations of water rights.

Of course any party whose water right is at issue in a case in this "rolling" adjudication would still face the prospect, as did the ranchers and farmers in the Silver Creek fiasco, of a large number of parties entering the proceeding to object to its claimed right. But, unlike in the current adjudications, where all such rights are at issue, in the reformed system only those claimants whose water rights are determinative of the outcome of actual disputes will face such a prospect. Moreover, any such claimant may avoid adjudication of its water rights by settling the underlying dispute out of court, leaving the final determination of its rights for another day. Out-of-court settlements would not be binding upon other parties, but could spare the court and the disputants the time and expense of a contested, binding determination of water rights. Settlers wishing to have their settlement embodied in a binding decree, however, would still have to face whatever challenges may arise in the adjudication court.

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176. Colorado's lack of a permit requirement precludes the imposition of a public interest test such as that contained in Arizona's water code, *see supra* text accompanying note 42. Most western states impose a similar test on applicants for new water appropriations. *See* A. DAN TARLOCK, JAMES N. CORBRIDGE, JR. & DAVID H. GETCHES, WATER RESOURCE MANAGEMENT 312–29 (5th ed. 2002). Colorado's choice not to impose such a test, or to require any sort of permission from an administrative agency, may reflect that state's traditional hostility to limitations on the free appropriation of water. *See* COLO. CONST. art. XVI, § 6 ("The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied."). *See also* Coffin v. Left Hand Ditch Co., 6 Colo. 443, 446 (1882) ("The right to water in this country, by priority of appropriation thereof, we think it is, and has always been, the duty of the national and state governments to protect.").

IX. APPLICATION OF THE ALTERNATIVE MODEL TO INDIAN RESERVED WATER RIGHTS

The adjudication or settlement of Indian reserved water rights claims has been a major concern of the Gila River Adjudication and has been one of the few areas in which the Adjudication has achieved substantial success. Arizona's 22 Indian reservations comprise approximately 25 million acres, or about a third of the area of the state, with a total population of about 160,000 people.[177] Under the decision of the United States Supreme Court in *Winters v. United States*,[178] each reservation has a reserved water right sufficient to fulfill its purpose. Each reservation's water right has a priority dating to the creation of the reservation.[179]

While the precise methodology for determining how much water each reservation has a right to is a matter of some uncertainty,[180] there is general agreement that many Indian reserved water rights are very large. For example, the Gila River Indian Community ("GRIC") has claimed about 1.5 million acre-feet of Gila River water, which exceeds the average annual flow of the river.[181] Although GRIC has now settled for a lesser amount of water, the settlement amount—about 650,000 acre-feet from a variety of sources[182]—is still enormous.

With their large quantities and early—usually nineteenth century—priority dates, Indian reserved water rights are clearly a key element of Arizona's water use picture. The conventional wisdom has long been that any adjudication of water rights that does not include Indian reserved rights will be ineffective in providing the certainty that water users need.[183] In order to allow state courts to adjudicate Indian and other federal reserved water rights, Congress in 1952 passed the "McCarran Amendment," which waived the sovereign immunity of the United States to be joined in suits for the adjudication and administration of water rights.[184]

The McCarran Amendment has been interpreted to permit state courts to adjudicate Indian reserved rights, which are held in the name of the United States as trustee for Indian tribes.[185] Indian reserved rights have been included in the Gila

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177. Arizona Commission of Indian Affairs, Tribal Demographics, http://www.indianaffairs.state.az.us/tribes/demo.html (last visited Apr. 12, 2007).

178. 207 U.S. 564 (1908).

179. Cappaert v. United States, 426 U.S. 128, 138 (1976).

180. *See* Arizona v. California, 373 U.S. 546, 600–01 (1963) (determining that each of five Indian reservations along the lower Colorado River is entitled to enough water to irrigate the "practicably irrigable acreage" of the reservation); *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River V*), 35 P.3d 68 (Ariz. 2001) (rejecting the "practically irrigable acreage" rule and adopting a vague, multi-factor standard).

181. S. Joshua Newcom, *Peace on the Gila? Pending Gila River Indian Community Settlement Tied to CAP Repayment*, RIVER REP. (Water Educ. Found., Sacramento, Cal.), Summer 2001.

182. *Id.*

183. *See, e.g.*, Moore & Weldon, *supra* note 2, at 722–26.

184. 43 U.S.C. § 666 (2000).

185. Colo. River Water Conservation Dist. v. United States, 424 U.S. 800 (1976).

River Adjudication,[186] and settlement of several tribes' claims, including a pending settlement of GRIC's claims,[187] has been a major accomplishment of the Adjudication.

But the United States Supreme Court has held that the United States can only be joined in a general adjudication to determine all water rights on a stream, not in private litigation over a specific water dispute.[188] There is a significant concern as to whether the "rolling" adjudication proposed herein would be sufficiently comprehensive to qualify for the McCarran Amendment's waiver of sovereign immunity. If not, then the adjudication court would not have jurisdiction to adjudicate Indian water rights unless the United States or a tribe chose to participate in the Adjudication by voluntarily submitting to the court's jurisdiction.

There are several answers to this concern. First, adoption of the proposed alternative model for the Adjudication in the future should not affect Indian water rights settlements that have already been ratified by Congress or by the current adjudication court. These include settlements of the water rights claims of the Tohono O'odham (formerly Papago) Indian Nation,[189] the Fort McDowell Indian Community,[190] the Salt River Pima-Maricopa Indian Community,[191] the Zuni Indian Tribe,[192] and, most important, GRIC,[193] whose claims are by far the largest of any Indian tribe in the Adjudication.

Second, it is possible that the proposed rolling adjudication would qualify for McCarran Amendment jurisdiction. The United States Supreme Court has held that Colorado's system of rolling adjudications does meet the requirements of the McCarran Amendment, even though, strictly speaking, the rolling adjudications do not adjudicate all water rights in a single proceeding.[194] Moreover, the Court held that the United States could be joined in a late round of an adjudication that addressed only water rights acquired since the last round, even though the United

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186. *See* United States v. Superior Court, 697 P.2d 658 (Ariz. 1985) (affirming court's jurisdiction to adjudicate Indian reserved rights in the Gila River adjudication); *see also* Arizona v. San Carlos Apache Tribe, 463 U.S. 545 (1983) (holding that federal district courts properly abstained from adjudicating Indian reserved rights in deference to ongoing Gila River and Little Colorado River adjudications).

187. *See In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source, Nos. W-1, W-2, W-3, W-4 (Consolidated), Contested Case No. W1-207, (Ariz. Super. Ct. Maricopa County May 24, 2006) (Order for Special Proceedings for Consideration of the Gila River Indian Community Water Rights Settlement); Newcom, *supra* note 181.

188. Dugan v. Rank, 372 U.S. 609, 618 (1963).

189. *See* Southern Arizona Indian Water Rights Settlement Act of 1982, Pub. L. No. 97-293, §§ 301–315.

190. *See* Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, §§ 401–413, 104 Stat. 4480–92.

191. *See* Salt River Pima-Maricopa Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549.

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

193. *See* Arizona Water Rights Settlement Act, Pub. L. No. 108-451, 118 Stat. 3478 (2004).

194. *See* United States v. Dist. Court for Eagle County, 401 U.S. 520 (1971).

States had not been a party to any of the previous rounds.[195] Thus, the Court seems willing to take a flexible, pragmatic approach to applying the McCarran Amendment.[196] This pragmatic approach, combined with the Court's recognition of an explicit congressional policy favoring the adjudication of water rights in state courts,[197] might lead the Court—or a lower court following its precedents—to conclude that the rolling adjudication system proposed herein is sufficiently "general" to fall within the McCarran Amendment's waiver of sovereign immunity.

Third, even if the proposed adjudication model does not qualify for the McCarran Amendment's waiver of sovereign immunity, Indian tribes, and the United States as their trustee, may well find it in their interest to voluntarily submit to the jurisdiction of the adjudication courts. While many tribes, and the United States, have historically resisted the jurisdiction of state courts over their water rights,[198] experience in recent decades has shown that state courts, and particularly the Arizona Supreme Court, are quite capable of rendering water rights decisions favorable to Indian interests.[199] Moreover, numerous tribes have benefited enormously from settlements of their water rights in the context of state court adjudications.[200] A prime example of a tribe benefiting from participation in a state-court adjudication comes from the Gila River Adjudication itself, where the settlement of GRIC's claims provides for that Indian community to receive hundreds of thousands of acre-feet of water from the Central Arizona Project and other sources, as well as tens of millions of dollars in federal funding to finance the infrastructure to put that water to use.[201] On the other hand, tribes whose water

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195. *Id.* at 525.

196. *See id.* at 525–26. The Court derided as "extremely technical" the argument that the McCarran Amendment did not apply because the U.S. was not a party to the earlier rounds. *Id.* at 525.

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

198. *See, e.g.*, *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys. (*Big Horn I*), 753 P.2d 76, 86–88 (Wyo. 1988); United States v. Superior Court, 697 P.2d 658 (Ariz. 1985); *Dist. Court for Eagle County*, 401 U.S. 520.

199. *See, e.g.*, *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River III*), 989 P.2d 739 (Ariz. 1999) (holding that Indian reserved water rights may include rights to groundwater, and that Indian reserved rights are protected by federal law where federal law provides greater protection than that which state law provides to non-Indian water rights); *Big Horn I*, 753 P.2d at 99–114 (affirming determination that the Wind River Indian Reservation holds reserved agricultural water rights totaling over 500,000 acre-feet per year of surface water). *But see id.* at 97–99 (rejecting claims for groundwater and for additional reserved water for non-agricultural purposes); *In re* Gen. Adjudication of All Rights to Use Water in Big Horn River Sys., 835 P.2d 273 (Wyo. 1992) (holding that tribes could not convert agricultural water rights to other purposes without regard to state law).

200. *See* Reid Peyton Chambers & John E. Echohawk, *Implementing the Winters Doctrine of Indian Reserved Water Rights: Producing Indian Water and Economic Development Without Injuring Non-Indian Water Users?*, 27 GONZ. L. REV. 447 (1992). *But see* DANIEL MCCOOL, NATIVE WATERS: CONTEMPORARY INDIAN WATER SETTLEMENTS AND THE SECOND TREATY ERA (2002) (exploring drawbacks as well as benefits of settlements).

201. *See* Newcom, *supra* note 181.

rights have remained unadjudicated have sometimes been left high and dry as non-Indian water users have made use of water that lawfully belongs to the tribes.[202]

In addition to adjudicating water rights whose determination is necessary to resolve water use conflicts, the reconstituted adjudication court proposed herein could also be authorized, like the current adjudication court, to approve settlements of Indian reserved water rights. The prospect of favorable settlements may well induce tribes whose water rights are still unsettled and unadjudicated to remain parties to the Adjudication even in the event that it is determined that the reconstituted adjudication does not qualify for jurisdiction under the McCarran Amendment.

Finally, if the reconstituted adjudication court does not qualify under the McCarran Amendment, and some tribes do not choose to submit to its jurisdiction, the court's work could still proceed in their absence. Despite the conventional wisdom that water adjudications must include reserved rights to be effective, the existence of unadjudicated reserved rights has not historically been an impediment either to non-Indian water development or to the resolution of disputes between non-Indian water users.[203] Indeed, as noted above, it is Indian tribes, rather than non-Indian water users, who have suffered when Indian reserved rights have remained unquantified.

If a reconstituted adjudication court lacks jurisdiction to adjudicate Indian or other reserved federal water rights, some tribes may seek to have their rights adjudicated in separate proceedings in the federal courts.[204] Such separate, parallel

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202. *See* Adrian N. Hansen, *The Endangered Species Act and Extinction of Indian Reserved Water Rights on the San Juan River*, 37 ARIZ. L. REV. 1305, 1316–18 (1995); Monique C. Shay, *Promises of a Viable Homeland, Reality of Selective Reclamation: A Study of the Relationship Between the Winters Doctrine and Federal Water Development in the Western United States*, 19 ECOLOGY L.Q. 547 (1992); *see also, e.g.*, William Douglas Back & Jeffery S. Taylor, *Navajo Water Rights: Pulling the Plug on the Colorado River?*, 20 NAT. RESOURCES J. 71, 74, 90 (1980) (estimating that the reserved water rights of the Navajo Nation may exceed 2 million acre-feet of water per year from the Colorado River, but noting that little water is being used on the Navajo Reservation and that Navajo water rights have been "all but ignored" in the development of the river); Hansen, *supra*, at 1320 (describing water rights settlements that have included commitments to provide water and economic development funds to tribes). *But see id.* at 1325–29 (describing how the Endangered Species Act has obstructed implementation of the settlements).

203. *See* JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 956 (4th ed. 2006) (suggesting that "the states may be better off living with the uncertainty of unquantified Indian and other federal claims, rather than making strenuous efforts to adjudicate and settle them," and asking whether states have "believed too much their own rhetoric about the 'need' to adjudicate these rights"); *see also id.* at 941 (noting that unadjudicated reserved rights have not slowed western water development).

204. *See, e.g.*, United States v. Adair, 723 F.2d 1394 (9th Cir. 1983) (affirming exercise of federal court jurisdiction to adjudicate Indian reserved water rights despite pending general adjudication in state court). *But see* Moore & Weldon, *supra* note 2, at 720–23 (arguing that *Adair* should not be applied broadly). Early in the life of the Gila River Adjudication, several Arizona Indian tribes brought an action for adjudication of their water rights in federal court, but the action was dismissed in deference to the ongoing adjudication in state court. *See* Arizona v. San Carlos Apache Tribe, 463 U.S. 545 (1983).

adjudications might be less efficient than a single proceeding in state court (though they could hardly take longer, or consume more resources, than the current Adjudication), but they are not necessarily such a bogeyman as they have sometimes been made out to be.[205]

Multiple adjudications on the same river system are not unusual. Indeed, one of the major tasks in the current Gila River Adjudication has been to determine the binding effect of decrees in prior adjudications.[206] Sorting out the mutually binding effects of multiple adjudications conducted over a span of a century has been a difficult task,[207] but the addition of a few contemporaneous decrees determining the rights of individual Indian tribes would only marginally add to the difficulty, and is hardly a reason for foregoing an otherwise attractive alternative to the current quagmire.

CONCLUSION

The Gila River Adjudication has been a noble endeavor, combining the skills, dedication, and efforts of thousands of clients, dozens of legislators, several judges, and a generation of Arizona's finest lawyers. Decisions of the United States and Arizona Supreme Courts rendered in the Adjudication have clarified important points of state and federal law, and settlements of reserved water rights claims in the Adjudication have removed clouds on the rights of appropriative water users and have provided substantial resources to long-deprived Native Americans. But after a third of a century, the basic function of the Adjudication, namely, the binding determination of the rights of tens of thousands of individuals, corporations, and governments using water from the Gila River and its tributaries, has barely begun.[208] Final resolution of "preliminary" issues, particularly the determination of which of thousands of groundwater wells are included in the Adjudication, is more than a decade away. If and when such issues are finally resolved, the adjudication of individual water rights is likely to prove unmanageable, as it did in the Silver Creek watershed in the Little Colorado Adjudication a decade and a half ago. The Salt River Project's recent successful efforts to obtain preliminary relief against allegedly unlawful water users in the Verde Valley have redirected some resources in the Adjudication toward solving the problems that prompted the filing of the Adjudication in the first place, but have also demonstrated that a comprehensive stream adjudication may not be the best means of addressing those problems.

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205. *See, e.g.*, Moore & Weldon, *supra* note 2, at 722 (describing parallel adjudications in state and federal courts as "a perilous approach" and "unworkable"); *id.* at 725 (arguing that an adjudication that does not include Indian reserved water rights is "worthless").

206. *See* ARIZ. REV. STAT. ANN. § 45-257(B)(1) (2006) (requiring adjudication court to accept determinations of water rights in prior decrees).

207. *See supra* Part IV.B.

208. The former judge of the Little Colorado adjudication stated in 1996: "Sometimes I feel like the French attempting to build the Panama Canal in the 1880s. . . . [A]fter a decade of hard work by everyone involved, I look over my shoulder and still see the Caribbean Sea." Thorson et al., *Dividing Western Waters II*, *supra* note 6, at 302–03 (quoting Judge Allen Minker).

The greatest problem in surface water rights administration in Arizona today is not the lack of certainty and finality in those rights, but rather the lack of an effective mechanism to enforce them. A comprehensive stream adjudication, which makes judicial determination of water rights a prerequisite to enforcement, does not address that problem; it aggravates it. An administrative process for water rights enforcement, backed up by a judicial process for resolving disputes about the quantity and characteristics of individual water rights if and when such disputes arise in the course of actual water use conflicts, stands a better chance of being a useful, practical tool. This Article suggests such a process, but does not even begin to work out its details. Working out those details will itself be a difficult process, and will likely take several years of negotiation, legislation, and experimentation. No one can guarantee that such a process will be successful. But the alternative—continuation of the Adjudication—will likely take several decades, and, if experience is any guide, is likely to fail.