
Article

Water Bankruptcy

Christine A. Klein[†]

Introduction	561
I. The Prior Appropriation Doctrine and Scarcity	566
A. The Doctrine	566
B. Too Many Promises, Too Little Water	569
C. Priority at the Breaking Point	572
1. Priority Celebrated	572
2. Priority Questioned	576
II. The Reallocation Continuum: Follow the Money	582
A. The Seniors Pay	583
1. Navigating the Nuances of Priority	585
2. Managing Groundwater	588
3. Requiring Actual and Beneficial Use	589
4. Protecting Public Values	591
B. The Juniors Pay	592
1. Enforcing Priority	592
2. Managing Groundwater	593
3. Paying for Water	593
C. Imagining a Middle Path	595
III. A New Tool: Water Bankruptcy	596
A. Bankruptcy: The Traditional Context	599
B. Bankruptcy: The Water Context	603

[†] Chesterfield Smith Professor of Law and Director, LL.M. Program in Environmental and Land Use Law, University of Florida, Levin College of Law. I am grateful for the many helpful comments I received when presenting this paper at the Colorado Law and Duke School of Law's Fourth Annual Summer Works-in-Progress Symposium, Boulder (Aug. 9–10, 2012); at the Association for Law, Property and Society, Third Annual Meeting, Georgetown Law Center, Washington, D.C. (Mar. 2–3, 2012); and at the University of Florida Levin College of Law's "Half-Baked Ideas" roundtable session (Feb. 6, 2012). I would like to thank my colleagues Jeffrey Davis and Lee-ford Tritt for their guidance on bankruptcy law. I would also like to thank Jeffrey Davis and Dave Owen for their meticulous and thoughtful reviews of the draft manuscript. Any errors, of course, are solely the responsibility of the author. Copyright © 2012 by Christine A. Klein.

1. The Mechanics of Water Bankruptcy	604
2. The Context of Water Bankruptcy	607
C. Case Study: A Perfect Storm in California	612
1. Water Rights in California	613
2. Stakeholder Negotiations in the California Bay-Delta	614
3. Litigation in California	617
D. The Benefits of Water Bankruptcy	618
1. Establishing Realistic Expectations	618
2. Rejecting Willful Ignorance	619
3. Accommodating Modern Values	622
Conclusion	623

Bankrupt. The state or condition of one who is unable to pay his debts as they . . . become due.¹

Over-appropriated. [A] condition of water allocation in which the quantity of surface water available during a specified period is not sufficient to meet the expected demands from all water rights [during a specified percentage of time] during that period.²

INTRODUCTION

Many western states are on the verge of bankruptcy, with debts exceeding assets. And yet, they continue to take on additional debt through contracts and other commitments.³ Remarkably, in some cases the states cannot even calculate their debts and expenditures with precision.⁴ Although this distress sounds like an outgrowth of the 2008 recession, this crisis in-

1. BLACK'S LAW DICTIONARY 134 (5th ed. 1979).

2. OR. ADMIN. R. § 690-400-0010(11)(a)(A) (2000) (based on insufficient supply at least 20% of the time). The Oregon Allocation Policy also defines "over-appropriated" with respect to groundwater as "a condition of water allocation in which . . . [t]he appropriation of groundwater resources by all water rights exceeds the average annual recharge to a groundwater source over the period of record or results in the further depletion of already over-appropriated surface waters." *Id.* § 690-400-0010(11)(a)(B); *see also id.* § 690-410-0070(1) (asserting the policy that "[t]he waters of the state shall be protected from over-appropriation by new out-of-stream uses of surface water or new uses of groundwater").

3. *See, e.g.*, NAT'L RESEARCH COUNCIL, SUSTAINABLE WATER AND ENVIRONMENTAL MANAGEMENT IN THE CALIFORNIA BAY-DELTA 33 (2012), *available at* http://www.nap.edu/openbook.php?record_id=13394.

4. *See infra* Part III.D.2; *see also* State Water Res. Control Bd., *Notice of Public Workshop: Water Diversion Measurement*, CAL. ENVTL. PROTECTION AGENCY (June 9, 2011), http://www.swrcb.ca.gov/waterrights/water_issues/programs/diversion_use/docs/workshop2011july/not_wdm070111.pdf.

volves water, not money. The states, as debtors, have overappropriated their water resources. As an official in one of the West's most water-bankrupt states, California, complains, "[w]e annually use more water than nature provides" and continue to "sign water contracts . . . that, on their face, appear to promise [that the state will guarantee to continue these deliveries]." ⁵ He describes the debate over water supply as "a mirror image of our national and state budget battles" and argues, "[i]f borrowing money ultimately has to stop, so too must the endless [state] promises to deliver water, without regard for the consequences. We are running up against the practical limitations of supply, and have little way to meet all the demands" ⁶

California is not alone in its struggle with over-promised water supplies. In fact, the challenge of water shortage extends far beyond the borders of the United States. In 2009, the World Economic Forum reported that the world is headed toward "water bankruptcy," with demand far outstripping supply. ⁷ As stated by the World Economic Forum, "[the world] simply cannot manage water in the future as we have in the past or the economic web will collapse." ⁸

In the United States, numerous water administrators in the West routinely issue what are colloquially known as "paper water rights"—permits that suggest, often unrealistically, that a certain volume of water will be available for appropriation, at least for a significant portion of the time. ⁹ The West generally

5. PHIL ISENBERG, CHAIR, DELTA STEWARDSHIP COUNCIL, ACHIEVING THE CO-EQUAL GOALS OF THE STATE OF CALIFORNIA 3, 8 (2011), *available at* <http://www.deltacouncil.ca.gov/get-document/4291.pdf>.

6. *Id.* at 3.

7. WORLD ECON. FORUM, WORLD ECONOMIC FORUM WATER INITIATIVE: MANAGING OUR FUTURE WATER NEEDS FOR AGRICULTURE, INDUSTRY, HUMAN HEALTH AND THE ENVIRONMENT 5 (Draft for Discussion at World Economic Forum Annual Meeting 2009). According to the report:

In many places around the world, we have consistently under-priced water, wasting and overusing it as a result. We have depleted stocks of groundwater at the expense of our future water needs. In effect, we have enjoyed a series of regional water "bubbles" to support economic growth over the past 50 years or so, especially in agriculture. We are now on the verge of water bankruptcy in many places with no way of paying the debt back. In fact, a number of these regional water bubbles are now bursting in parts of China, the Middle East, the southwestern U.S. and India.

Id.

8. *Id.*

9. *See* Planning & Conservation League v. Dep't of Water Res., 83 Cal.

adheres to the “prior appropriation doctrine,” and allocates water under the principle of “first in time, first in right.”¹⁰ The oldest water rights, dating back to the mid-nineteenth century in some watersheds,¹¹ lock up a significant portion of the water supply in perpetuity.¹² The supply is stretched further by drought, fluctuating precipitation patterns, and climate change.¹³ As a consequence, it can be difficult to accommodate emerging societal values—including environmental protection and recreation—unless the new users can come up with enough money to buy out their predecessors.¹⁴ In short, the rules of the game were set well over a century before we fully appreciated the importance of saving some water for the natural environment and for other nonconsumptive uses.

Overall, there is an increasing recognition that the solution lies in reallocating some of the water supply to support critical values, such as environmental preservation and the prevention of species extinction. Bedrock principles of water law—including the requirement of “beneficial use” and the public trust doctrine¹⁵—support reallocation. But any such attempt runs up against fierce resistance from those who hold the oldest water rights and who are entitled to protection under the concept of priority, a competing core principle of water law.¹⁶ In a titanic struggle for dominance between those foundational concepts, priority has been losing ground.¹⁷ But it has been doing so outside the context of traditional state water institutions. Rather, priority has been giving way as frustrated stakeholders engage in voluntary, collaborative negotiations to find a new

App. 4th 892, 913–15 (2000) (noting the “aura of unreality” surrounding paper water rights and describing their value, in some cases, as worth “little more than a wish and a prayer”); *see also infra* Part I.B.

10. *See infra* Part I.A.

11. *See* Concerning the Recognition of Acequias, and, in Connection Therewith, Authorizing Acequia Ditch Corporations, ch. 168, 2009 Colo. Sess. Laws 739 (2009) (“The oldest water right in Colorado is attributed to the San Luis People’s Ditch, with a priority date of April 10, 1852.”); *Lux v. Haggin*, 10 P. 674 (Cal. 1886), *superseded by rule as stated in* *Ivanhoe Irrigation Dist. v. All Parties & Persons*, 47 Cal. 2d 597 (1957) (recognizing appropriative rights in California); *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882) (recognizing appropriative rights in Colorado).

12. *See also infra* note 91 and accompanying text.

13. *See* 2009 Colo. Sess. Laws iii, vii.

14. *See also infra* Part I.C.1.

15. *See infra* Part I.A.

16. *See infra* Part I.C.1.

17. *See infra* Part I.C.2.

way to stretch precious water supplies.¹⁸ Bargaining in the shadow of the priority doctrine, numerous watershed groups have convened throughout the West.¹⁹ But collaborative efforts are not a panacea, and stakeholders face a new set of challenges and questions. Most importantly, if the limitations of priority have prompted some stakeholders to move beyond traditional dispute resolution mechanisms, what concepts should fill the void? With considerable effort, these groups have developed varying ad hoc processes to guide their negotiations.²⁰ They have reinvented the wheel time and again, adjusted for the unique circumstances of their watersheds.²¹ But unease remains, as collaborators struggle to harmonize their common history of priority allocation with the possibility of reallocation and shared sacrifice.²²

In short, collaborators are in desperate need of a consistent conceptual framework to guide their efforts. To accommodate both the rhetoric of priority and the reality of reallocation, this Article develops the new concept of “water bankruptcy.” In so doing, this piece draws on the mechanisms and principles of federal bankruptcy law, a regime comfortable with both priority-based claims and shared loss. Just as traditional bankruptcy law provides a time-tested, comprehensive, and well-reasoned model that gives debtors a fresh start under dire circumstances, so too might water bankruptcy assist states in restructuring debts and reallocating assets related to society’s most precious, life-sustaining, and irreplaceable resource. And just as insolvent corporations and individuals emerge financially healthier from financial bankruptcy, so also might healthier watersheds result from water bankruptcy proceedings.

18. See *World Heads for “Water Bankruptcy,” Says Davos Report*, AFP, (Jan. 30, 2009), <http://www.google.com/hostednews/afp/article/ALeqM5gw8aFWD0HjsLXr1cBCf4HII079zg> (last visited Nov. 3, 2012) (quoting Indra Nooyi, chairman and chief executive of PepsiCo, Inc., who asserted at the 2009 World Economic Forum, “[t]he only way to measurably and sustainably improve this dire situation is through broad-scale collaborative efforts between governments, industry, academic, and other stakeholders around the world”).

19. See *infra* note 223 and accompanying text.

20. See, e.g., *2011 Action Agenda Update: Strategy Development Points of Contact*, PUGET SOUND PARTNERSHIP (Aug. 22, 2011), http://www.mypugetsound.net/index.php?option=com_docman&task=doc_view&gid=175&Itemid=172.

21. See, e.g., *Watershed Issues*, CINEGA WATERSHIP PARTNERSHIP, <http://www.cienega.org/watershed-issues/#water> (last visited Nov. 3, 2012).

22. See *id.*

Part I presents an overview of the prior appropriation doctrine and argues that the concept of priority is at the breaking point, no longer able to allocate water reliably under all circumstances. Overall, the system makes too many promises, but too few actual deliveries of water, driving some water users to the bargaining table.

Part II surveys the broad range of tools that states currently employ to stretch insufficient water supplies, sometimes constituting an implicit reallocation that departs from strict priority. Adding to the existing literature, this Part attempts a comprehensive cataloguing of state techniques, and aligns them along a logical continuum that considers who bears the cost of reallocation. At one end of the sequence lay the seniors pay options—methods by which administrators cut back senior water rights to provide water for emerging societal values such as recreation and environmental protection.²³ These tools tend to emphasize the public aspect of water. They depend on enforcement of the beneficial use, reasonable use, and public trust doctrines—fundamental principles that restrict water rights to the efficient, non-wasteful, beneficial uses of a common resource. At the other end of the continuum, the juniors pay options call for new users to buy out, compensate, or otherwise yield to older water uses. These options stress the private aspect of water and its status as a property right. This Part identifies the conditions under which each set of tools work well, and the circumstances under which each falls short.

Finally, Part III introduces the new concept of “water bankruptcy.” By drawing an analogy to the well-developed principles of bankruptcy law, this Article offers a systematic, regularized way of thinking about a collection of place-specific, *sui generis* processes independently springing up across the West. Reducing the need for collaborators to invent a process and rationale anew in each case, this Article offers a common vocabulary and framework to encourage the development of an inter-state knowledge base of best practices for collaborative processes. In particular, this section looks to Chapter 9 of the Bankruptcy Code, which provides a “fresh start” for insolvent municipalities by allowing them to develop a plan for reorganization that readjusts the debts that they owe. The discussion recognizes the similarity of municipal insolvency and the states’ overallocation of water resources. Like western water

23. See *infra* Part II.A.

law, bankruptcy is grounded in principles of priority. But unlike water law, bankruptcy explicitly permits a departure from strict priority when circumstances so warrant. Bankruptcy's "reset button" recognizes that other social values—such as saving debtors from ruin and allowing them to hold back the assets necessary for their survival—can sometimes affect creditors' expectations of payment. Likewise, water bankruptcy would mediate the law's internal struggle between beneficial use and priority and allow state water managers to bring back overstressed aquatic systems from the brink of collapse.

Notably, this Article is not advocating the widespread replacement of state administration with stakeholder consensus, or the wholesale replacement of priority with shared loss. Rather, this Article draws on principles of traditional bankruptcy to provide a systematic framework for willing collaborators who have voluntarily turned to negotiation, rather than traditional judicial or administrative processes, to resolve their water conflicts.

I. THE PRIOR APPROPRIATION DOCTRINE AND SCARCITY

A. THE DOCTRINE

The law of water allocation is primarily state law. State constitutions and statutes assert broad authority over water as a public resource to be administered for the benefit of all the people.²⁴ States allocate to individuals only a "usufructuary" right—permission to use a specified quantity of water for a specific purpose.²⁵ The states retain ultimate ownership or control over the water resources within their borders.²⁶ As such, water rights are a unique type of personal property, neither purely private, nor purely public.²⁷

24. DAVID H. GETCHES, *WATER LAW IN A NUTSHELL* 74–77, 85 (3d ed. 1997) [hereinafter *GETCHES, NUTSHELL*].

25. CHRISTINE A. KLEIN, FEDERICO CHEEVER & BRET C. BIRDSOING, *NATURAL RESOURCES LAW: A PLACE-BASED BOOK OF PROBLEMS AND CASES* 843–45, 859–60 (2d ed. 2009).

26. *See id.*

27. CHARLES F. WILKINSON, *CROSSING THE NEXT MERIDIAN* 235 (1992) [hereinafter *WILKINSON, CROSSING THE NEXT MERIDIAN*] ("All [western] state constitutions or statutes declared water to be public, but nearly all water was appropriated for private gain. Even superficially public uses had heavy private overtones. The crusades of Los Angeles, Denver, Phoenix, and Albuquerque for water in fact have been mainly the crusades of forward-looking land developers who had staked out subdivisions on the plains and deserts and who needed

The prior appropriation doctrine dominates in the states bisected by, or west of, the hundredth meridian—the longitudinal line that passes through North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.²⁸ In general, water users must satisfy three requirements before they acquire vested water rights under the appropriation doctrine.²⁹ First, they must demonstrate a firm intent to appropriate the unappropriated waters of a natural source.³⁰ Ill-formed plans can be dismissed as mere speculation rather than firm intent,³¹ and overutilized watersheds may be deemed insufficient to satisfy the reasonable expectations created by the grant of a new water right.³² Next, they must physically divert water from its natural source to the place of use, which may be in a distant watershed or even across a mountain range.³³ Finally, users must put the water to beneficial use without waste.³⁴

Among the three elements, beneficial use has been recognized as the core requirement—what some states refer to as “the basis, the measure, and the limit of the right.”³⁵ Traditionally, beneficial uses included putting water to work for domestic, mining, agricultural, and manufacturing purposes.³⁶ In modern times, courts recognize as beneficial such additional uses as scenic enjoyment, recreation, and environmental protection. As the Idaho Supreme Court explained in 1974:

ample and reliable municipal water supplies to complete their ventures.”); Barton H. Thompson, Jr., *Water as a Public Commodity*, 95 MARQ. L. REV. 17, 17–18 (2011) (conceptualizing water as a “public commodity” to harmonize the visions of water as commodity, public trust, and human right).

28. KLEIN ET AL., *supra* note 25, at 843–44. Nine states (Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming) follow a “pure” version of the doctrine and nine other western states (California, Kansas, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota, Texas, and Washington) recognize a hybrid appropriation/riparian doctrine in which appropriation dominates. DOUGLAS L. GRANT & GREGORY S. WEBER, *CASES AND MATERIALS ON WATER LAW* 7 (8th ed. 2010).

29. GETCHES, NUTSHELL, *supra* note 24, at 74.

30. *Id.* at 89.

31. *See* Bd. of the Cnty. Comm’rs of Arapahoe v. Crystal Creek Homeowners’ Ass’n, 14 P.3d 325, 333 (Colo. 2000) (discussing the “can and will” doctrine set forth in COLO. REV. STAT. § 37-92-305(9)(b) (2000)).

32. *Id.* (recognizing that applications for conditional water rights can be dismissed for failure to demonstrate sufficient quantities of water available for appropriation).

33. GETCHES, NUTSHELL, *supra* note 24, at 92–97.

34. *Id.* at 24, 97–100.

35. *See, e.g.*, NEV. REV. STAT. ANN. § 533.035 (Lexis-Nexis 2012); NEW MEX. STAT. ANN. § 72-1-2 (West 2008); UTAH CODE ANN. § 73-1-3 (1989).

36. GETCHES, NUTSHELL, *supra* note 24, at 97.

[I]f we were now presented with a question of whether or not using water to operate a public swimming pool, a fountain, or to flood a tract to provide ice for a skating rink were beneficial uses, a good argument could be presented that such uses, although not [recognized by the traditional common law] were nevertheless beneficial. But we cannot say that such uses will always be beneficial because conditions might so change that these uses would be an unjustifiable use of water needed for other purposes. . . . [T]here is always a possibility that . . . uses beneficial in one era will not be in another and vice versa.³⁷

Thus, the contours of beneficial use evolve over time to accommodate changed circumstances.

Increasingly, these common-law requirements have been modified by statute. The diversion requirement has been relaxed or eliminated,³⁸ and many states now recognize non-diversionary “instream flow” water rights to keep water in place to protect the natural environment.³⁹ Most states have added a public interest test to the traditional triad of common-law requirements.⁴⁰ Furthermore, the common-law appropriation system itself has been supplanted by administrative permit systems in virtually every western state.⁴¹ Colorado remains the lone exception where users do not need to secure an administrative permit before making a valid appropriation of water. Instead, water users in Colorado put water to beneficial use first, and then go to trial courts known as “water courts” to demonstrate their compliance with the law and to receive decrees granting them water rights with specific priority dates.⁴²

As its name indicates, the prior appropriation doctrine rewards those who come first.⁴³ That is, unlike riparian water us-

37. Idaho Dep't of Parks v. Idaho Dep't of Water Admin., 530 P.2d 924, 931–32 (Idaho 1974) (Bakes, J., concurring).

38. See J. Vincent Jones, *The Bean Lake Saga: The End of the Diversion Requirement in Pre-1973 Water Appropriation Claims in Montana*, 7 GREAT PLAINS NAT. RESOURCES J. 64, 68 (2003) (discussing this in the context of Montana).

39. Charlton H. Bonham, *Perspectives from the Field: A Review of Western Instream Flow Issues and Recommendations for a New Water Future*, 36 ENVTL. L. 1205, 1207 (2006). See generally Symposium, *Western Instream Flows: Fifty Years of Progress and Setbacks*, 36 ENVTL. L. 1 (2006) (examining the development of instream flow rights and obstacles to their implementation, the interplay of federal and tribal instream flow protection with state water law, and innovative approaches for the future of instream rights; each author discusses the issue of instream rights from his or her area of specialty).

40. KLEIN ET AL., *supra* note 25, at 860, 872–73.

41. GETCHES, NUTSHELL, *supra* note 24, at 7, 88–89.

42. KLEIN ET AL., *supra* note 25, at 860.

43. GETCHES, NUTSHELL, *supra* note 24, at 78.

ers in the East who share the loss in times of shortage, western appropriators exercise their water rights in order of temporal priority. The person who made the first appropriation from a particular watercourse—known as the senior water user—may satisfy her water right in full before so-called junior appropriators receive a single drop of water.⁴⁴

B. TOO MANY PROMISES, TOO LITTLE WATER

The appropriation system's reliance on the principle of first come, first served has produced a curious semantic distinction. In water parlance, the phrase "paper water rights" refers to the newest entitlements. These rights are so junior that it is rarely their turn to receive water. In dry years—or even in average years—the last users in line may not receive any water at all.⁴⁵ In contrast, only the more reliable senior water rights are capable of consistently yielding the legal right to "wet water."⁴⁶ It is true that even the most junior water rights may allow their holders to fill reservoirs or recharge aquifers in rare years of abundance.⁴⁷ Nevertheless, the practice of overappropriation encourages an optimistically skewed perception of the sufficiency of existing water supplies.⁴⁸ As a result, for example, planners might be tempted to approve more development than the existing water supply can support reliably.⁴⁹ As the California Court of Appeals explained, "[t]hus, where land use planning determinations can be made on the basis of entitlement rather than real water, development can outpace the availability of water, leading to detrimental environmental consequences, excessive groundwater pumping, and pressure to develop additional water supplies."⁵⁰ Overall, the prevalence of oxymo-

44. *Id.* at 101.

45. KLEIN ET AL., *supra* note 25, at 860, 872–73.

46. WILKINSON, *CROSSING THE NEXT MERIDIAN*, *supra* note 27, at 240 ("What if the stream were already fully appropriated? Grant the permit anyway; give the junior a 'paper right.' The juniors will not get any wet water, except in an unusually high year, but they need priority status in case they get together and have a dam built. Thus, the mission of the water agencies was to serve the bidding of the rights holders [G]overnment was enlisted purely to solidify private rights to a public resource. These were captured agencies in the most extreme sense." (footnote omitted)).

47. *See id.*

48. *See generally* Planning & Conservation League v. Dep't of Water Res., 83 Cal. App. 4th 892, 914 (2000) (referring to paper water as an "illusion").

49. *Id.*

50. *Id.*

ronic waterless water rights is evidence that the long-revered edifice of priority has been pushed to its limit.

To outsiders, it strains logic that administrators continue to issue water rights that rarely, if ever, yield water. But to westerners, paper water rights may provide satisfying evidence that the system is working. Indeed, a long line of would-be water users demonstrates that the state has achieved “maximum utilization” of its scarce water resources—the idea that as many users as possible should be allowed to put the state’s water to work.⁵¹ In 1968, the Colorado Supreme Court refused to uphold an injunction against the pumping of a junior well, even though its operation likely interfered with senior water users diverting from a nearby river.⁵² To justify this departure from strict priority, the court cited to a competing principle, that of “maximum utilization.” Finding this principle implicitly rooted in the state constitution, the court explained, “[a]s administration of water approaches its second century the curtain is opening upon the new drama of maximum utilization and how constitutionally that doctrine can be integrated into the law of vested rights.”⁵³ Further, the court articulated, “[w]e have known for a long time that the doctrine was lurking in the backstage shadows as a result of the accepted, though oft violated, principle that the right to water does not give the right to waste it.”⁵⁴ Under this predilection for maximum utilization, it is not uncommon to see “fully appropriated,” dry riverbeds in the West in late summer because the right to use to every last drop of water has been allocated to the fullest extent possible.⁵⁵

Many western water supplies are now beyond full appropriation, instead becoming seriously “overappropriated.” That is, in some watersheds the cumulative volume of legal water entitlements far exceeds the average annual flow of the river.⁵⁶

51. *Fellhauer v. People*, 447 P.2d 986, 994 (Colo. 1968).

52. *Id.*; see also IDAHO CODE ANN. § 42-226 (2003) (“[W]hile the doctrine of ‘first in time is first in right’ is recognized, a reasonable exercise of this right shall not block *full economic development* of underground water resources.” (emphasis added)).

53. *Fellhauer*, 447 P.2d at 994.

54. *Id.*

55. See generally David H. Getches, *The Metamorphosis of Western Water Policy: Have Federal Laws and Local Decisions Eclipsed the State’s Role?*, 20 STAN. ENVTL. L.J. 3, 8, 9 (2001) [hereinafter Getches, *The Metamorphosis*] (asserting that western “rivers became fully appropriated early in the twentieth century”).

56. *Id.* at 10–11 (citing DONALD J. PISANI, *TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY 1848–1902*, at 37–38 (1992)).

The Colorado River, which serves as the lifeblood of seven states, has been overappropriated since 1922, when an inflated estimate of its flow was the basis of an interstate allocation.⁵⁷ On an intrastate level, many western states have stretched their rivers to the limit. In Colorado, most surface streams are overappropriated.⁵⁸ Likewise, in Idaho—which favors “full economic development” and “optimum use”—water supplies have been over-allocated so severely that in 2007, almost three thousand junior water users worried that their water rights would be curtailed unless nature provided snowpack at 105% of normal.⁵⁹ California has also fully appropriated⁶⁰ and overappropriated many of its watersheds. In the critical Bay-Delta region, for example, the State Water Board estimated in 2008 that appropriative water rights had a face value of 245 million acre-feet, as compared to an average annual unimpaired flow of approximately 29 million acre-feet. In other words, the Water Board had overappropriated water rights in that basin by up to⁶¹ about 800%.⁶²

57. Bd. of the Cnty. Comm'rs of Arapahoe v. Crystal Creek Homeowners' Ass'n, 14 P.3d 325, 332 n.8 (Colo. 2000) (noting that the Colorado River Compact of 1922 “overestimates the actual quantity of available Colorado River water during many years, due to variations in rainfall, snowfall, and resulting run-off”); David H. Getches, *Water Management in the United States and the Fate of the Colorado River Delta in Mexico*, 11 U.S.-MEX. L.J. 107, 107–08 (2003) (discussing Colorado River overappropriation).

58. See Derek L. Turner, Comment, *Pagosa Area Water & Sanitation Dist. v. Trout Unlimited and an Anti-Speculation Doctrine for a New Era of Water Supply Planning*, 82 U. COLO. L. REV. 639, 646 (2011) (asserting “virtually all surface water is overappropriated” (citing *High Plains A & M, LLC v. Se. Colo. Water Conservancy Dist.*, 120 P.3d 710, 721–22 (Colo. 2005) to note that three out of four of Colorado’s major rivers are overappropriated, and *City of Aurora ex rel. Util. Enter. v. Colo. State Eng’r*, 105 P.3d 595, 607 (Colo. 2005) for the proposition that “[t]he South Platte River Basin is substantially overappropriated”). See generally Sandra Zellmer, *The Anti-Speculation Doctrine and its Implications for Collaborative Water Management*, 8 NEV. L.J. 994 (2008) (discussing the anti-speculation doctrine).

59. Jennifer M. Carlquist, *Conjunctive Management: A New Battle of Priority in Idaho Water Law*, 45 IDAHO L. REV. 143, 144–45, 169–70 (2008).

60. The State Water Resources Control Board. has designated numerous streams “fully appropriated” year-round or during specific months. CAL. WATER CODE §§ 1205–1207 (West 2009). For a table of fully appropriated streams, see *Fully Appropriated Streams*, STATE WATER RESOURCES CONTROL BOARD., http://www.waterboards.ca.gov/waterrights/water_issues/programs/fully_appropriated_streams/ (lasted updated Mar. 1, 2009).

61. The magnitude of the apparent overappropriation may be diminished by a variety of factors, including re-use of water and the necessity of more than one permit for some water uses in California’s complex diversion and storage systems. See STATE WATER RES. CONTROL BD., *WATER RIGHTS WITHIN THE BAY/DELTA WATERSHED 3–4* (2008).

Under the appropriation doctrine, the mere grant of a water right does not constitute an absolute guarantee by the state that every water user, no matter how junior, will be satisfied in any particular year. In light of uneven levels of annual precipitation, some degree of overappropriation may be necessary to ensure efficient use of water resources, much like airlines overbook flights and keep a standby list to ensure that no seat goes empty.⁶³ At the same time, however, water users hold the understandable expectation that their state-granted water rights represent more than an empty token.⁶⁴ The line between full appropriation and overappropriation is a fine one. But at some point, significant overappropriation indicates a breakdown of the system and a refusal to recognize natural limits. The massive gap between appropriated water volumes and natural supply suggests that the states are making promises (albeit qualified ones) they cannot keep. In sum, the prior appropriation doctrine has produced the overappropriated West—a region of too many promises, too little water.

C. PRIORITY AT THE BREAKING POINT

1. Priority Celebrated

The common-law prior appropriation doctrine is rooted in scarcity. Beginning in the mid-nineteenth century, courts in the dry western states recognized the doctrine as the law of their

62. *Id.* at 2–3. In such cases, according to the Water Board, the face value of *legal* water rights exceeds the volume of water *hydrologically* available for use. *Id.* at 3. In limited circumstances, the Board may continue to grant water rights, even if the source is fully appropriated. In the case of agricultural projects, for example, the Water Board's historic practices called for approving new water rights as long as water was available in at least some of the years. *Id.* This practice, together with other current and historic factors, has caused some stream systems to be overappropriated. See California Water Impact Network, *Central Valley Watershed Over-Appropriation*, <http://www.c-win.org/node/67> (last visited Nov. 3, 2012) (asserting that California water agencies “vastly overcommitted water from the Bay-Delta’s Central Valley watershed streams”).

63. See STATE WATER RES. CONTROL BD., *supra* note 61, at 3 (“[T]he State Water Board is required to maximize the beneficial use of water.”).

64. See, e.g., *In re Hitchcock & Red Willow Irrigation Dist.*, 410 N.W.2d 101, 108 (Neb. 1987) (determining that for unappropriated water to be available in a practical sense, “the supply of water must be fairly continuous and dependable” (citing *Wyoming v. Colorado*, 259 U.S. 419 (1922))); GRANT & WEBER, *supra* note 28, at 127–35.

jurisdictions.⁶⁵ They rejected riparianism, a competing common-law doctrine followed in the wetter eastern states, under which only those who own so-called riparian lands that abut a natural watercourse have the right to use the adjacent stream or lake.⁶⁶ Instead, western judges celebrated the appropriation doctrine's unique ability to allocate precious water resources among users in a parched landscape, regardless of land ownership.⁶⁷ They believed its operating principle—first in time, first in right—provided an ordering precept and the muscle sufficient to guide the rough-and-tumble settlement of the West by miners and farmers.⁶⁸

Even the most pragmatic westerner can wax poetic when it comes to the appropriation doctrine, in general, and the element of priority, in particular. Colorado Supreme Court Justice Gregory J. Hobbs, Jr., who practiced environmental and water law for decades before his elevation to the bench in 1996, has celebrated the role of priority in numerous talks and writings.⁶⁹ In 2002, he responded to critics of priority in an article titled *Priority: The Most Misunderstood Stick in the Bundle*.⁷⁰ He argued that priority would remain at the heart of water policy in the twenty-first century.⁷¹ In fact, priority would ground the doctrine as it faced modern challenges, including fostering environmental protection and preservation, satisfying recreational demand, enforcing pollution control, and accommodating population growth.⁷² In scarcity, Justice Hobbs saw an oppor-

65. *Irwin v. Phillips*, 5 Cal. 140, 145–47 (1855); *Coffin v. The Left Hand Ditch Co.*, 6 Colo. 443, 446 (1882); *Yunker v. Nichols*, 1 Colo. 551, 565–66 (1872).

66. For a discussion of the dubious legal heritage of the doctrine, see Dale D. Goble, *Prior Appropriation and the Property Clause: A Dialogue of Accommodation*, 71 OR. L. REV. 381, 382–84 (1992) (arguing that the prior appropriation doctrine “has a mirage at its core, just like the shimmering waters of the Great American Desert that danced before the prospector and his cantankerous mule” because western territorial legislatures explicitly adopted the “common law of England” (riparianism)) and Joseph L. Sax, *The Constitution, Property Rights and the Future of Water Law*, 61 U. COLO. L. REV. 257, 268 (1990) (arguing that the “‘pure’ appropriation state of Colorado . . . became pure only by judicial revisionism in reading the Territorial legislature’s riparian statutes”).

67. See cases cited *supra* note 65.

68. See *id.*

69. See Gregory J. Hobbs, Jr., *Priority: The Most Misunderstood Stick in the Bundle*, 32 ENVTL. L. 37, 37 (2002).

70. See *id.*

71. See *id.* at 50–55.

72. See *id.*

tunity: the chance for community resolution of the tension between vested priorities to the beneficial use of water and the demand for new uses in accordance with “the changing customs and values of the people.”⁷³ In conclusion, Justice Hobbs’s prose gave way to poetry:

The two chambers of the western heart, the two lobes of the western mind, are beneficial use and preservation. Growth and glorious natural habitat, this is the heritage of the public domain. Our rapidly urbanizing western experience is bridled by our love for the vistas, rivers, and all life, our natural optimism, and our need for each other. In this our western place, so prized by the entire country, shall carry us forward.⁷⁴

Justice Hobbs was not alone as he penned his ode to priority. Numerous other jurists, administrative officials, and scholars share his reverence for one of the foundational principles of western water law.

In 1855, the California Supreme Court recognized in *Irwin v. Phillips* that “a universal sense of necessity and propriety [had] so firmly fixed [the priority principle] as that [it had] come to be looked upon as having the force and effect of *res judicata*.”⁷⁵ The court called for protection of the rights of miners and others “who, by prior appropriation, have taken the waters from their natural beds, and by costly artificial works have conducted them for miles over mountains and ravines, to supply the necessities of gold diggers”⁷⁶ Without legal protection of their expectations, the court warned that “the most important interests of the mineral region would remain without development.”⁷⁷

Like California, Colorado has long praised priority as an allocation principle. In the 1882 case of *Coffin v. Left Hand Ditch Co.*, the Colorado Supreme Court emphatically declared the eastern riparian doctrine inapplicable in its state, fearing that to do otherwise would invite disaster.⁷⁸ Citing an “[i]mperative necessity”⁷⁹ unknown in wetter climates, the court held that the first user of water from a natural stream for a beneficial purpose has a prior right to the use of the water as against all competing claimants. As the court explained,

73. *See id.* at 53–55.

74. *Id.* at 55.

75. 5 Cal. 140, 146 (1855).

76. *Id.*

77. *Id.*

78. 6 Colo. 443, 446–47 (1882).

79. *Id.*

“[h]ouses have been built, and permanent improvements made; the soil has been cultivated, and thousands of acres have been rendered immensely valuable, with the understanding that appropriations of water would be protected.”⁸⁰ It concluded with an ominous warning: “Deny the doctrine of . . . superiority of right by priority of appropriation, and a great part of the value of all this property is at once destroyed.”⁸¹

Similar to judges, western water administrators embrace priority, sometimes with a mixture of practicality and optimism. In a 2002 address to a group of water lawyers, Wyoming State Engineer Patrick T. Tyrrell rejected the views of those who “portray the priority system in Wyoming and the West as a vestige of its former self, a system whose applicability has diminished along with the importance of the chuck wagon and the wheelwright”⁸² He suggested that critics “might enjoy the analogous definition of democracy: it’s the worst system ever devised by man, except for everything else.”⁸³ Looking forward to the twenty-first century, Tyrrell expressed confidence in priority’s adaptive abilities. He asked “where is water law headed in Wyoming?”⁸⁴ Responding to his own question, Tyrrell responded, “Nowhere. By that, I mean I believe the priority system must remain. It becomes more flexible as it gets older For example, although ‘beneficial use’ historically required physical diversion or storage of water, instream flows have been recognized by statute since 1986 as a beneficial use.”⁸⁵ He added wryly, such flexibility represents “an evolutionary trait we humans can envy.”⁸⁶

Like judges and administrators, scholars have touted the virtues of priority. Many point to the relatively secure property rights that emerge from the priority system, giving senior water users enough confidence in the stability of their water rights to invest in water-dependent enterprises, thereby securing optimal development of the West.⁸⁷ Many others note that

80. *Id.*

81. *Id.*

82. Patrick T. Tyrrell, *Wyoming Water Law: Priority, Drought and the North Platte River*, WYO. LAWYER, June 2002, at 33.

83. *Id.*

84. *Id.* at 48.

85. *Id.*

86. *Id.*

87. *See, e.g.*, CHARLES J. MEYERS, NAT’L WATER COMM’N, LEGAL STUDY NO. 1: A HISTORICAL AND FUNCTIONAL ANALYSIS OF THE APPROPRIATION SYSTEM 3–6 (1971); FRANK J. TRELEASE, NAT’L WATER COMM’N, LEGAL STUDY NO.

the prioritization of water rights is an essential prerequisite to the development of “water markets” capable of reallocating water rights to accommodate changing societal needs.⁸⁸ Others would extend the benefits of priority further, as by fully privatizing that portion of an appropriator’s usufructuary right equivalent to its historic beneficial consumptive use.⁸⁹ Still other scholars have called for the extension of appropriation’s priority principle into new areas of dispute. When the Endangered Species Act imposes liability on water users for jeopardizing listed species or adversely modifying critical instream habitat, one scholar argues that the water users’ relative priorities should be the basis of any determination of proximate cause and allocation of responsibility among diverters.⁹⁰

2. Priority Questioned

As described in the previous section, many wax poetic about the virtues of priority. But others believe that priority poses an obstacle to modern water use because it has “frozen” scarce water resources into low-value uses, including certain agricultural practices that are no longer highly valued by society.⁹¹ As a result, these critics argue, the influence of priority is waning and should continue to wane as it proves insufficient to tackle modern challenges.⁹² Doubts about the continued viability of priority—at least in its absolute form—fall into four cate-

5: FEDERAL-STATE RELATIONS IN WATER LAW 5–6 (1971). Both of these excerpts are cited in GRANT & WEBER, *supra* note 28, at 9–11. See also TERRY L. ANDERSON & PAMELA SNYDER, *WATER MARKETS: PRIMING THE INVISIBLE PUMP* 33–34 (1997); Dean Lueck, *The Rule of First Possession and the Design of the Law*, 33 J.L. & ECON. 393, 427–430 (1995).

88. See *infra* Part II.C.

89. Lawrence J. MacDonnell, *Public Water-Private Water: Anti-Speculation, Water Reallocation, and High Plains A&M, LLC v. Southeastern Colorado Water Conservancy District*, 10 U. DENV. WATER L. REV. 1, 15–19 (2006).

90. James R. Rasband, *Priority, Probability, and Proximate Cause: Lessons from Tort Law About Imposing ESA Responsibility for Wildlife Harm on Water Users and Other Joint Habitat Modifiers*, 33 ENVTL. L. 595, 620–23 (2003).

91. GETCHES, NUTSHELL, *supra* note 24, at 101–02; A. Dan Tarlock, *The Future of Prior Appropriation in the New West*, 41 NAT. RESOURCES J. 769, 770–72 (2001) [hereinafter Tarlock, *The Future*] (recounting the evolution of prior appropriation and criticisms that perpetual rights “lock too much water into marginal agriculture and generally encourage inefficient off-stream consumptive uses to the detriment of aquatic ecosystem values and the needs of growing urban areas”).

92. See *infra* Part I.C.2.

gories. As discussed below, critics challenge the purity of priority's claimed historical pedigree; question the modern doctrine's adherence to priority in practice; chronicle non-priority water uses specifically approved under the doctrine; and list other federal and state laws that may have eclipsed the influence of priority.⁹³ In fact, in 1991, one scholar notably proclaimed the death of prior appropriation.⁹⁴

First, legal historians have begun to question the very foundations of the doctrine. According to traditional lore, eastern water law allowed a relative few riparian landowners to monopolize the use of water resources.⁹⁵ Appropriation, the story continues, broke ranks with such monopolistic tendencies by allowing anyone to make a valid appropriation of water, regardless of land ownership, and regardless of wealth.⁹⁶ But some legal historians have countered this egalitarian genesis story.⁹⁷ Instead, they have documented a contrarian history that grounds the appropriation doctrine in concerns other than widespread opportunity, economic growth, and efficiency.⁹⁸

These historians suggest that the doctrine was borne out of a concern for distributive justice and fairness.⁹⁹ According to this view, priority was neither the "cornerstone" of early water law in states including Colorado, nor was it an "absolute rule."¹⁰⁰ Instead, it was of an "auxiliary nature" that was subordinate to other concerns.¹⁰¹ For example, some state constitutions recognize that preference, not priority, might guide certain allocation decisions.¹⁰² As such, in times of shortage, administrators might favor domestic over agricultural use and

93. *See id.*

94. *See* Charles F. Wilkinson, *In Memoriam: Prior Appropriation 1848–1991*, 21 ENVTL. L. v, v (1991) [hereinafter Wilkinson, *In Memoriam*].

95. David B. Schorr, *Appropriation as Agrarianism: Distributive Justice in the Creation of Property Rights*, 32 ECOL. L.Q. 3, 7–10 (2005) (referring to the consensus view as "mythical" and "contradicted by the historical evidence").

96. *See id.*; Sax, *supra* note 66.

97. *See* Schorr, *supra* note 95, at 7–10.

98. *See id.*

99. *See id.*

100. *Id.* at 53–54; *see also* Samuel C. Wiel, "Priority" in *Western Water Law*, 18 YALE L.J. 189, 189 n.3 (1909).

101. *See* Schorr, *supra* note 95, at 53–54.

102. *Id.* at 44–45; *see also* GETCHES, NUTSHELL, *supra* note 24, at 103–06 (discussing the relationship between preferences and priority).

agricultural use over industrial use—rather than relying on the order in which water rights were initiated.¹⁰³

As early as 1909, eminent water scholar Samuel C. Wiel argued that priority's importance had been exaggerated.¹⁰⁴ Examining a half-century of case law, Wiel explained, "there has always been a minority current of authority contending that the exclusiveness of a prior right should be recognized only to a certain degree, and that priorities should not be enforced when to do so would be 'unreasonable' to water users upon the same stream, though subsequent in time of use."¹⁰⁵ Looking forward, Wiel observed:

[T]he "exclusiveness" rule of priority comes more and more in conflict with the community idea. Justice is coming more and more to demand an equitable co-relation of the users for the common good, and these changed conditions have caused here and there revivals of the idea that the priority must be reasonable . . . or it will not be fully enforced.¹⁰⁶

Wiel predicted "a weakening of the strict rule of priority" and the growth of what might be called "the principle of unreasonable priority."¹⁰⁷

As a second challenge to priority, observers have documented the failure of administrators to enforce the principle consistently. Some scholars note the irony of the diminishing practical significance of *priority* in the implementation of the doctrine that bears its name. Professor Dan Tarlock has argued that "priority enforcement is more bluff than substance"¹⁰⁸ He lists numerous circumstances in which priority is not followed, including the administration of some irrigation water rights, the practice of "water spreading" to non-authorized places of use, general stream adjudications, the municipal "super-preference," and the regulation of users (such as Arizona and California) that hold large blocks of water.¹⁰⁹ Tarlock sug-

103. See GETCHES, NUTSHELL, *supra* note 24, at 104–06.

104. Wiel, *supra* note 100, at 190.

105. *Id.*

106. *Id.* at 194 (quotation marks omitted).

107. *Id.* at 198.

108. A. Dan Tarlock, *Prior Appropriation: Rule, Principle, or Rhetoric?*, 76 N.D. L. REV. 881, 883 (2000) [hereinafter Tarlock, *Rule, Principle, or Rhetoric?*].

109. Tarlock, *The Future*, *supra* note 91, at 778–85; see also *id.* at 775–78 (describing priority as a "shadow doctrine" and presenting "scattered empirical evidence" in support of contention that "priority exists more as a threat than an actual enforcement practice"). Further, Tarlock questions whether the enforcement of priorities contributes meaningfully to the doctrine's underlying

gests that equitable sharing and cooperation, not priority, dominate in actual practice.¹¹⁰ As he explains, “[p]riority’s modern significance lies in the threat of enforcement rather than the actual enforcement because it encourages water users to cooperate either to reduce the risk of enforcement to as close to zero as possible or to share more equitably the burdens of shortages.”¹¹¹ Overall, he concludes, “[i]t is perhaps more accurate to describe prior appropriation as an extreme default rule of decreasing marginal importance.”¹¹²

As a third line of departure from the rhetoric of priority, some chronicle the circumstances under which the modern doctrine specifically permits—and sometimes embraces—non-priority administration of water rights. Recognized priority exceptions include the doctrines of full economic development, beneficial use, reasonable use, absence of waste, optimum use, futile calls,¹¹³ and plans for augmentation.¹¹⁴ In the case of groundwater, many states do not call for strict priority enforcement. If they did, a handful of large-volume senior appropriators could insist on maintaining historic aquifer levels, thereby rendering entire aquifers off-limits to anyone else.¹¹⁵ Further, the need for priority administration can be reduced by the construction of large storage reservoirs that add year-round security to water rights.¹¹⁶ Moreover, experiments with rainwa-

goal, which he describes as “the protection of investment-backed expectations from the risks of variable water years and perhaps now global climate change.” Tarlock, *Rule, Principle, or Rhetoric?*, *supra* note 108, at 883–84.

110. See Tarlock, *Rule, Principle, or Rhetoric?*, *supra* note 108, at 883.

111. See *id.*

112. *Id.* at 894; see also Michael C. Blumm, *The Rhetoric of Water Reform Resistance: A Response to Hobbs’ Critique of Long’s Peak*, 24 ENVTL. L. 171, 186 (1994) (“The current system of water allocation suffers from poor enforcement, little citizen involvement, and virtually eschews comprehensive planning entirely.”); Getches, *The Metamorphosis*, *supra* note 55, at 9 (discussing the passage of the era “when the key issues could be refereed by an official who enforced simple priorities among rights holders”).

113. See generally Carlquist, *supra* note 59 (discussing concepts such as full economic development, beneficial use, reasonable use, absence of waste, optimum use, and futile call).

114. Part II.A discusses plans for augmentation.

115. See, e.g., Tarlock, *The Future*, *supra* note 91, at 777 (“The [priority] doctrine has endured in part because it is able to accommodate new users and to adapt to the increasing scale of use.”); see also Carlquist, *supra* note 59, at 161–70 (describing conjunctive management in Idaho of surface water and groundwater, and analyzing the role of priority in such management).

116. Tarlock, *The Future*, *supra* note 91, at 778 (arguing that “the costs of enforcing prior rights are often likely to be unacceptably high, unfair, and disruptive of established uses” and citing to the example of California, “which is

ter harvesting allow juniors, under limited circumstances, to capture and use precipitation, effectively jumping in line ahead of seniors who rely on that runoff to replenish the streams and aquifers that supply their senior entitlements.¹¹⁷

Fourth, some scholars have noted the diminishing role of state law in the allocation of western water resources. Indeed, the late David Getches argued in 2001 that state control over water resources had long been a “myth” that depended on a “precarious . . . congressional forbearance in the exercise of federal preemption.”¹¹⁸ Increasingly, Getches argued, the states’ role was eclipsed by federal influence in areas such as the federal reclamation program,¹¹⁹ the protection of endangered species,¹²⁰ and federal statutes including the Clean Water Act, Clean Air Act, Federal Land Policy and Management Act, and the National Forest Management Act.¹²¹ Such federal actions, Getches noted, joined forces with a series of local, place-based, stakeholder-participatory reform efforts.¹²² Overall, the “most important innovations in water policy in the 1990s have occurred in response to federal pressure and local initiatives, and almost entirely outside the legislatures and courts of the western states.”¹²³ Getches concluded:

Although sweeping state institutional reforms are theoretically possible, the experience of the recent past suggests that the most promising advances in the foreseeable future will continue to be ad hoc, outside-the-box, responses to problems arising in specific geographic areas. Unless states can muster the will to embrace reform when the opportunities arise, the federal government along with these local groups will continue to foment constructive change.¹²⁴

Taken together, such deviations from priority enforcement prompted law professor Charles Wilkinson’s famous 1991 pro-

famous for solving water allocation problems by constructing a massive water infrastructure and allocating water by large blocks, rather than by adjudicating and enforcing priorities”).

117. See Stephen N. Bretsen, *Rainwater Harvesting Under Colorado’s Prior Appropriation Doctrine: Property Rights and Takings*, 22 FORDHAM ENVTL. L. REV. 159, 159–60 (2011) (discussing the illegality of rainwater harvest in Colorado prior to the 2009 passage of COLO. REV. STAT. §§ 37-90-105(1)(f) and 37-92-602(1)(g)).

118. Getches, *The Metamorphosis*, *supra* note 55, at 8.

119. *Id.* at 13–14.

120. *Id.* at 14–18.

121. *Id.* at 17–18.

122. *Id.* at 42–52.

123. *Id.* at 42.

124. *Id.*

nouncement of the death of prior appropriation.¹²⁵ In a provocative article titled *In Memoriam: Prior Appropriation 1848–1991*, Professor Wilkinson anthropomorphized Mr. Prior Appropriation as a “grand man [who] led a grand life—by any standard he was one of the most influential people in the history of the American West.”¹²⁶ Among Prior’s accomplishments, Wilkinson listed his ability to weather the challenges posed by changing public interest standards,¹²⁷ to support the development of numerous communities throughout the West,¹²⁸ and to oversee the great dam-building era of the middle-twentieth century.¹²⁹ In the end, though, Prior’s inability to change and his contempt for limits proved to be his undoing.¹³⁰ In the words of Prior’s imagined wife, Prior was sometimes wrong, and “his wrong-headedness increased over the years. It seems he just couldn’t change—he was so set in his ways, because he believed so deeply in his convictions.”¹³¹

In sum, as the priority system faces the challenges of environmental protection, climate change, and regional population growth, it has been stretched to the point that the simple concept of “first come, first served” is not sufficient to defuse all conflicts. The pressing need for certainty may drive even senior stakeholders to the bargaining table when they are so frustrated with the status quo that they are willing to forgo some of the benefits of their seniority in exchange for the promise of increased certainty, reliability, or other perceived advantages. This reduced reliance on the priority system creates a decisional void and requires the parties to negotiate an alternate paradigm to achieve a sustainable allocation of water in the face of scarcity.

125. Wilkinson, *In Memoriam*, *supra* note 94, at v.

126. *Id.* at v.

127. *Id.* at ix–x.

128. *Id.* at xvii–xviii.

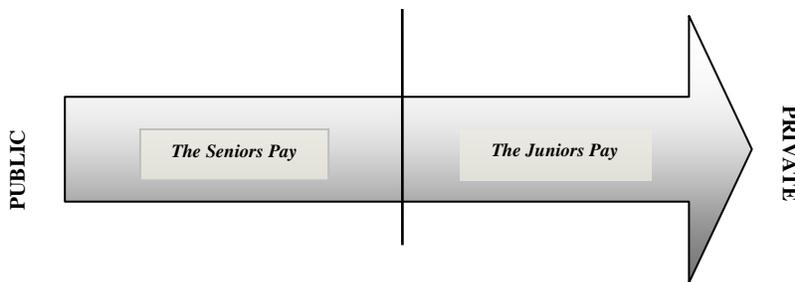
129. *Id.* at xv.

130. *Id.* at xvi and xvii.

131. *Id.* at xvii; *see also* WILKINSON, *CROSSING THE NEXT MERIDIAN*, *supra* note 27, at xi–xiii (describing the prior appropriation doctrine as one of the “lords of yesterday” still dominated by the thinking of another century that “simply do not square with the economic trends, scientific knowledge, and social values in the modern West”).

II. THE REALLOCATION CONTINUUM: FOLLOW THE MONEY

As water supplies have been stretched to satisfy increasing demand, the western faith in priority has been tested. Many continue to believe that priority can allocate water fairly and efficiently among diverse users.¹³² Others worry that scarcity threatens to overwhelm the system, and charge priority with “locking up” the oldest, most reliable water rights into uses, such as inefficient agricultural practices, that no longer serve society well.¹³³ Increasingly, both camps have embraced the need for some reallocation of water rights,¹³⁴ using tools that range from water markets to the public trust doctrine.¹³⁵



This Part introduces a comprehensive cataloguing of the techniques that states have employed to reallocate water. In an

132. See *infra* Part II.A.3 (discussing how limitations inherent in the doctrine, though rarely enforced, may provide tools for reexamining water usage).

133. See *infra* Part II.A.4 (contrasting the potential of the public trust doctrine as a reallocation tool with the reality of the public trust doctrine).

134. See WILKINSON, CROSSING THE NEXT MERIDIAN, *supra* note 27, at 287 (arguing that “[t]he possibilities of reallocation without undue hardship are so great in part because the waste and excessive use are so great”); Holly Doremus & Michael Hanemann, *The Challenges of Dynamic Water Management in the American West*, 26 UCLA J. ENVTL. L. & POL’Y 55, 58, 60–62 (2008) (discussing how climate change creates the need for water redistribution and evaluating the challenges to a dynamic approach to water reallocation); George A. Gould, *Conversion of Agricultural Water Rights to Industrial Use*, 27B ROCKY MTN. MIN. L. INST. 1791, 1791–92 (1982) (arguing that when industries need new water supplies, they can either “develop new sources of water or . . . transfer water from an existing use” and concluding that “water reallocation should begin to occur before all water is allocated; reallocation is less costly privately and socially”), *quoted in* GRANT & WEBER, *supra* note 28, at 11; Douglas L. Grant, *Collaborative Solutions to Colorado River Water Shortages: The Basin States’ Proposal and Beyond*, 8 NEV. L.J. 964, 993 (2008) (expressing hope for interbasin reallocation to cope with the growing imbalance between water supply and demand); Tarlock, *The Future*, *supra* note 91, at 778–81 (discussing alternatives to a strict priority system).

135. See *infra* Part II.B.

effort to bring order to the various instruments rattling inside state tool boxes, the discussion aligns reallocation options along a logical continuum that considers *who* bears the cost of reallocation. At one end of the sequence lay the *seniors pay* options—methods by which administrators cut back senior water rights to provide water for emerging societal values such as recreation and environmental protection.¹³⁶ These tools tend to emphasize the public aspect of water, restricting water rights to efficient, non-wasteful, beneficial uses of a common resource. At the other end of the continuum, the *juniors pay* options call for new users to buy out, compensate, or otherwise yield to older water uses, even if the older uses are of marginal social utility.¹³⁷ These options stress the private aspect of water as a type of property right.

In addition to the continuum, accompanying schemata identify circumstances under which each grouping of tools works best and circumstances under which each grouping is contraindicated. Although seniors pay regulatory options work well in some situations, laxity of enforcement has strengthened seniors' sense of absolute entitlement, which has provided further support for an unspoken culture of non-enforcement.¹³⁸ Similarly, although juniors pay tools are useful in some cases, the development of water markets has been hindered by unexpected inefficiencies, transaction costs, and third-party impacts;¹³⁹ and the compensation of seniors through the regulatory takings doctrine has produced an analytically incoherent line of inconsistent judicial opinions.¹⁴⁰ After laying out both ends of the reallocation continuum, this Part concludes that additional viable solutions may lie in the middle, in the context of voluntary stakeholder negotiations. Part IV takes up that middle path in more detail, introducing the concept of "water bankruptcy."

A. THE SENIORS PAY

Although the priority system recognizes superior rights in a watershed's first appropriators, a number of built-in doctrinal controls render this superiority less than absolute in particular

136. See *infra* Part II.A.

137. See *infra* Part II.B.

138. Cf. *supra* notes 108–12 and accompanying text (discussing the effects of the culture of non-enforcement on priority).

139. See *infra* notes 194–200 and accompanying text.

140. See *infra* Part II.B.3.

circumstances. Some of the limitations bow to reality by recognizing physical and historical constraints or tailoring priority administration to the unique characteristics of groundwater. Others strive to give meaning to the doctrine's core element—beneficial use. Still others reflect the public-private tension inherent in the allocation of water, and adjust the latter in the name of the former.¹⁴¹ Overall, however, the *seniors pay* mechanisms tend to be under-enforced. As one scholar has noted in the context of the Pacific Northwest, states routinely elevate protection of established uses over limitations inherent in the priority doctrine, including prohibitions against non-use, waste, and expansion of use.¹⁴²

141. See Sax, *supra* note 66, at 281 (claiming that western allocation systems operated to elevate the private aspect of water over the public aspect).

142. Reed D. Benson, *Maintaining the Status Quo: Protecting Establishes Water Uses in the Pacific Northwest, Despite the Rules of Prior Appropriation*, 28 ENVTL. L. 881, 883 (1998).

The Seniors Pay	Works Best When . . .	Contraindications
<u>Navigating the Nuances of Priority</u> — <i>Futile call</i> — <i>Federal reserved water rights</i> — <i>Plans for augmentation</i>	— Stream bed is dry and seniors far downstream, making usable deliveries difficult (futile call) — Jurisdiction has experience with combined administration of surface and groundwater supplies; ready availability of reservoir storage (augmentation)	— Administrators unwilling or unable to enforce limits against senior users; lack of data on actual beneficial use (futile call) ¹⁴³ — No tradition of conjunctive use of surface and groundwater supplies; limited reservoir storage available (augmentation)
<u>Managing Groundwater</u> — <i>Maximum beneficial use</i> — <i>Reasonable means of withdrawal</i>	— Aquifer receives little annual recharge and mining potential is great	— Aquifers have close hydrogeologic connection with surface supplies
<u>Requiring Actual & Beneficial Use</u> — <i>Waste prohibition</i> — <i>Abandonment (whole or partial)</i> — <i>General stream adjudications</i>	— State permits sale of water rights, and agricultural users actively sell out to municipalities (waste, abandonment) — Volume of beneficial use inconsistent with volume of water claimed (general adjudications)	— Few active markets for water rights (waste, abandonment) — State maintains comprehensive records of water rights and actual use (general adjudications)
<u>Protecting Public Values</u> — <i>Public trust doctrine</i>	— Well accepted in California ¹⁴⁴	— Repudiated in Colorado ¹⁴⁵

1. Navigating the Nuances of Priority

Administrators are charged with enforcing water rights in order of priority.¹⁴⁶ However, they will not automatically shut

143. *Id.* at 891, 893–95 (discussing political limitations on restricting senior users).

144. *See, e.g., Nat'l Audubon Soc'y v. Superior Court*, 658 P.2d 709, 732 (Cal. 1983).

145. *See People v. Emmert*, 597 P.2d 1025, 1028–29 (Colo. 1979) (rejecting the application of the public trust doctrine to non-navigable watercourses).

down junior appropriators whenever seniors “call” for satisfaction of their water rights.¹⁴⁷ Instead, administrators consider a variety of physical factors, including the flow of the stream, the relative saturation of the stream bed, and the lag time between junior shut-off and potential senior delivery.¹⁴⁸ If administrators conclude that it is not physically possible to deliver water to seniors in usable quantities, then they will deem the call “futile” and decline to curtail junior users.¹⁴⁹ Historically, however, administrators have been loath to deviate from the priority system, even if it would take heroic efforts to deliver a slight volume of water to a calling senior. For example, in one extreme case cited frequently in water law casebooks, the Nebraska Supreme Court recognized the right of downstream senior appropriators to call for their water, even though stream conditions required “approximately 700 second-feet of water at North Platte to deliver 162 second-feet at the headgate of the Kearney canal when the river bed is wet.”¹⁵⁰ That is, water administrators would shepherd relatively large volumes of past upstream juniors’ diversion points in order to deliver only a small volume to the downstream seniors (the difference would be lost to seepage, evaporation, and the like). The court suggested that administrators should take care to avoid departures from priority enforcement and should resist declaring senior calls futile because that “would clothe . . . officers with a discretion incompatible with the vested interests of the [seniors], and destroy the very purpose of the doctrine of appropriation existent in this state.”¹⁵¹ Rather, the court held, the law “does not . . . authorize the administrator of the waters of the stream to refrain from delivering a usable quantity of water to a senior appropriator because it might appear to him that excessive losses would result.”¹⁵²

Beyond the generally rare circumstance of futile calls, seniors may be systemically curtailed when a court determines that senior water rights have been impliedly reserved by the federal government, even if those senior rights have not previ-

146. GETCHES, NUTSHELL, *supra* note 24, at 103–04.

147. *See id.*

148. *See, e.g., State ex rel. Cary v. Cochran*, 292 N.W. 239, 244–46 (Neb. 1940).

149. GETCHES, NUTSHELL, *supra* note 24, at 103–04.

150. *Cary*, 292 N.W. at 245.

151. *Id.* at 247.

152. *Id.*

ously been exercised, quantified, or folded into the states' ladders of priority enforcement. In the 1908 case of *Winters v. United States*, the United States Supreme Court considered the potential water rights of Native American tribes in Montana that ceded their ancestral lands to the federal government, reserving to themselves the vastly diminished acreage encompassed within the Fort Belknap Indian reservation.¹⁵³ The Court held that at the time of the reservation, Congress impliedly reserved water rights on behalf of the tribes sufficient to carry out the purposes of the reservation.¹⁵⁴ Later, courts applied the federal reserved water rights doctrine to other types of federal reservations, including national monuments,¹⁵⁵ national forests,¹⁵⁶ national recreation areas,¹⁵⁷ and national wildlife refuges.¹⁵⁸ Subsequent litigation has quantified federal water reservations and determined their priority dates.¹⁵⁹ As a result, these implied reservations have been made explicit and moved to the front of the priority line in some watersheds, thereby cutting back on the amount of water available to existing seniors.¹⁶⁰

A third tool that authorizes departure from strict priority enforcement is the so-called plan for augmentation. Most prominent in Colorado, this mechanism allows junior water users to make out-of-priority diversions, provided that they replace a volume of water equivalent to their consumptive use from an alternative source of supply.¹⁶¹ Often, juniors purchase shares of reservoir storage water, and substitute releases of this water to make up for their out-of-priority depletions.¹⁶² However, all

153. *Winters v. United States*, 207 U.S. 564, 576 (1908); see also *United States v. Winans*, 198 U.S. 371, 381 (1905) (recognizing that a treaty establishing an Indian reservation “was not a grant of rights to the Indians, but a grant of rights from them—a reservation of those not granted”).

154. *Winters*, 207 U.S. at 577.

155. *Cappaert v. United States*, 426 U.S. 128, 141 (1976) (holding that the 1952 Presidential proclamation of Death Valley as a national monument impliedly reserved sufficient water in Devil’s Hole cavern to sustain the unique “Devil’s Hole pupfish”).

156. *United States v. New Mexico*, 438 U.S. 696, 718 (1978) (recognizing that the United States impliedly reserved water rights when it reserved the Gila National Forest, but limiting the purpose of those reservations to the primary purposes for which national forests were established).

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

158. *Id.*

159. See GETCHES, NUTSHELL, *supra* note 24, at 330–32.

160. *Id.*

161. See COLO. REV. STAT. §§ 37-90-137(9), 37-92-308(1)(a) (2011).

162. GETCHES, NUTSHELL, *supra* note 24, at 187–88.

such plans are subject to the requirement that prior appropriators suffer no injury.¹⁶³ As a result, although the seniors pay in theory by foregoing their right to strict priority enforcement, senior rights are not diminished in any concrete or practical sense.

2. Managing Groundwater

The physical characteristics of aquifers make it difficult to appropriate groundwater under pure principles of priority.¹⁶⁴ Whereas surface streams are recharged annually by precipitation, some aquifers may receive very little annual recharge.¹⁶⁵ As a result, and with the advent of modern technology, it is generally possible to pump water out of aquifers at a rate that far exceeds recharge.¹⁶⁶ As early as 1973, for example, the National Water Commission reported that the volume of groundwater pumped annually in the continental United States exceeded recharge by a factor of about forty-six.¹⁶⁷ As a result, aquifers can be “mined,” much as minerals and other resources are withdrawn from the earth at unsustainable rates.¹⁶⁸ Theoretically, in a pure priority regime, the most-senior appropriator could monopolize an entire aquifer and insist that administrators curtail all other well operators. Otherwise, the senior would claim, the life of the aquifer would be diminished to the senior’s detriment.

To avoid this problem, even strict priority jurisdictions may introduce an element of sharing into their groundwater regimes—thereby creating a type of seniors pay tool to allow maximum beneficial use of nonrenewable groundwater resources by a broader range of users.¹⁶⁹ In some cases, for exam-

163. See, e.g., *Cache LaPoudre Water Users Ass’n v. Glacier View Meadows*, 550 P.2d 288, 294 (Colo. 1976) (“[U]nder the plans for augmentation . . . water is available for appropriation when the diversion thereof does not injure holders of vested rights.”).

164. See generally *GRANT & WEBER*, *supra* note 28, at 334–424.

165. See *id.*

166. See *id.*

167. *Id.* at 350–51 (citing NAT’L WATER COMM’N, *WATER POLICIES FOR THE FUTURE* 230 (1973)).

168. See *id.*

169. See, e.g., *Fundingsland v. Colo. Ground Water Comm’n*, 468 P.2d 835, 839 (Colo. 1970) (allowing juniors to deplete aquifer to the detriment of seniors, but limiting overall aquifer depletion to a rate of 40% in 25 years); *Fellhauer v. People*, 447 P.2d 986, 994 (Colo. 1968) (refusing to enjoin junior well pumping, even though its operation likely interfered with senior water users diverting from a nearby river and justifying the result under the compet-

ple, seniors may be entitled to protection, but only when junior pumping threatens “unreasonable” waste or might “unreasonably” affect their prior rights.¹⁷⁰ In other cases, seniors will be protected, but only to the extent that their wells constitute “reasonably adequate” means of withdrawal, in light of economic and historical factors.¹⁷¹

3. Requiring Actual and Beneficial Use

Under the appropriation doctrine, water rights that are not used continuously may be declared abandoned.¹⁷² Although intended to promote efficient use of water resources, this use-it-or-lose-it threat may create a perverse incentive to waste water. That is, water users face pressure to inflate their actual or claimed volume of water use to guard against potential charges of abandonment.¹⁷³ Despite mechanisms to restrict existing usage to beneficial non-wasteful levels, it is rare that administrators declare water rights to be abandoned¹⁷⁴ or find that existing practices constitute waste subject to injunction.¹⁷⁵ According to one scholar, the theoretical prohibition against waste articulated in every state “has been enforced sporadically at best.”¹⁷⁶

Despite this general laxity of enforcement, at least two contexts provide an opportunity to reexamine the past usage of

ing principle of promoting “maximum utilization” of water resources); *see also* IDAHO CODE ANN. § 42-226 (2003) (“[W]hile the doctrine of ‘first in time is first in right’ is recognized, a reasonable exercise of this right shall not block *full economic development* of underground water resources.” (emphasis added)).

170. *Fundingsland*, 468 P.2d at 836.

171. *City of Colo. Springs v. Bender*, 366 P.2d 552, 556 (Colo. 1961).

172. *See, e.g., E. Twin Lakes Ditches & Water Works, Inc. v. Bd. of Cnty. Comm’rs*, 76 P.3d 918, 919 (Colo. 2003) (holding a water right not abandoned because the evidence was insufficient to conclude that the appropriator intended to abandon the water right).

173. *See* GETCHES, NUTSHELL, *supra* note 24, at 117–20 (discussing the common historical practice of overstating water rights).

174. *See, e.g., E. Twin Lakes*, 76 P.3d at 920 (declining to hold a water right abandoned even though it had not been exercised for approximately thirty years). *But see* *N. Kern Water Storage Dist. v. Kern Delta Water Dist.*, 54 Cal. Rptr. 3d 578, 601 (Cal. App. 5th 2007) (upholding a declaration of forfeiture).

175. GETCHES, NUTSHELL, *supra* note 24, at 119 (concluding that “[a] water right once manifested in a permit or decree is rarely disturbed”).

176. WILKINSON, *CROSSING THE NEXT MERIDIAN*, *supra* note 27, at 234–35. (“Early on, the rubric of beneficial use also came to encompass the idea that water, once validly diverted and put to use, could not be wasted. But the language decrying waste was mostly theoretical. It was always difficult to police waste, and in some cases to define it, so the prohibition against waste, although an announced principle in the cases and statutes of every western state, has been enforced sporadically at best.”).

water rights and to trim them back to levels of historically demonstrable, efficient usage. First, water users may seek permission to change one or more attributes of their water rights—such as point of diversion, place of use, or type of use—while maintaining their senior priorities. This may occur, for example, in the context of the sale of a water right from one user to another.¹⁷⁷ Most states allow such changes, subject to the “no-injury rule.” In a typical explanation of the rule, the Colorado Supreme Court explained as early as 1954:

There is absolutely no question that a decreed water right is valuable property; that it may be used, its use changed, its point of diversion relocated; and that a municipal corporation is not precluded from purchasing water rights previously used for agricultural purposes . . . provided that no adverse effect be suffered by other users from the same stream¹⁷⁸

Importantly, despite their seniority, prior appropriators may not change their water rights if anyone, including juniors, will suffer injury. As the Colorado court asserted, “junior appropriators have vested rights in the continuation of stream conditions as they existed at the time of their respective appropriations, and . . . subsequent to such appropriations they may successfully resist all proposed changes . . . which in any way materially injure[] or adversely affect[] their rights.”¹⁷⁹ To ensure no injury to existing water rights, many jurisdictions reduce changed water rights to their proven historic, non-wasteful consumptive use, which may be substantially less than the ceiling represented by the face value of water rights.¹⁸⁰ Other jurisdictions go even further by applying complex formulas to determine the amount that should have been necessary to accomplish the users’ stated purposes.¹⁸¹

The volume of existing water rights may also be restricted in the course of proceedings known as “general stream adjudications.” During such proceedings, administrative tribunals seek to close the gap between the volume of water claimed by water users (perhaps relying on the face value of their water permits or water rights) and the volume of water actually

177. See *infra* Part II.B (discussing water markets).

178. *Farmers Highline Canal & Reservoir Co. v. City of Golden*, 272 P.2d 629, 631 (1954).

179. *Id.* at 631–32.

180. GETCHES, NUTSHELL, *supra* note 24, at 118–20.

181. For example, agricultural water rights may be limited to the “duty of water”—the amount of water per acre necessary to grow specified crops, at specified altitudes, in specified regions, which is typically statutorily defined. See GETCHES, NUTSHELL, *supra* note 24, at 121–23.

placed to historic beneficial use.¹⁸² As in change-of-water-right proceedings, the general stream adjudication may result in the partial abandonment of water rights to the extent of actual non-use.¹⁸³

4. Protecting Public Values

In some states—most notably California, among western states—water rights are inherently limited by the public trust doctrine. In its seminal decision of 1983, the California Supreme Court made clear that the state’s navigable lakes and streams are subject to the public trust to protect navigation, commerce, fishing, recreational, ecological, and other public values.¹⁸⁴ According to the court, the state possesses both the power and the duty to protect trust assets. In the case of water rights, the court explained, “the state has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible.”¹⁸⁵ Even after the state water board issued water rights, according to the court, the state retained “the power to reconsider allocation decisions” and, in some cases that power “extends to the revocation of previously granted [water] rights.”¹⁸⁶ If state agencies fail to act, members of the public can bring a court action to enforce the public trust.¹⁸⁷ Despite the doctrine’s potential impact and apart from a few high-profile cases, however, there is very little evidence that California’s

182. See Tarlock, *Rule, Principle, or Rhetoric?*, *supra* note 108, at 882–83. As the author explains:

[T]he enforcement of priorities assumes that adequate use and streamflow information exists and that there is a speedy curtailment process. This is seldom the case. There is often a large gap between the amount of water claimed and the amount of water actually put to beneficial use, and this makes enforcement difficult. To remedy this problem, western states such as Arizona, Idaho, and Montana have invested millions of dollars in general adjudications to quantify rights so that the system of priorities can actually be fairly and accurately administered over a century after large claims to water were filed.

Id.

183. See *id.* (mentioning general adjudications in states including Arizona, Idaho, and Montana to remedy the problem of “a large gap between the amount of water claimed and the amount of water actually put to beneficial use, [which] makes enforcement difficult”).

184. Nat’l Audubon Soc’y v. Superior Court, 658 P.2d 709, 712 (Cal. 1983).

185. *Id.* at 728.

186. *Id.* at 728, 723.

187. Ctr. for Biological Diversity, Inc. v. FPL Grp., Inc. (*The Mono Lake Case*), 83 Cal. Rptr. 3d 588, 601 (Cal. App. 1st Dist. 2008).

public trust doctrine has affected the water use of senior rights holders.¹⁸⁸

B. THE JUNIORS PAY

The Juniors Pay	Works Best When . . .	Contraindications
<u>Enforcing Priority</u> — <i>Call for administration</i> — <i>Overappropriation</i>	— Annual supply roughly equals face value of water rights	— System is overappropriated by a significant factor
<u>Managing Groundwater</u> — <i>Economic reach</i> — <i>“Critical area” legislation</i>	— Seniors can afford efficiency measures to extend aquifer life for a significant number of years — Aquifer receives a significant amount of annual recharge	— Seniors cannot afford efficiency measures and “call out” a significant number of junior appropriators — Aquifer receives little annual recharge
<u>Paying for Water</u> — <i>Water markets</i> — <i>The regulatory takings doctrine</i>	— Watershed has few users potentially impacted by transfer, thereby keeping transaction costs low (markets)	— Transaction will generate significant externalities, including disruption of agricultural communities, which cannot be remedied easily with financial compensation (markets) — Doctrinal incoherence makes doctrine difficult to apply in the context of water rights, particularly when sub-allocated by contract (takings)

1. Enforcing Priority

The appropriation system requires administrators to satisfy the oldest priority in a watershed before the next-most-senior user receives any deliveries of water.¹⁸⁹ Thus, by design, juniors “pay” for any gap between available supply and the face

188. See Dave Owen, *The Mono Lake Case, the Public Trust Doctrine, and the Administrative State*, 45 U.C. DAVIS L. REV. 1099, 1104–05 (2012) (explaining the expansive view of the public trust doctrine from the *Mono Lake Case* has been rarely, if ever, used by the courts and is primarily used at the agency level as a constraint on new rights and uses rather than on established uses).

189. See *supra* Part I.A.

value of water rights by assuming the risk of any shortage. As basins become more and more overappropriated, a larger pool of juniors with “paper water rights” will bear the cost of any shortage of supply.¹⁹⁰

2. Managing Groundwater

As discussed above, many jurisdictions that apply the appropriation doctrine to groundwater introduce an element of sharing, particularly when regulating aquifers that do not receive significant amounts of annual recharge from precipitation.¹⁹¹ These modifications of priority are designed to prevent a single senior from commanding exclusive use of an aquifer in perpetuity. But states applying the appropriation doctrine to groundwater must balance this undermining of strict priority with the rights of senior appropriators. To spread the burden of groundwater shortage, some states insist that seniors use groundwater efficiently (as by drilling deeper wells, rather than calling for administrators to curtail junior pumping that lowers groundwater levels), but only to the extent that such efficient technologies are within the seniors’ “economic reach.”¹⁹² In those jurisdictions, it is unlikely that seniors would be required to deepen their wells as aquifer levels declined if such measures proved financially infeasible.¹⁹³

3. Paying for Water

Water markets. Under appropriate circumstances, water markets can be helpful in reallocating water among competing users so as to achieve economically efficient use.¹⁹⁴ In some cases, markets may be more politically feasible than regulation (as, for example, regulations that limit unreasonable or waste-

190. See *supra* notes 45–46 and accompanying text.

191. See *supra* Part II.A.2.

192. See, e.g., *Baker v. Ore-Ida Foods, Inc.*, 513 P.2d 627, 637 (Idaho 1973) (“[S]eniors are not entitled to relief if the junior appropriators, by pumping from their wells, force seniors to lower their pumps from historic levels to reasonable pumping levels.”); *Wayman v. Murray City Corp.*, 458 P.2d 861, 865 (Utah 1969) (“All users are required, when necessary, to employ reasonable and efficient means in taking their own waters.”).

193. See, e.g., *Fellhauer v. People* 447 P.2d 986, 994 (Colo. 1968) (“[Seniors] cannot be required to improve their extraction facilities beyond their economic reach, upon a consideration of all the factors involved.”).

194. See generally Jonathan H. Adler, *Water Rights, Markets, and Changing Ecological Conditions*, 42 ENVTL. L. 93, 101–02 (2012) (“Insofar as water rights are currently allocated to comparatively inefficient uses, water markets can help reallocate water to where there is greater need.”).

ful water use), because markets are voluntary and rely upon the willing participation of both the buyer and the seller.¹⁹⁵

However, as several scholars have noted, it is inaccurate to describe most water transfers (sales, leases, or options) as pure “free market” transactions.¹⁹⁶ Rather, the transfer of water rights almost always entails a change in the place of use, the season of use, the type of use, and/or the pattern of return flows.¹⁹⁷ As a result, water markets have the potential to impact third parties other than the seller and the buyer, and to subject other water users to negative externalities.¹⁹⁸ To protect the vested water rights of other users, many states impose a “no injury” rule on transfers.¹⁹⁹ Under this rule, even juniors are protected, because they are entitled to insist on the continuation of the stream conditions that existed at the time they first made their appropriations.²⁰⁰ To enforce the “no injury” rule or similar requirements, the states retain regulatory authority over water markets to limit the volume of water transferred to the historic consumptive use of water that either has already been developed and diverted from a stream for beneficial use or has been conserved.²⁰¹

The regulatory takings doctrine. In 2001, the landmark case *Tulare Lake Basin Water Storage District v. United States* held that federal water-use restrictions imposed under the Endangered Species Act (ESA) unconstitutionally deprived plaintiff irrigators of water deliveries.²⁰² The case involved the unique situation of water contracts held by California water districts, which entitled the districts to deliveries of a portion of

195. See *id.* at 95 (arguing that markets will provide more efficient conservation than government regulation).

196. See Joseph W. Dellapenna, *The Importance of Getting Names Right: The Myth of Markets for Water*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 317, 321 (2000); Amy Sinden, *The Tragedy of the Commons and the Myth of a Private Property Solution*, 78 U. COLO. L. REV. 533, 576–77 (2007).

197. See Sinden, *supra* note 196, at 578–79.

198. Doremus & Hanemann, *supra* note 134, at 63–68.

199. See Monique Dutkowsky, *Institutions, Third-Parties and Water Markets: An Analysis of the Role of Water Rights, the No-Injury Rule, and Water Code 386 on Water Markets in California Counties* 6 (Prop. and Env't Research Ctr., Workshop Series Paper, 2009), available at <http://www.perc.org/files/Dutkowsky%20water%20markets%20third%20parties.pdf>.

200. See *Farmers Highline Canal & Reservoir Co. v. City of Golden*, 272 P.2d 629, 631–32 (Colo. 1954).

201. See *generally* Dutkowsky, *supra* note 199, at 6 (discussing the effect of the no-injury rule).

202. *Tulare Lake Basin Water Storage Dist. v. United States*, 49 Fed. Cl. 313, 319–20 (2001).

the water yielded under water rights held by state and federal entities.²⁰³ *Tulare* represented the first case to hold that regulations under the ESA could work a regulatory taking requiring compensation.²⁰⁴ As a test case, it was unfortunately complicated by the contract/water right dichotomy, leading the court to conclude that the environmental regulation constituted a “physical” taking of property.²⁰⁵ The court later retreated from this position, but left a string of analytically confusing cases in its wake.²⁰⁶

C. IMAGINING A MIDDLE PATH

The variety of tools discussed in the previous Part work well under a range of narrowly tailored circumstances. But, as many have observed, the primacy of priority is breaking down as scarcity increases.²⁰⁷ In some cases, administrators refuse to curtail juniors, even when seniors are harmed.²⁰⁸ In other cases, juniors suffer, as in severely overappropriated basins where new water rights are either unavailable²⁰⁹ or represent near-worthless “paper water rights.”²¹⁰ Just as troubling, rhetoric seldom matches reality. We continue to employ the terminology of state water law regimes, even as federal laws and local decisions threaten to “eclipse” the states’ role.²¹¹ Some have called

203. See *id.* at 314–16.

204. Melinda Harm Benson, *The Tulare Case: Water Rights, the Endangered Species Act, and the Fifth Amendment*, 32 ENVTL. L. 551, 551 (2002) (asserting that “*Tulare* is the first published court decision holding that efforts to protect species under the Endangered Species Act constitute a taking of property in violation of the Fifth Amendment”).

205. *Tulare Lake Basin*, 49 Fed. Cl. at 319–20.

206. See KLEIN ET AL., *supra* note 25, at 1059 (asserting that after *Tulare*, “the courts continued to struggle with the distinction between physical and regulatory takings, and the distinction between takings and contract violations”). See generally John D. Echeverria, *Is Regulation of Water a Constitutional Taking?*, 11 VT. J. ENVTL. L. 579 (2010) (examining the U.S. Supreme Court’s regulatory takings doctrine decisions); Mark Fenster, *The Stubborn Incoherence of Regulatory Takings*, 28 STAN. ENVTL. L.J. 525 (2009) (same); Robert Meltz, *Takings Law Today: A Primer for the Perplexed*, 34 ECOL. L.Q. 307 (2007) (same).

207. See *supra* Part I.C.

208. See Hobbs, *supra* note 69, at 43–44.

209. See Bd. of the Cnty. Comm’rs of Arapahoe v. Crystal Creek Homeowners’ Ass’n, 14 P.3d 325, 333 (Colo. 2000) (precluding the grant of new water rights where unappropriated supplies are no longer “available” for appropriation).

210. See *supra* notes 45–50 and accompanying text.

211. See Getches, *The Metamorphosis*, *supra* note 55, at 11.

for a middle path, primarily in the context of voluntary negotiations.²¹² Seniors would not be allowed to lock up water resources in perpetuity, but neither would they be demonized for continuing practices once highly valued by society.²¹³ Juniors would have an opportunity, like their predecessors, to acquire water rights.²¹⁴ They would not bear the entire cost of reallocating water to critical new uses, such as protection of species and habitat or maintaining water in place for aesthetic and recreational enjoyment.²¹⁵ Most importantly, we would all share the pain of modernizing the system to reflect current values. The outlook need not be bleak, as one commentator suggested, because “[t]he possibilities of reallocation without undue hardship are so great in part because the waste and excessive use are so great.”²¹⁶ The next Part considers one promising option for a negotiated middle path: water bankruptcy.

III. A NEW TOOL: WATER BANKRUPTCY

Whether acknowledged or not, we have already embarked down a middle path of water management, one in both seniors and juniors make some compromises in the quest for sustainability, peace, and certainty. Numerous states have convened stakeholder groups to explore what some have called “out-of-the-box” solutions to watershed-specific problems.²¹⁷ Seniors, juniors, regulators, scientists, farmers, fishers, environmentalists, and neighbors have all begun to participate in deciding their common water future.²¹⁸

Although increasingly prevalent, the stakeholder process poses at least three challenges for participants. First, the willingness to engage in alternative dispute resolution constitutes, at least implicitly, an admission that the current system is not working or is otherwise unsustainable. But some participants, particularly the holders of senior water rights, may fear that such admission compromises the strength of their claims and

212. See WILKINSON, *CROSSING THE NEXT MERIDIAN*, *supra* note 27, at 286–92.

213. See *id.* at 289.

214. See *id.* at 290.

215. See *id.*

216. *Id.* at 287.

217. Getches, *The Metamorphosis*, *supra* note 55, at 55–56 (describing state encouragement, through legislation and otherwise, of “watershed-based decision making”).

218. *Id.* at 42–51 (discussing “outside-the-box” reforms, including “macro-watershed initiatives”).

their bargaining position. Although showing up at a negotiation suggests a willingness to compromise, those who hold the oldest water rights will, understandably, be reluctant to affirmatively relinquish priority as a decisional principle and to substitute a pervasive ethic of shared loss.²¹⁹ As Professor Tarlock has observed, “cooperation and ad hoc sharing do not come easily to water users. Alternative allocation systems usually emerge only when a significant group of water users thinks that cooperation will produce a superior result to the likely legal . . . allocation of the resource.”²²⁰ As a second challenge, a comprehensive resolution of competing claims within a particular watershed requires a similarly comprehensive cataloging of water supply, water demand, actual water use, and existing water rights, permits, and contracts. And yet historically, states and water users—motivated by pragmatic, economic, and tactical concerns—have resisted “showing their hand” and providing such data.²²¹ As a third challenge, negotiators must make room at the table for non-traditional participants such as advocates for environmental, wildlife, and recreational interests. This forces the group to address tough questions about the interrelationship of environmental and human concerns.²²²

219. As Professor Tarlock has explained, such stakeholder groups are bargaining in the shadow of priority. Tarlock, *The Future*, *supra* note 91, at 771 (describing prior appropriation as a “shadow doctrine” under which “[w]ater rights became more of a general water entitlement to use water rather than the right to a specific quantity used in a non-wasteful manner as specified by the formal doctrine”). He elaborates, “[p]riority’s modern significance lies in the threat of enforcement rather than the actual enforcement because it encourages water users to cooperate either to reduce the risk of enforcement to as close to zero as possible or to share more equitably the burdens of shortages.” Tarlock, *Rule, Principle, or Rhetoric?*, *supra* note 108, at 882–83.

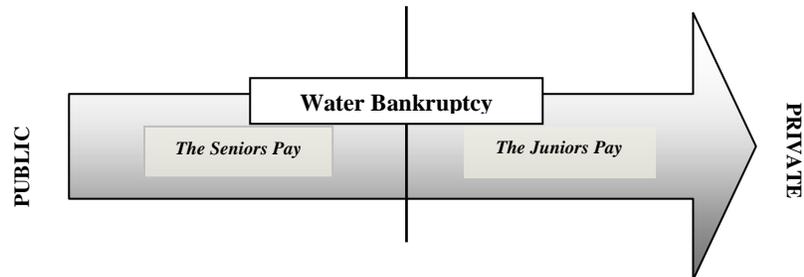
220. Tarlock, *Rule, Principle, or Rhetoric?*, *supra* note 108, at 882–83.

221. See, e.g., Sheila M. Olmstead & Robert N. Stavins, *Managing Water Demand: Price vs. Non-Price Conservation Programs* 23 (Pioneer Inst., White Paper No. 39, 2007), available at http://www.hks.harvard.edu/fs/rstavins/Monographs_&_Reports/Pioneer_Olmstead_Stavins_Water.pdf (discussing the difficulties of obtaining water demand data in agricultural and industrial sectors).

222. As the U.S. Department of the Interior explained:

A common element of many . . . potential crises . . . is the need to provide for water supply for people, cities, and farms in a manner that also attains the goals of the federal Endangered Species Act. Success in meeting this challenge almost always requires a collaborative effort between stakeholders, as is demonstrated by the success of the Upper Colorado River - San Juan Endangered Fish Recovery Programs.

U.S. DEP’T OF THE INTERIOR, WATER 2025: PREVENTING CRISES AND CONFLICT IN THE WEST 20 (2003), available at <http://biodiversity.ca.gov/Meetings/archive/water03/water2025.pdf>. *Water 2025* has been incorporated into the



To provide guidance for this emerging middle collaborative path, this Part introduces the new concept of “water bankruptcy.” By drawing an analogy to the well-developed principles of federal bankruptcy law, this Article offers a systematic, regularized way of thinking about a collection of place-specific, sui generis processes independently springing up across the West and beyond.²²³ Reducing the need for collaborators to invent a process and conceptual basis anew in each case, this Article offers a common vocabulary and framework to encourage the development of an interstate knowledge base of best practices for collaborative processes. It bears repeating that this Article is not advocating the widespread replacement of state administration with stakeholder consensus, nor does it advocate the wholesale substitution of sharing for priority. Rather, the suggestion draws on principles of traditional bankruptcy to provide a systematic framework for willing collaborators who have voluntarily turned away from traditional processes and toward negotiation to resolve their water conflicts. Bankruptcy and

Water Conservation Initiative, which has been superseded by the Bureau of Reclamation’s “WaterSMART” program. See *WaterSMART Reclamation: Managing Water in the West: Water 2025*, U.S. DEPT OF INTERIOR, <http://www.usbr.gov/WaterSMART/> (last visited Nov. 3, 2012).

223. Watershed groups include: the Puget Sound Partnership, <http://www.psp.wa.gov/> (last visited Nov. 3, 2012); the Cienega Watershed Partnership, <http://www.cienega.org/who-we-are/svpp-forum/> (last visited Nov. 3, 2012); the Upper Colorado River Endangered Fish Recovery Program, <http://www.coloradoriverrecovery.org/general-information/about.html> (last visited Nov. 3, 2012); the Lower Colorado Multi-Species Conservation Program, <http://www.lcrmscp.gov/> (last visited Nov. 3, 2012); and the Great Lakes Commission, <http://www.glc.org/> (last visited Nov. 3, 2012). See generally James L. Huffman, *The Federal Role in Water Resource Management*, 17 N.Y.U. ENVTL. L.J. 669, 669, 689 (2008) (“Historically the solution to growing demand was increased supply through storage or transport. Today the only solution in many cases is shifting water from one use to another. Absent effective local and interstate water markets, these shifts in water use can only be accomplished through the political process. That is where the collaboration part of the modern approach comes in.”).

water law negotiations face a remarkably similar challenge: the situation where debts exceed assets, whether financial or hydrologic. Both seek similar goals: a fresh start for the debtor and a fair and methodical resolution for the creditors. Both are grounded in priority, but recognize important, competing values. The concepts—and often, the terminology—are strikingly similar: both systems contemplate priorities, preferences, risk, and scarcity.

The following sections provide a brief overview of traditional bankruptcy principles, focusing on those that have a clear counterpart within the realm of water law negotiations. Then, the analysis turns to water bankruptcy, examining its mechanics in detail and noting three contexts for which it is particularly well suited. Next, the Article presents a case study—the California Bay Delta. Reviewing decades of unsuccessful efforts in the region, the discussion considers how bankruptcy concepts could provide a useful and practical roadmap for structuring that collaborative process. Finally, the analysis teases out the four primary benefits of the water bankruptcy concept. In sum, the intuitive and apt comparison to bankruptcy law suggests a way forward for water-starved communities at a stalemate.

A. BANKRUPTCY: THE TRADITIONAL CONTEXT

Bankruptcy is a mechanism designed to give debtors a “fresh start” and to pay off debts in an orderly fashion.²²⁴ As the United States Supreme Court explained in 1934, “[o]ne of the primary purposes of the bankruptcy act is to ‘relieve the honest debtor from the weight of oppressive indebtedness and permit him to start afresh’”²²⁵ Bankruptcy offers fertile ground for the development of procedures to guide the reallocation of water by stakeholder groups. Like water law, bankruptcy relies on state law to determine the contours of relevant property rights, such as the debtor’s property and the creditor’s claims.²²⁶

224. See *Bankruptcy*, UNITED STATES COURTS, <http://www.uscourts.gov/FederalCourts/Bankruptcy.aspx> (last visited Nov. 3, 2012).

225. *Local Loan Co. v. Hunt*, 292 U.S. 234, 244 (1934) (quoting *Williams v. U.S. Fidelity & Guar. Co.*, 236 U.S. 549, 554–55 (1915)). See generally DAVID G. EPSTEIN, *BANKRUPTCY AND RELATED LAW IN A NUTSHELL* (7th ed. 2005); ADMIN. OFFICE OF THE U. S. COURTS, BANKR. JUDGES DIV., *BANKRUPTCY BASICS* (rev. 3d ed. 2011) [hereinafter *BANKRUPTCY BASICS*], available at <http://www.uscourts.gov/Viewer.aspx?doc=/uscourts/FederalCourts/BankruptcyResources/bankbasics2011.pdf>.

226. EPSTEIN, *supra* note 225, at 123 (“Unless some federal interest re-

The Bankruptcy Code establishes six types of bankruptcy mechanisms.²²⁷ The most promising avenue for comparison lies in Chapter 9 (and various provisions of Chapter 11 specifically incorporated into Chapter 9²²⁸), which applies to municipalities suffering from financial distress.²²⁹ Overall, Chapter 9 provides municipalities with a stronger measure of control than that provided to debtors under other provisions of the Code.²³⁰ Chapter 9 bankruptcy filings are rare, representing fewer than five hundred cases since congressional authorization in 1937.²³¹ But such filings can be noteworthy, as in the case of Orange County, California's 1994 filing, which involved millions of dollars of debt.²³²

quires a different result, there is no reason why [property rights in the assets of a bankrupt's estate] should be analyzed differently simply because an interested party is involved in a bankruptcy proceeding.") (quoting *Butner v. United States*, 440 U.S. 48, 54 (1979)). Federal law also plays an important role in bankruptcy, providing uniform, guiding principles and procedures. *See* Bankruptcy Reform Act of 1978, 11 U.S.C. §§ 101–1330 (2006). Although federal law is less prominent in the context of water law, its importance has been increasing to the point that some commentators note its potential to "eclipse" state water law. *See supra* notes 118–24 and accompanying text.

227. BANKRUPTCY BASICS, *supra* note 225, at 6. Four types of bankruptcy likely contain little that is applicable by analogy to the reallocation of water rights: (1) Chapter 7 liquidation (generally not available to governmental debtors), *see id.* at 14; (2) Chapter 12, adjustment of debts of a family farmer or fisherman with regular annual income, 11 U.S.C. §§ 1201–1231; (3) Chapter 13, adjustment of debts of an individual with regular income, 11 U.S.C. §§ 1301–1330; and (4) Chapter 15, ancillary and other cross-border cases (involving situation where debtor or its property is subject to the law of a foreign country), 11 U.S.C. §§ 1501–1532.

228. Chapter 11 provides for the reorganization of corporations (and the repayment of its creditors) that wish to continue operating. *See* 11 U.S.C. §§ 1121–29. Chapter 9 specifically incorporates by reference certain provisions of Chapter 11. *Id.* § 901 (applicability of other sections of this title). Most important to judicial confirmation of a plan for reorganization is 11 U.S.C. § 1129. *See* BANKRUPTCY BASICS, *supra* note 225, at 55.

229. *See* 11 U.S.C. §§ 901–946.

230. As the Bankruptcy Judges Division explains:

The role of creditors is more limited in chapter 9 than in other cases. There is no first meeting of creditors, and creditors may not propose competing plans. If certain requirements are met, the debtor's plan is binding on dissenting creditors. The chapter 9 debtor has more freedom to operate without court-imposed restrictions.

BANKRUPTCY BASICS, *supra* note 225, at 52; *see also* 11 U.S.C. § 1129 (provisions concerning judicial confirmation of a plan for reorganization).

231. BANKRUPTCY BASICS, *supra* note 225, at 49.

232. *Id.*

Title 11 defines municipality as a “political subdivision or public agency or instrumentality of a State,”²³³ a definition that fits state water agencies that have over-promised scarce water supplies.²³⁴ To invoke the protection of Chapter 9, a municipality must be “insolvent,”²³⁵ which means generally that it is “unable to pay its debts as they become due”²³⁶—a situation remarkably similar to the lot of state water agencies that have overallocated water rights in a particular watershed or aquifer.²³⁷ This type of bankruptcy provides a municipality with the opportunity to negotiate and develop a plan to reorganize and adjust its debts,²³⁸ a direct analogue to the stakeholder negotiations and water reallocations already familiar in the context of water law.²³⁹ The municipality has broad powers, including the ability to reject executory contracts,²⁴⁰ which parallel water rights and contracts calling for deliveries of water in the future.²⁴¹

To invoke bankruptcy protection, a municipality must file a petition for relief.²⁴² This triggers an automatic stay that prohibits creditors from seeking to enforce their claims against the debtor during the pendency of the bankruptcy proceeding.²⁴³ The municipal debtor must file a detailed list of its creditors and its debts.²⁴⁴ Creditors, in turn, must provide specific proofs of their claims or interests if their debts are disputed, contingent, or unliquidated.²⁴⁵

The debtor’s plan will recognize several classifications of interests.²⁴⁶ First, the plan will distinguish between “unse-

233. 11 U.S.C. § 101(40).

234. For a discussion of overappropriation, see *supra* Part I.B.

235. 11 U.S.C. § 109(c)(3).

236. *Id.* § 101(32)(C)(ii). Municipal insolvency also includes the financial condition where “the municipality is generally not paying its debts as they become due unless such debts are the subject of a bona fide dispute.” *Id.* § 101(32)(C)(i).

237. See *supra* Part I.B.

238. See 11 U.S.C. §§ 941–946; see also 11 U.S.C. § 901 (making various other code sections applicable to chapter 9 bankruptcy).

239. See *supra* notes 217–22 and accompanying text.

240. BANKRUPTCY BASICS, *supra* note 225, at 53.

241. See *supra* notes 3–5 and accompanying text.

242. 11 U.S.C. §§ 303, 901(a).

243. *Id.* §§ 362, 922.

244. See *id.* § 924; FED. R. BANKR. P. 1007.

245. See 11 U.S.C. § 925.

246. See *id.* § 1122.

cured” and “secured” debts.²⁴⁷ To qualify as a secured creditor (such as the holder of a mortgage), the claimant must be owed a debt that can be satisfied by the liquidation of a specific asset.²⁴⁸ In contrast, an unsecured creditor holds a “claim or debt for which a creditor holds no special assurance of payment.”²⁴⁹ Further, unsecured claims involve credit that “was extended based solely upon the creditor’s assessment of the debtor’s future ability to pay.”²⁵⁰

The debtor’s plan will also separate out claims that are unsecured, yet entitled to special treatment as “priorities” or “preferences.”²⁵¹ These priorities represent a codification of interests deemed important to society, such as the payment of claims for domestic support obligations and contributions to an employee benefit plan.²⁵² Such priorities also favor essential pragmatic functions, such as the payment of some administrative expenses of bankruptcy.²⁵³ Importantly, consistent with the label “priority,” the special status of these interests is correlated to the importance of the interest and not to its historical vintage.²⁵⁴

247. See generally *id.* § 506(a)(1) (section on “determination of secured status”); BANKRUPTCY BASICS, *supra* note 225, at 75 (defining “secured debt” as “[d]ebt backed by a mortgage, pledge of collateral, or other lien; debt for which the creditor has the right to pursue *specific pledged property* upon default” (emphasis added)).

248. See BANKRUPTCY BASICS, *supra* note 225, at 75.

249. *Id.* at 76. Unsecured claims can also arise out of some violation of legal rights, as in tort. A related concept is that of “undersecured claim[s]” representing a “debt secured by property that is worth less than the full amount of the debt.” *Id.*

250. *Id.*

251. See 11 U.S.C. § 507(a).

252. See *id.* §§ 507(a)(4), 507(a)(7).

253. See *id.* § 507(a)(1).

254. Priority unsecured claims must be paid in full before ordinary unsecured claims receive anything. See BANKRUPTCY BASICS, *supra* note 225, at 75 (defining “priority claim” as an “unsecured claim that is entitled to be paid ahead of other unsecured claims that are not entitled to priority status” and explaining that “[p]riority refers to the order in which these unsecured claims are to be paid”). Further, “priority” refers to:

The Bankruptcy Code’s statutory ranking of unsecured claims that determines the order in which unsecured claims will be paid if there is not enough money to pay all unsecured claims in full. For example, under the Bankruptcy Code’s priority scheme, money owed to the case trustee or for prepetition alimony and/or child support must be paid in full before any general unsecured debt (i.e. trade debt or credit card debt) is paid.

Id.

Chapter 9's approval of an insolvent municipality's negotiated plan to reorganize and adjust its debts provides guidance to water-stakeholder groups. Chapter 9 gives significant weight to the municipality's suggested plan for reorganization, a focus appropriate in the context of water administrators' special expertise in water allocation.²⁵⁵ The bankruptcy court must confirm the municipality's reorganization plan if it satisfies the general requirements set out in the Code.²⁵⁶ Among other things, the plan must be "feasible" and "in the best interest of creditors,"²⁵⁷ which generally means that the municipality has made a "reasonable effort" to place its creditors in a better position than they would be if the bankruptcy case were dismissed.²⁵⁸ If creditors' claims under the plan are "impaired,"²⁵⁹ then the plan cannot be confirmed unless at least one class of impaired claims accepts the plan.²⁶⁰ The plan for reorganization may provide for the reduction, impairment, alteration, and/or pro rata payment of creditors' claims by repaying debts under a specified "cents on the dollar" formula.²⁶¹ Bankruptcy also allows for the subordination of senior rights to junior ones. This occurs "in the interest of confirmation of a plan and rehabilitation of the debtor."²⁶² In addition, municipalities may reject, subject to court approval, executory contracts under which all duties have not yet been performed.²⁶³

B. BANKRUPTCY: THE WATER CONTEXT

Traditional bankruptcy principles offer invaluable guidance to water stakeholder groups. Just as the traditional process seeks to reorganize the financial operations of distressed individuals, corporations, and municipalities to produce a

255. See *supra* note 230 and accompanying text; see also 11 U.S.C. § 1129 (provisions concerning judicial confirmation of a plan for reorganization).

256. See 11 U.S.C. §§ 943(b), 1129.

257. *Id.* § 943(b)(7).

258. See BANKRUPTCY BASICS, *supra* note 225, at 56.

259. "Impaired" claims, generally, are those whose legal, equitable, and contractual rights have been altered by the bankruptcy plan. See generally 11 U.S.C. § 1124.

260. See 11 U.S.C. § 1129(a)(10). But see *id.* § 1129(b)(1) (articulating "cram down" provision).

261. See *id.* § 1123(b)(1) (providing that a plan may "impair or leave unimpaired any class of claims, secured or unsecured, or of interests") and § 1124, both made applicable to Chapter 9 by 11 U.S.C. § 901.

262. S. REP. NO. 95-989, § 510, 95th Cong. (1978); see also 11 U.S.C. § 510(a) (recognizing enforceability of subordination agreements).

263. See BANKRUPTCY BASICS, *supra* note 225, at 53.

healthier and more sustainable economic future, so also might water bankruptcy reorganize the liquid assets of a region to produce healthier and more sustainable watersheds. The following subsections highlight, respectively, the mechanics of water bankruptcy and three contexts for which it is best suited.

1. The Mechanics of Water Bankruptcy

Declaration of insolvency. To qualify for the protection of bankruptcy, a municipality must be “insolvent,” or unable to pay its debts as they become due.²⁶⁴ In its petition for relief, a water bankrupt agency would likely demonstrate that a particular watershed or aquifer is over-appropriated to a degree that both agency and stakeholders deem unacceptable.²⁶⁵ This could occur when a significant number of water users, including those holding senior priorities, agree that the current system is on the verge of collapse.²⁶⁶ In some cases, state lawmakers may effectively issue a declaration of insolvency and petition for relief through legislation calling for widespread water reform to forestall the collapse of the entire system.²⁶⁷

Articulation of goals. The goal of traditional bankruptcy is to give the debtor a fresh start through a systematic and comprehensive reorganization of its debts.²⁶⁸ For meaningful discussions among water stakeholders, there must be widespread frustration with the current allocation of water sufficient to trigger a negotiated departure from priority allocation.²⁶⁹ That is, the collaborators must agree that they are seeking a sustainable allocation of water through a non-traditional approach and that they are willing to bargain away some benefits of priority in exchange for other perceived advantages, such as security or sustainability.²⁷⁰ In some cases, state legislation might articulate collaborative goals, rather than a winner-takes-all approach to the resolution of competing claims.²⁷¹ Lacking such a consensus, the water users’ complaints could be resolved

264. See *supra* note 235–36 and accompanying text.

265. See *supra* Part I.B.

266. See *supra* note 219.

267. The Sacramento-San Joaquin Delta Reform Act of 2009 provides an example of such legislation. See *infra* Part III.C.2.

268. See *supra* note 224 and accompanying text.

269. See *supra* note 219.

270. See *infra* Part III.C.2.

271. For example, in 2009 California’s state regulatory agencies called for widespread reform to achieve two legislatively-articulated “coequal goals.” See *infra* Part III.C.2.

more efficiently through traditional channels of judicial and administration dispute resolution.

Listing of debts and creditors. To support its petition for relief, a traditional debtor must provide a list of its creditors and its debts.²⁷² Likewise, insolvent state water agencies would be required to produce a detailed list of all valid water rights, including the volumes of appropriation, purposes of use, places of use, and identity of the water users. In jurisdictions that do not keep detailed records of water rights and beneficial use, this requirement would be difficult to satisfy, and a negotiated list of debts and creditors might be produced as a substitute for official state records.

Providing proof of claims. Would-be creditors must submit specific proofs of claim in the context of traditional bankruptcy if their claims are “disputed, contingent, or unliquidated.”²⁷³ Similarly, creditors in water bankruptcy would be required to demonstrate the extent to which they had actually put their water rights to beneficial, non-wasteful, consumptive use.²⁷⁴ The difference between the face value of water rights and the volume of historic consumptive use would be subject potentially to abandonment.²⁷⁵ In addition, such proofs would be required of those holding “conditional” water rights, as the counterpart to traditional contingent claims.²⁷⁶

Distribution of assets. Traditional bankruptcy classifies valid interests as “secured” or “unsecured.”²⁷⁷ The former will be satisfied in order of temporal priority by the liquidation of a specific asset (such as a home secured by a mortgage).²⁷⁸ Unsecured claims, in contrast, may receive pro rata distributions in partial satisfaction of the debt.²⁷⁹ Unsecured claimants, therefore, will share the loss regardless of the year in which their claims arose. In the context of water bankruptcy, the distinction between secured and unsecured claims provides rich ground for stakeholder discussion and negotiation. Senior appropriators would likely argue that their water rights consti-

272. See *supra* note 244 and accompanying text.

273. See *supra* note 245 and accompanying text.

274. See *supra* notes 172–76 and accompanying text.

275. See GETCHES, NUTSHELL *supra* note 24.

276. See *id.*

277. See *supra* note 247 and accompanying text.

278. See *id.*

279. See *supra* notes 247–50 and accompanying text.

tute secured claims entitled to early satisfaction.²⁸⁰ Environmental interests might agree, and further claim that environmental uses should be recognized as senior claims that predate all others.²⁸¹ Junior appropriators, in contrast, might assert that water rights are unsecured claims because they are usufructuary in nature, and not attached to any particular molecule of water for their satisfaction.²⁸² Further, juniors might argue that water rights relying on future precipitation (including most sources other than aquifers gradually filled over the course of years, decades, or even centuries) constitute a natural counterpart to unsecured financial claims that depend on debtors' future ability to pay.²⁸³ As a consequence, if water rights constitute secured claims, then the distribution of assets may follow a scheme that mirrors the prior appropriation doctrine; but if water rights are treated as unsecured claims, then the pro rata distribution of assets might resemble riparianism,²⁸⁴ rather than the priority doctrine.

The debtor's plan for reorganization may elect to provide special treatment for important social or pragmatic interests labeled as "preferences."²⁸⁵ In parallel fashion, water bankruptcy stakeholders must determine whether one type of human use (agricultural irrigation or urban water supply, for example) should be given preferential treatment over others. Similarly, environmental stakeholders would likely make the case that environmental debts such as the protection of minimum stream flows should be considered as important to society as the preferences protected in bankruptcy.²⁸⁶ In support of this claim, environmentalists might argue that base level stream flows are essential to wet the riverbed and to facilitate physical deliver-

280. See *supra* note 138 and accompanying text.

281. See *Se. Colo. Water Conservancy Dist. v. Shelton Farms, Inc.*, 529 P.2d 1321, 1325 (Colo. 1974) (rejecting argument that water-loving trees known as "phreatophytes" predated senior water rights in the Arkansas River watershed).

282. See *supra* note 25 and accompanying text.

283. See *supra* note 250 and accompanying text.

284. See *supra* notes 66, 279–81 and accompanying text.

285. See *supra* notes 251–54 and accompanying text.

286. See *supra* note 281 and accompanying text. In some cases, western water law already elevates the protection of stream flows above other interests. See, e.g., Michael F. Browning, *Instream Flow Water Rights in the Western States and Provinces*, 56 ROCKY MTN. MIN. L. INST. 9–1, 9–29 (2010) (describing the concept of "upside-down" water rights, which "quantify how much water should be allowed to be diverted for development, and protect all remaining flows" for instream and environmental purposes).

ies of water, without which the entire water system might collapse.²⁸⁷ Thus, they would conclude that instream flows and other environmental debts should be considered as important to society as the priorities and preferences protected in bankruptcy.

2. The Context of Water Bankruptcy

There are at least three contexts in which water bankruptcy could provide invaluable guidance to water users facing seemingly insurmountable problems. As an essential prerequisite, there must be widespread acknowledgement that the current system is unsustainable and, indeed, that the entire watershed may be on the verge of collapse.²⁸⁸ Equally important, stakeholders must come willingly and voluntarily to negotiate a work-around of the priority doctrine in the hope of achieving a more certain, stable, and satisfactory allocation of limited water resources.²⁸⁹

Allocating groundwater. The priority doctrine has proved unequal to the task of groundwater administration.²⁹⁰ Even the stalwart appropriative jurisdiction of Colorado does not apply the doctrine strictly to its groundwater resources: rather, Colorado modifies the prior appropriation doctrine “to permit the full economic development” of so-called “designated” groundwater resources.²⁹¹ Additionally, in the case of “nontributary” groundwater, Colorado departs from the priority doctrine entirely, instead allocating the resource on the basis of ownership of the overlying land.²⁹²

Today, in various aquifers, there is widespread agreement that current practices are not sustainable. When surface water supplies are inadequate in the seven-state Colorado River ba-

287. See *supra* note 138 and accompanying text.

288. See *supra* note 18.

289. See *id.*

290. See John D. Leshy, *The Federal Role in Managing the Nation's Groundwater*, 11 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 1, 2 (2004) (“State law generally has not been adequate to the task of managing the nation's groundwater” and it remains a subject about which “‘misinformation, misunderstanding, and mysticism’ abound, and the law that governs it is murky.” (quoting NAT'L WATER COMM'N, WATER POLICIES FOR THE FUTURE 230 (1973))); see also Joseph L. Sax, *We Don't Do Groundwater: A Morsel of California Legal History*, 6 U. DENV. WATER L. REV. 269, 271 (2003).

291. See COLO. REV. STAT. § 37-90-102(1) (2011).

292. See *id.* § 37-90-102(2).

sin,²⁹³ for example, water users make up the difference by pumping groundwater. Because groundwater supplies typically are not fully replenished annually, such pumping is unsustainable. As concluded by a 2011 study, “In the U.S. Southwest . . . there is less rain and snowfall each year than the amount of water used in the region. Today that shortfall is made up for by pumping groundwater, well beyond the sustainable rate.”²⁹⁴ The reports concludes ominously, “[a]dd the impacts of growing population and incomes, and the Southwest will face a major water crisis in the coming decades.”²⁹⁵ Other major aquifers face similar threats from unsustainable practices, including portions of the Ogallala Aquifer beneath Kansas and Texas,²⁹⁶ Nebraska groundwater,²⁹⁷ and the aquifer underlying the Central Valley of California.²⁹⁸

Allocating interstate rivers. The Colorado River Basin provides the paradigmatic example of a watershed amenable to principles of water bankruptcy. In 1922, the seven states of the Colorado River basin entered into the Colorado River Com-

293. See *infra* note 312 and accompanying text.

294. ANDREW FREEDMAN, *Report Warns of Worsening Western Water Crisis*, CLIMATE CENTRAL (Feb. 14, 2011), <http://www.climatecentral.org/blogs/report-warns-of-worsening-western-water-crisis/> (quoting FRANK ACKERMAN & ELIZABETH A. STANTON, STOCKHOLM ENV'T INST., *THE LAST DROP: CLIMATE CHANGE AND THE SOUTHWEST WATER CRISIS 4* (2011), available at <http://sei-international.org/publications?pid=1843>).

295. *Id.*

296. See *Groundwater Depletion in Semiarid Regions of Texas and California Threatens U.S. Food Security*, UNIV. OF TEXAS (May 29, 2012), <http://www.utexas.edu/news/2012/05/29/groundwater/> (describing results of study published in *Proceedings of the National Academy of Sciences* which, inter alia, predicts that current rates of agricultural irrigation in portions of the High Plains are unsustainable for more than another few decades); see also Pete Spotts, *Southern Great Plains Could Run Out of Groundwater in 30 Years, Study Finds*, THE CHRISTIAN SCIENCE MONITOR, May 30, 2012, available at <http://www.csmonitor.com/Environment/2012/0530/Southern-Great-Plains-could-run-out-of-groundwater-in-30-years-study-finds>.

297. See J. David Aiken, *The Western Common Law of Tributary Groundwater: Implications for Nebraska*, 84 NEB. L. REV. 541, 542 (2004) (“Nebraska water law is on a collision course with reality. For decades Nebraska judges and water policy makers have ignored the hydrologic connection between surface water and tributary groundwater, the groundwater that provides the stream’s base flow.”).

298. See Spotts, *supra* note 296. The problem is not confined to western aquifers. See generally Patrik Jonsson, *Drought: Farmers Dig Deeper, Water Tables Drop, Competition Heats Up: A Drier “New Normal” Is Forcing U.S. Farmers to Dig Deeper Wells*, CHRISTIAN SCIENCE MONITOR, Aug. 8, 2012 (describing aquifer declines up to forty feet in Georgia due, in significant part, to increased agricultural irrigation).

pact,²⁹⁹ an agreement intended to allocate the great river in a way that would satisfy the present and projected needs of both the Upper Division states (Colorado, New Mexico, Utah, and Wyoming)³⁰⁰ and the Lower Division states (Arizona, California, and Nevada).³⁰¹ The Upper Division states joined the negotiation out of fear that the western doctrine of prior appropriation—the basis of water allocation within each state’s borders—would be applied also to the interstate allocation of the river.³⁰² Because the upper states were slower to develop than their downstream sisters, application of the priority doctrine would assign less-reliable, junior water rights to the upstream states.³⁰³ The downstream states, for their part, sought the political cooperation of their upstream neighbors in lobbying Congress for the federal funding necessary to construct dams and reservoirs on the lower Colorado River, infrastructure that would provide a direct benefit to California irrigators.³⁰⁴ Thus, all states entered into negotiations voluntarily, because they worried that the status quo would not be sustainable in light of their interests. As the upper states hoped, the resulting agreement rejected the interstate application of the priority doctrine. Instead, the parties allocated the river’s flow roughly equally

299. See U.S. DEP’T OF THE INTERIOR, BUREAU OF RECLAMATION, COLORADO RIVER COMPACT (1922), available at <http://www.usbr.gov/lc/region/g1000/pdfiles/crcompact.pdf>.

300. See *id.* at Article II(c). In 1948, the Upper Basin states further allocated their share of the river among themselves. U.S. DEP’T OF THE INTERIOR, BUREAU OF RECLAMATION, UPPER COLORADO RIVER BASIN COMPACT (1948), available at <http://www.usbr.gov/lc/region/g1000/pdfiles/ucbsnact.pdf>.

301. See COLORADO RIVER COMPACT, *supra* note 299, at Article II(d). In 1928, legislation authorizing the Boulder Canyon Project effectively allocated the Colorado River among the Lower Basin states. See *Arizona v. California*, 283 U.S. 423, 448–49 (1931) (beginning a line of numerous related Supreme Court cases with the same name). See generally U.S. DEP’T OF THE INTERIOR, BUREAU OF RECLAMATION, THE ARIZONA V. CALIFORNIA U.S. SUPREME COURT DECISION OF 1964, <http://www.usbr.gov/lc/region/pao/lawofrvr.html> (documenting current seniors with private claims and each state’s allocation of water beginning 1964) (last visited Nov. 3, 2012).

302. See James S. Lochhead, *An Upper Basin Perspective on California’s Claims to Water from the Colorado River Part I: The Law of the River*, 4 U. DENV. WATER L. REV. 290, 297–99 (2001) (arguing that the Upper Basin states feared that Supreme Court precedent would allow the Lower Basin states to “obtain permanent preferential rights to water simply by developing faster” and that they entered into a compact to “eliminate the application of the prior appropriation doctrine on an interstate basis”).

303. See *id.* at 297; see, e.g., *Wyoming v. Colorado*, 259 U.S. 419, 502 (1922) (applying the doctrine of prior appropriation to allocate the use of an interstate river among two states that applied the doctrine on an intrastate basis).

304. See Lochhead, *supra* note 302, at 293–94.

among upstream and downstream states.³⁰⁵ In particular, the upper states pledged to deliver a rolling average of 7.5 million acre-feet (maf) of water each year to their downstream sister states.³⁰⁶

This arrangement might have worked well enough, but for an error of storied proportions: the negotiators assumed that river flows of their era (about 16.4 maf, which provided a comfortable margin beyond the Upper Division's entitlement to 7.5 maf and the Lower Division's entitlement to another 7.5 maf) were representative and would continue into the indefinite future.³⁰⁷ Unfortunately, this assumption was not accurate,³⁰⁸ and the Compact stems from an overly-optimistic, inflated estimate of actual river flows, which plagued the states for almost a century. In 2007, when drought threatened the sustainability of the seven states' water supply from the Colorado, they again turned to negotiation rather than the priority doctrine.³⁰⁹ The result was an agreement executed by the Secretary of the Interior and the seven states that set forth a twenty-year plan for conserving, sharing, and cooperating during drought.³¹⁰ According to one water manager, the seven states have perfected a cooperative ethic of interstate sharing that supplants the doctrine

305. See COLORADO RIVER COMPACT, *supra* note 299, at Article III(a) (apportioning in perpetuity the exclusive beneficial consumptive use of 7.5 million acre-feet of water per annum to the Upper Basin and of 7.5 million acre-feet of water per annum to the Lower Basin, with certain specified adjustments).

306. See *id.* at Article III(d). In 1944, the United States pledged to allocate 1.5 million acre-feet annually to Mexico. See U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, UTILIZATION OF WATERS OF THE COLORADO AND TIJUANA RIVERS AND OF THE RIO GRANDE, TREATY BETWEEN THE UNITED STATES OF AMERICA AND MEXICO, Article 10(a) (1944), available at <http://www.usbr.gov/lc/region/g1000/pdfiles/mextrety.pdf>.

307. See COLORADO RIVER COMPACT, *supra* note 299, at Article III(a).

308. See Robert W. Adler, *Revisiting the Colorado River Compact: Time for a Change?*, 28 J. LAND RESOURCES & ENVTL. L. 19, 30 (2008) (explaining that the basin states negotiated the compact based on the 1899–1920 hydrologic record when annual Colorado River flows averaged 16.5 million acre feet, a period much wetter than the rest of the twentieth century, during which average annual river flows declined to 15 maf (1896–2004) and to 14 maf (1922–1982)).

309. See generally DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, RECORD OF DECISION: COLORADO RIVER INTERIM GUIDELINES FOR LOWER BASIN SHORTAGES AND THE COORDINATED OPERATIONS FOR LAKE POWELL AND LAKE MEAD 1 (Dec. 13, 2007) available at <http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf>.

310. See *id.* at 3.

of priority practiced within their borders³¹¹—an approach that is consistent with the principles of water bankruptcy.

More recently, the impacts of climate change and drought led some to conclude, once again, that the current approach in the Colorado basin was not sustainable.³¹² In response, some have called for renegotiation of the Colorado River Compact,³¹³ while others have disagreed.³¹⁴ Notably absent, however, are calls for the application of the priority doctrine on an interstate basis.³¹⁵

311. See Patricia Mulroy, *Collaboration and the Colorado River Compact*, 8 NEV. L.J. 890, 894 (2008). Mulroy asserts:

The seven states of the Colorado River Basin have spent much of the past century working through some of the most complex, contentious water resource issues imaginable. . . . Yet their collective experience demonstrates the profound value of working together to resolve seemingly intractable problems, rather than resorting to litigation or the kind of protracted conflict or competition that results in winners, losers, or nothing at all. By embracing the need for cooperation and partnership implicit in the Compact, balancing our competing needs and demands, and reaching out to share our experiences and solutions with others who are facing similar challenges, the seven basin states are setting new standards for resource management that will see our communities—and the Colorado River—through events such as the drought and climate change well into the future.

Id. at 894.

312. Tim P. Barnett & David W. Pierce, *When Will Lake Mead Go Dry?*, 44 WATER RES. RESEARCH 1, 1 (2008), available at <http://www.agu.org/pubs/crossref/2008/2007WR006704.shtml> (citing forecasts that runoff to the Colorado basin may decline ten to thirty percent over the next thirty to fifty years, potentially affecting the water supply of 12 to 36 million people, and concluding that “[w]hen expected changes due to global warming are included as well, currently scheduled depletions are simply not sustainable”).

313. See, e.g., Adler, *supra* note 308, at 22 (arguing that “significant changes in circumstances, new information, and problems and omissions in the original agreement suggest that it is time to reconsider some key provisions of the compact,” in part because “[w]e understand more about the environmental impacts of dams and water diversions [and] the public generally places a higher value on environmental protection”); Elana Schor, *McCain Comments on Colorado River Compact Makes Waves in Western States*, GUARDIAN, Aug. 20, 2008, available at <http://www.guardian.co.uk/world/2008/aug/20/johnmccain.water> (quoting comments of then-Republican presidential candidate John McCain suggesting that the Compact should be re-negotiated).

314. See, e.g., Gregory J. Hobbs, Jr., *Colorado River Compact Entitlements, Clearing Up Misconceptions*, 28 J. LAND RESOURCES & ENVTL. L. 83, 104 (2008) (“Recent experience in developing interim shortage criteria and participating in the [endangered species] recovery plan is showing that the Colorado River Compact is not in need of any amendment.”).

315. One prominent report concluded, “[t]he states have entered into 26 interstate water allocation compacts, primarily in the western United States, most of them over 50 years ago. As interstate water conflicts have increased, so has the realization that most of the existing compacts appear to be inade-

Allocating intrastate rivers and aquifers. The next subsection considers yet another context in which water bankruptcy might prove beneficial: intrastate negotiations among agricultural, urban, environmental, and other interests in light of the requirements of the federal Endangered Species Act.

C. CASE STUDY: A PERFECT STORM IN CALIFORNIA³¹⁶

The California Bay-Delta provides an example of a watershed that is widely perceived to be on the verge of collapse.³¹⁷ In fact, in 2009, the state legislature proclaimed, “[t]he Legislature finds and declares . . . [t]he Sacramento-San Joaquin Delta watershed and California’s water infrastructure are in crisis and existing Delta policies are not sustainable.”³¹⁸ In response, the legislature created a new state agency and charged it with presiding over a collaborative effort to increase reliability of water supplies and to enhance the ecosystem.³¹⁹

quate to resolve these conflicts.” Jerome C. Muys et al., *Utton Transboundary Resources Center Model Interstate Water Compact*, 47 NAT. RESOURCES J. 17, 21 (2007). In response, the report suggests a model compact that the states could adopt. *Id.*

316. This section was inspired, in part, by the author’s participation as a member of National Research Council’s Committee on Sustainable Water and Environmental Management in the California Bay-Delta, and as a member of the Panel to Review California’s Draft Bay-Delta Conservation Plan. See generally COMM. ON SUSTAINABLE WATER AND ENVTL. MGMT. IN THE CAL. BAY-DELTA, SUSTAINABLE WATER AND ENVIRONMENTAL MANAGEMENT IN THE CALIFORNIA BAY-DELTA (2012), available at http://www.nap.edu/catalog.php?record_id=13394 (last visited Nov. 3, 2012); COMM. ON SUSTAINABLE WATER AND ENVTL. MGMT. IN THE CAL. BAY-DELTA, A SCIENTIFIC ASSESSMENT OF ALTERNATIVES FOR REDUCING WATER MANAGEMENT EFFECTS ON THREATENED AND ENDANGERED FISHES IN CAL.’S BAY DELTA (2010), available at http://www.nap.edu/catalog.php?record_id=12881 (last visited Nov. 3, 2012); PANEL TO REVIEW CALIFORNIA’S DRAFT BAY-DELTA CONSERVATION PLAN, A REVIEW OF THE USE OF SCIENCE AND ADAPTIVE MANAGEMENT IN CALIFORNIA’S DRAFT BAY-DELTA CONSERVATION PLAN (2011), available at http://www.nap.edu/catalog.php?record_id=13148 (last visited Nov. 3, 2012).

317. See, e.g., BEAU GOLDIE, SANTA CLARA VALLEY WATER DISTRICT ET AL., *Restoring the Delta, Protecting Our Future*, <http://www.valleywater.org/EkContent.aspx?id=8272> (click on attachment “*Restoring the Delta—Protecting our Future*”) (quoting a statement from the Public Policy Institute of California that “California’s current water system raises several red flags. Catastrophic interruptions of water supplies from earthquakes and floods could cause large short-term losses; unreliable supplies could also jeopardize business and infrastructure investments that support economic growth”) (last visited Nov. 3, 2012).

318. Sacramento-San Joaquin Delta Reform Act of 2009, CAL. WATER CODE § 85001(a) (West 2009), available at <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=wat>.

319. See *infra* notes 347–48 and accompanying text.

1. Water Rights in California

California practices a blend of riparian water law (the common law in the East) and western prior appropriation, with both systems subject to the constitutional requirement of reasonable and beneficial use.³²⁰ Riparian rights must be satisfied first.³²¹ Then administrators allocate the remaining supply, if any, among appropriators in order of temporal priority.³²² In some cases, the State Water Board may modify existing appropriative water rights under a centuries-old policy known as the public trust doctrine.³²³

Two governmental appropriators are particularly significant: the federal Bureau of Reclamation (Bureau) and the California Department of Water Resources (DWR). The Bureau operates the Central Valley Project (CVP), a massive system of water storage and delivery authorized in 1935.³²⁴ The CVP is a multi-purpose project, with a significant portion of its water going to agricultural users.³²⁵ California operates the State Water Project (SWP), which began operation in the 1960s.³²⁶ Like its

320. See CAL. CONST., art. 10, § 2 (West 2012).

321. See *Tulare Dist. v. Lindsay-Strathmore Dist.*, 45 P.2d 972, 976 (Cal. 1935). But see *In re Waters of Long Valley Creek Stream Sys.*, 599 P.2d 656, 676 (Cal. 1979) (upholding restrictions on the exercise of dormant riparian rights).

322. See *Tulare Dist.*, 45 P.2d at 976.

323. See *Nat'l Audubon Soc'y v. Superior Court of Alpine Cnty.*, 658 P.2d 709, 712 (Cal. 1983), *cert. denied*, 464 U.S. 977 (1983) (recognizing state's continuing jurisdiction over flowing waters, tidelands, and lakeshores for the purpose of protecting the public's interest in fishing, navigation, commerce, and resource preservation); *State Water Res. Control Bd. Cases*, 39 Cal. Rptr. 3d 189.272 (Cal. Ct. App. 2006); see also *supra* Part II.A.4.

324. See *The Central Valley Project*, U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, <http://www.usbr.gov/mp/cvp/index.html> (last modified Sept. 28, 2010). See generally Reed D. Benson, *New Adventures of the Old Bureau: Modern-Day Reclamation Statutes and Congress's Unfinished Environmental Business*, 48 HARV. J. ON LEGIS. 137, 152 (2011) (discussing the history of the Bureau of Reclamation and introducing some background on the CVP); Lloyd G. Carter, *Reaping Riches in a Wretched Region: Subsidized Industrial Farming and its Link to Perpetual Poverty*, 3 GOLDEN GATE U. ENVTL. L.J. 5, 6 (2009) (explaining that the CVP is the largest publicly funded water management system in the United States); Tarlock, *The Future*, *supra* note 91, at 776-80 (giving some background on water law in the west, prior appropriation, and the public trust doctrine).

325. See *Central Valley Project: General Description*, U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, http://www.usbr.gov/projects/Project.jsp?proj_Name=Central+Valley+Project (last modified Apr. 21, 2011).

326. See *California State Water Project Water Contractors*, CAL. DEPARTMENT WATER RESSOURCES, http://www.water.ca.gov/swp/contractor_intro.cfm (last modified Apr. 29, 2008).

sister project,³²⁷ the SWP is multi-purpose and supplies both municipal and agricultural users.³²⁸ The Bureau and the State hold water rights for the operation of these projects, which they have contractually committed to deliver to numerous water-user groups.³²⁹ The water rights held by the Bureau and the State for the operation of these projects are relatively junior by California standards.³³⁰ As a result, they—and the contract deliveries dependent on such water rights—are vulnerable to curtailment in times of shortage.³³¹

2. Stakeholder Negotiations in the California Bay-Delta

The California Bay-Delta is one of the nation's most critical aquatic regions, and includes the largest estuary along the west coast of North and South America.³³² The confluence of the Sacramento and San Joaquin Rivers (the Delta) lies less than fifty miles northeast of San Francisco. To the west and southwest of the confluence, the rivers' freshwater gives way to the saline waters of San Francisco Bay. The San-Joaquin River Delta and San Francisco Bay (together, the Bay-Delta) represent the "hub" of the water-delivery system for the entire state of California that provides drinking water for more than twenty million citizens,³³³ irrigation water that supports a \$28 billion agricultural industry in central California, and a commercial and

327. See U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, *supra* note 325 (explaining federal/state coordination of the CVP and SWP facilities).

328. See CAL. DEPARTMENT WATER RESOURCES, *supra* note 326 (explaining that SWP water goes to 24 municipal contractors and to 5 agricultural users).

329. See *generally* Planning & Conservation League v. Dep't of Water Res., 100 Cal. Rptr. 2d 173, 178 (Cal. Ct. App. 2000) (discussing long term contracts between the California Department of Water Resources and several local water contractors).

330. See *California State Water Project Water Rights*, CAL. DEPARTMENT WATER RESOURCES, <http://www.water.ca.gov/swp/waterrights.cfm> (last modified Apr. 29, 2008) (specifying that the appropriations date back to 1927).

331. See *supra* Part II.B.1 (discussing curtailment of junior priorities) and *supra* notes 60–62 and accompanying text (discussing full- and over-appropriation of California's water supply).

332. ISENBERG, *supra* note 5, at 2 (describing Bay-Delta as "one of the most significant ecosystems in the world"); *Welcome to the Delta*, CALFED BAY-DELTA PROGRAM ARCHIVED WEBSITE, <http://calwater.ca.gov/delta/index.html> (last visited Nov. 3, 2012) (describing the Delta as "the largest estuary on the western coast of the Americas").

333. JAMES NICKLES ET AL., CALIFORNIA'S BAY-DELTA: USGS SCIENCE SUPPORTS DECISION MAKING, FACT SHEET 2010-3032 (2010), available at <http://pubs.usgs.gov/fs/2010/3032>.

recreational fishing industry valued at hundreds of millions of dollars.³³⁴

But the system is in crisis. As California acknowledges, the Delta provides “a lush habitat for plants and animals, many of which are found only in the Delta. Unfortunately, many of the Delta species have been declared threatened or endangered.”³³⁵ Large portions of the region’s historical wetland habitats have been destroyed.³³⁶ Federal agencies involved in the Delta paint a bleak picture. In 2009, they composed a list of the Delta’s problems:

Decades of environmental degradation have led to severe declines in Delta fisheries and have contributed to the collapse of the State of California’s . . . salmon fishing industry. The State is in the third year of drought with the consequent decreased water supplies contributing further to the problems. Both the Bay-Delta ecosystem and the economy dependent on its water and fish are on the *precipice of collapse*. Furthermore, climate change and seismic risks present additional, serious threats to the Bay-Delta environment, the levees and the Delta communities that depend on them, as well as the water supplies that travel through the Bay-Delta.³³⁷

For decades, California has searched for a solution to the Bay-Delta’s woes, and a method to resolve the seemingly intractable conflict among agricultural, environmental, fishery, urban, and other water users,³³⁸ and between state and federal regulatory authorities.³³⁹ In late 1994, state and federal representatives signed the Bay-Delta Accord,³⁴⁰ giving rise to a collaborative process known as “CALFED” (the name of which

334. U.S. DEP’T OF THE INTERIOR ET AL., CALIFORNIA BAY-DELTA MEMORANDUM OF UNDERSTANDING AMONG FEDERAL AGENCIES § I(a) (Sept. 29, 2009), available at <http://www.doi.gov/documents/BayDeltaMOUSigned.pdf>.

335. *Delta Species of Concern*, CALFED BAY-DELTA PROGRAM ARCHIVED WEBSITE, <http://www.calwater.ca.gov/delta/species/index.html> (last visited Nov. 3, 2012). In 1993, the federal Fish and Wildlife Service listed the Delta smelt as a “threatened species” under the Endangered Species Act, and the National Marine Fisheries Service listed the winter-run Chinook salmon as a threatened species.

336. See ISENBERG, *supra* note 5, at 4.

337. CALIFORNIA BAY-DELTA MEMORANDUM OF UNDERSTANDING AMONG FEDERAL AGENCIES, *supra* note 334 (emphasis added).

338. See Elizabeth Ann Rieke, *The Bay-Delta Accord: A Stride Toward Sustainability*, 67 U. COLO. L. REV. 341, 342–45 (1996) (discussing the debate over sustainability and water quality standards in the Bay-Delta).

339. See *id.* at 345–48.

340. See STATE OF CALIFORNIA ET AL., PRINCIPLES FOR AGREEMENT ON BAY-DELTA STANDARDS BETWEEN THE STATE OF CALIFORNIA AND THE FEDERAL GOVERNMENT 1 (Dec. 15, 1994), available at <http://www.calwater.ca.gov/content/Documents/library/SFBayDeltaAgreement.pdf>.

suggests the collaboration between California and federal agencies). The California legislature described CALFED as “the largest, most comprehensive water management program in the world.”³⁴¹ Soon after validating CALFED, the legislature called on its participants “to develop a long-term solution to water management, environmental, and other problems in the bay-delta watershed by means of a programmatic environmental impact statement”³⁴² Despite its optimistic scope, CALFED began to fall apart by about 2005.³⁴³ Sifting through the ruins, one scholar suggested that CALFED’s downfall was its attempt to do the near-impossible: “manag[e] a dynamic, oversubscribed resource to provide increased consumption, increased protection, and increased reliability”³⁴⁴ In sum, CALFED tried to be all things to everyone, as suggested by its slogan, “everyone will get better together.”³⁴⁵

CALFED was superseded by yet another collaborative process, even more optimistic and sweeping than its predecessor. In 2009, the Sacramento-San Joaquin Delta Reform Act mandated that water officials come up with a plan to achieve the “coequal goals” of simultaneously providing a more reliable water supply for water users, while also protecting, restoring, and enhancing the critical ecosystem from which those supplies will be drawn, the Bay-Delta.³⁴⁶ In addition, the legislature called

341. STATE WATER RES. CONTROL BD. ET AL., CALFED BAY-DELTA PROGRAMMATIC RECORD OF DECISION 1 (Aug. 28, 2000) available at <http://calwater.ca.gov/content/documents/ROD.pdf>.

342. CAL. WATER CODE § 79190 (West 2009). See generally Jody Freeman & Daniel A. Farber, *Modular Environmental Regulation*, 54 DUKE L.J. 795 (2005) (discussing the “modular” concept of environmental regulation and using CALFED as a case study); Dave Owen, *Law, Environmental Dynamism, Reliability: The Rise and Fall of CALFED*, 37 ENVTL. L. 1145, 1157–65, 1208–14 (2007) (explaining traditional frameworks in regulating scarce resources and suggesting a new one); Barton H. Thompson, Jr., *Markets for Nature*, 25 WM. & MARY ENVTL. L. & POL’Y REV. 261, 307–09 (2000) (suggesting CALFED as a constrained version of an environmental brokerage approach of regulation).

343. See Owen, *supra* note 342, at 1150.

344. See *id.* at 1199–1200 (arguing that CALFED’s fatal flaw was its assumption that water not legally committed to protection of the environment must be delivered to water users).

345. Sue McClurg, *Delta Deal?*, WESTERN WATER MAG., Jul./Aug. 2000, available at <http://www.watereducation.org/doc.asp?id=927>.

346. The California Delta is the region where the Sacramento and San Joaquin Rivers meet. As explained by the Delta Stewardship Council, the agency charged by statute with overseeing the achievement of the co-equal goals, “Sacramento-San Joaquin Delta is a regional, state and national treasure that supplies the drinking water of about 25 million Californians.” It is

for satisfaction of the coequal goals “in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values” of the Delta.³⁴⁷ The legislature placed those duties on the shoulders of a newly created independent state agency—the Delta Stewardship Council.³⁴⁸ The chair of the Stewardship Council recognized that many viewed the new legislation as California’s “most significant water policy step in almost 50 years.”³⁴⁹ But without a coherent framework to support the reallocation of water, rather than mere feel-good language calling for the satisfaction of wide-ranging goals, the Delta Stewardship Council lacked an important safeguard against the problems that eventually led to its predecessor’s demise.

3. Litigation in California

At least two bodies of federal law have played an important role in the allocation of water rights in California. First, under section 7 of the ESA, federal agencies must “insure that any action authorized, funded, or carried out by such agency” is not likely to jeopardize endangered species or adversely modify their critical habitat.³⁵⁰ Pursuant to its responsibilities under the ESA, federal wildlife agencies issued “biological opinions,” concluding that certain “reasonable and prudent alternatives” to the proposed operation of the CVP and SWP would be necessary to protect endangered fish species in central California, including restrictions on the timing and volume of water diversions.³⁵¹ The restrictions set off a torrent of criticism by water users and prompted a spate of lawsuits beginning in the 1990s challenging the biological opinions under the ESA.³⁵²

also the home to more than 515,000 people and “the hub of state, federal and local water systems that provide at least a portion of the water supply needs for two-thirds of all Californians.” *The Delta*, DELTA STEWARDSHIP COUNCIL, <http://www.deltacouncil.ca.gov/delta> (last visited Nov. 3, 2012); *see supra* Part III.C.

347. CAL. WATER CODE § 85054 (West 2009).

348. *See id.* § 85200(a).

349. ISENBERG, *supra* note 5, at 1.

350. Endangered Species Act of 1973, 16 U.S.C. § 1536(a)(2) (1973).

351. Benson, *supra* note 204, at 558–59.

352. *See generally* Reed D. Benson, *Environmental Review of Western Water Project Operations: Where NEPA Has Not Applied, Will It Now Protect Farmers from Fish?*, 29 UCLA J. ENVTL. L. & POL’Y 269 (2011); Brian E. Gray, *Dividing the Waters: The California Experience*, 14 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 1297 (2008); Shelley Ross Saxer, *Managing Water Rights Using Fishing Rights as a Model*, 95 MARQ. L. REV. 91 (2011); J.B. Ruhl &

In addition, the restrictions spawned litigation in which irrigators deprived of some of their water deliveries under contracts with the federal Bureau of Reclamation and the State Department of Water Resources claimed that the restrictions constituted a regulatory taking of their water rights for which compensation was owed.³⁵³ The irrigators prevailed in their 2001 lawsuit, representing the first time that a court held that actions required under the ESA could constitute a regulatory taking of water rights.³⁵⁴

D. THE BENEFITS OF WATER BANKRUPTCY

California's series of collaborative processes provides a case study for the concept of water bankruptcy. This section suggests three concrete, practical benefits that water-bankruptcy principles could produce in the context of California's Bay-Delta. Overall, the bankruptcy model provides a roadmap to direct the discussion of stakeholder groups. As such, it may facilitate the consideration of tough questions in dire circumstances.

1. Establishing Realistic Expectations

Declaring water insolvency in the Bay-Delta would perform an important signaling function that would address one of the primary challenges faced in bankrupt watersheds: admitting that the current system is broken and demonstrating willingness to compromise in light of such collapse.³⁵⁵ When asked to review the sustainability of water and environmental management practices in the Bay-Delta, the National Research Council of the National Academies of Science cited as a primary roadblock the state's failure to acknowledge scarcity:

Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424 (2010); Paul Stanton Kibel, *The Public Trust Navigates California's Bay Delta*, 51 NAT. RESOURCES J. 35 (2011); Barton H. Thompson, Jr., *Uncertainty and Markets in Water Resources*, 36 MCGEORGE L. REV. 117, 124–25 (2005).

353. See *Tulare Lake Basin Water Storage Dist. v. United States*, 49 Fed. Cl. 313 (Fed. Cl. 2001). See generally Holly Doremus & A. Dan Tarlock, *Fish, Farms, and the Clash of Cultures in the Klamath Basin*, 30 ECOLOGY L.Q. 279 (2003) (describing “clash of cultures” among farmers, environmentalists, Native Americans, and federal agencies in the Klamath region of northern California and southern Oregon).

354. See Benson, *supra* note 204; see also Douglas L. Grant, *ESA Reductions in Reclamation Water Contract Deliveries: A Fifth Amendment Taking of Property?*, 36 ENVTL. L. 1331, 1363–64 (2006); Brian E. Gray, *The Property Right in Water*, 9 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 1, 4–9 (2002).

355. See *supra* notes 217–22 and accompanying text (discussing three primary challenges of water bankruptcy proceedings).

While some Californians have increasingly recognized the scarcity of water, not everyone has. The failure of plans for water management in the Delta to acknowledge scarcity has greatly hindered the ability of agencies to craft and implement water plans and policies that will be widely accepted. The management of Delta water by court decisions reflects in part the lack of adequate water resource planning that takes scarcity into account.³⁵⁶

The declaration of insolvency would also help to set a tone of compromise. Despite the legislature's rosy articulation of two co-equal goals,³⁵⁷ the context of bankruptcy should dampen water users' expectations that everyone can emerge from the process with more water. And yet, that was precisely the case during the Bay-Delta negotiations. As the National Research Council (NRC) explained, the legislative treatment of water security and environmental enhancement as equal had the potential benefit of "forc[ing] planners to consider tradeoffs between water supply and environmental protection" and the educational advantage of "becom[ing] part of the public discourse about water."³⁵⁸ But those advantages were not realized. Instead, in the words of the NRC, it appeared "to be assumed that additional water will have to be found to serve the co-equal goals."³⁵⁹ This created an impossible situation, the report continued, in which, "[i]f the attainment of either or both goals requires more water than is currently available, and additional water is unavailable because of scarcity, then the co-equal goals cannot be attained."³⁶⁰

2. Rejecting Willful Ignorance

However diligently California legislators and officials seek to address the deteriorating conditions of the Bay-Delta, their

356. NAT'L RESEARCH COUNCIL, *supra* note 3, at 32–33.

357. *See* ISENBERG, *supra* note 5.

358. NAT'L RESEARCH COUNCIL, *supra* note 3, at 34–35.

359. *Id.* at 36. The same unrealistic expectations plagued the earlier CALFED process. *See* Owen, *supra* note 343, at 1154–55 (describing CALFED managers' belief that their job was to attempt to provide more water for consumption).

360. NAT'L RESEARCH COUNCIL, *supra* note 3, at 35. As a coalition of environmental, fishing, tribal, and environmental justice interests complained, the state's approach was little more than "smoke and mirrors." *See* Dan Bacher, *Huge Coalition Presents Historic Recommendations to Delta Council*, CENTRAL VALLEY (Oct. 3, 2011), <http://www.indybay.org/newsitems/2011/10/03/18692002.php> ("The Council simply can't bring itself to define the 'co-equal goals' or acknowledge that, in an overappropriated watershed where protection of public trust resources requires more water, someone will have to make do with less water." (quoting Bill Jennings, Executive Director, California Sportfishing Protection Alliance)).

efforts are vulnerable to misinterpretation—whether innocent or willful.³⁶¹ In contrast to the optimism of the co-equal goals, the Bureau of Reclamation reports that there is an increasing gap in California between supply and demand.³⁶² As of 2008, the Bureau documented statewide water demands ranging from 57.2 to 60.6 million acre-feet per year.³⁶³ At the same time, the Bureau measured statewide supply-demand gaps at somewhere between 2.3 and 4.3 million acre-feet annually, which represents “unmet urban, agricultural, and environmental demands, along with the annual estimated amount of ground water overdraft [as compared to] currently available supplies.”³⁶⁴ By the year 2030, the Bureau projected that the supply-demand gap would increase to an estimated 4.9 million acre-feet per year (in average years) and 6.1 million acre-feet per year (in dry years).³⁶⁵ In some regions, the gap would greatly exceed statewide estimates.³⁶⁶

Beyond the unrealistic expectations spawned by the co-equal goals, California has chosen willful water ignorance in several additional contexts. First, the state does not keep precise records of water use and water rights.³⁶⁷ As Phil Isenberg, chair of the Delta Stewardship Council, asked rhetorically:

How can California’s water delivery system be made “more reliable” if we do not keep track of the full amount of existing water rights, and have no idea of the amount of water that might be required under [laws relating to the transfer of water from one watershed to another]? If there are individuals and areas with a legal entitlement to a vast unknown and unknowable amount of water, . . . how can any wa-

361. See generally Ellen Hanak et al., *Myths of California Water: Implications and Reality*, 16 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 3 (2010) (discussing common public misconceptions regarding California’s water system).

362. BUREAU OF RECLAMATION, MID-PACIFIC REGION, U.S. DEP’T OF THE INTERIOR, WATER SUPPLY AND YIELD STUDY 2–14 (2008) (discussing supply-demand gaps), available at <http://www.usbr.gov/mp/cvp/docs/Water%20Supply%20and%20Yield%20Study.pdf>.

363. *Id.* at iv (representing the range demanded in a dry year and an average year).

364. *Id.* at iv–vi (representing the year 2000 gap, ranging from an average year to a dry year).

365. *Id.* at vi (as compared to a future statewide demand in 2030 estimated between 60.8 maf in average years and 57.4 maf in dry years).

366. *Id.*; see also ISENBERG, *supra* note 5, at 2 (“Our statewide water supply is under stress and that stress will continue. Our available water supply is increasingly volatile. . . . Climate change appears to be the main reason . . .”); *id.* at 3 (“Our total water supply is relatively finite and has changed little in the last 30 years, while demand continues to grow. . . . We annually use more water than nature provides.”).

367. See Doremus & Hanemann, *supra* note 134, at 64.

ter system be truly reliable? . . . And to compound the problem, why do we refuse to keep careful track of who uses how much water, and for what?³⁶⁸

In addition to imprecise recordkeeping, California has no comprehensive permit system for the regulation of groundwater, even though groundwater accounts for about one-third of the state's water usage.³⁶⁹ Overlying landowners can freely withdraw the percolating groundwater (that is, groundwater that does not flow as an underground stream) beneath their property for reasonable and beneficial use.³⁷⁰ This right is subject only to the "correlative" right of other overlying landowners withdrawing from the same source.³⁷¹ As one California court complained in 2006, "California is the only western state that still treats surface water and groundwater under separate and distinct legal regimes."³⁷² Rather than acknowledge the connection between surface and subsurface supplies, the court explained, California depends on water classifications "that bear little or no relationship to hydrological realities."³⁷³

Applying the mechanics of water bankruptcy listed above³⁷⁴ would provide a catalyst for water agencies to develop a practice of collecting and reporting critical water data about water use and water rights in their jurisdiction. After declaring insolvency and convening a stakeholder group to discuss the realistic goals watershed reorganization, debtor municipalities would be required to make a careful accounting of their debts and creditors before seeking the protection of bankruptcy—that is, they would list the water rights permitted in the relevant region, including details on the approved volumes, types, and places of use.³⁷⁵ Likewise, water users would be prompted to

368. Isenbereg, *supra* note 4, at 8; see also Kevin M. O'Brien, *Alice in Groundwater Land: Water Supply Assessments and Subsurface Water Supplies*, 4 GOLDEN GATE U. ENVTL. L.J. 131, 132 (2010) ("California's long tradition of decentralized management—its 'patchwork quilt' of measurement, management and water rights administration . . . has been at odds with the Legislature's efforts to inject precision and certainty into water supply and land use planning processes.").

369. See NAT'L RESEARCH COUNCIL, *supra* note 3, at 41.

370. See *id.* at 21.

371. See *id.*

372. *North Gualala Water Co. v. State Water Res. Control Bd.*, 43 Cal. Rptr. 3d 821, 831 (Cal. App. 2006).

373. *Id.* See also CAL. WATER CODE § 10920 (West 2009) (calling for groundwater reform, but requiring only the monitoring and reporting of groundwater elevations).

374. See *supra* Part III.B.1.

375. See *supra* note 244 and accompanying text.

provide detailed “proofs of claim”³⁷⁶ to substantiate their actual historic consumptive use. In cases where the demonstrated use fell short of the face value of water rights, the difference would be subject to abandonment under traditional principles of water law.³⁷⁷ Further, bankruptcy law contains explicit penalties for those who withhold information, which would provide an antidote for water users’ temptation to overstate the volumes of their water rights.³⁷⁸

3. Accommodating Modern Values

After debts and claims have been substantiated, the insolvent water agency must come up with a plan for the distribution of assets that is acceptable to the creditors.³⁷⁹ This provides a critical opportunity and challenge for the parties to agree how much water should be dedicated to modern values such as environmental preservation, aesthetic enjoyment, and recreation. As the Chairman of the Delta Stewardship Council explained, “Our water supply and the ways we use water, and the ecosystem we protect or damage are deeply interconnected. . . . And, as we have learned over the past 50 years, our desire to have a modern, developed society rests on how it prizes and protects its natural environment and a reliable supply of water.”³⁸⁰ Many recognize that ecosystem collapse can lead to water-supply collapse. But, because society came to appreciate environmental values long after the most senior water rights had been appropriated for domestic, irrigation, and other traditional uses, environmental water rights (such as instream flows or minimum stream flows) receive only limited protection under principles of water law.³⁸¹

376. See *supra* notes 272–75 and accompanying text.

377. See *supra* notes 172–77 and accompanying text.

378. See FED. R. OF BANKR. P. 3001(c)(2)(D) (if a claimant fails to provide required information, a court may “preclude the holder from presenting the omitted information” and/or “award other appropriate relief, including reasonable expenses and attorney’s fees caused by the failure”); see also *supra* note 173 and accompanying text (discussing the perverse incentive to overstate water rights created by the abandonment doctrine).

379. See *supra* notes 278–86 and accompanying text.

380. See ISENBERG, *supra* note 5, at 2.

381. See generally Browning, *supra* note 286, at 9–10 (discussing instream flow water rights). Although environmental water rights tend to hold junior priorities, some states have developed mechanisms to provide them with more security. See *id.* at 9–12 (discussing Colorado’s instream flow program, which authorizes specified entities to acquire existing senior water rights by purchase, donation, or other means, to change the use of the senior rights to

The bankruptcy model forces municipalities to confront such difficult issues directly as they develop and negotiate plans to reorganize their debts.³⁸² Among other things, stakeholders must agree whether environmental “debts” should be treated as secured or unsecured, senior or junior, and whether or not they rise to the level of preference.³⁸³

CONCLUSION

Take one world already being exhausted by 6 billion people. Find the ingredients to feed another 2 billion people. Add demand for more food, more animal feed and more fuel. Use only the same amount of water the planet has had since creation. And don't forget to restore the environment that sustains us. Stir very carefully.³⁸⁴

The prior appropriation doctrine juxtaposes two of the law's most cherished values—stability and evolution in light of changed circumstances. Increasingly, these values clash as watersheds become overappropriated. By definition, in watersheds that suffer from overappropriation, some users at the end of the line will face dashed hopes, defeated expectations, and no water. Such disappointment may prompt users to cling ever more tightly to their “rights,” relying on their paper water permits as proof of their actual entitlements. Understandably, they will jealously guard their allotments against new water demands, such as those posed by the protection of endangered species and environmental preservation. At the same time, administrators will face pressure to make hard decisions and to strictly construe existing rights in accordance with the principles of beneficial use and non-waste.

Eventually, the impasse among water users, administrators, and federal wildlife agencies may become so great that it brings all interested parties to the bargaining table. Historically, such efforts at compromise have been hampered by the all-or-nothing, first-come-first-served, inflexible culture spawned by the appropriation doctrine. Increasingly, bowing to reality, users may bargain for more security, but less water. But under the current ad-hoc bargaining framework, they likely leave the table with the bitter feeling that they have been cheated of

instream flow purposes, and to retain the acquired rights' original senior priority dates).

382. See *supra* note 238 and accompanying text.

383. See *supra* notes 246–54 and accompanying text.

384. WORLD ECONOMIC FORUM, *supra* note 7 (quoting Margaret Catley-Carlson, Patron Global Water Partnership, 2008–2009 Chair of World Economic Forum Global Agenda Council on Water Security).

their rights, and that priority's principles have given way to something resembling riparianism's contrary ethic of sharing.

This Article introduces the new concept of water bankruptcy to help water agencies confront the realities of overallocation in the context of voluntary, stakeholder negotiations. By drawing an analogy to time-honored principles honed in desperate circumstances, this Article hopes to show that negotiation and sharing are well-recognized responses to shortage—whether it goes under the name of insolvency or overappropriation. Further, this Article highlights many principles of bankruptcy that will be surprisingly familiar to western water users. Hopefully, such bankruptcy-derived principles can provide guidance and comfort to numerous water-stakeholder groups and help them realize that their watershed shares the goals of insolvent debtors—a fresh start and a negotiated reorganization plan that can endure for many years to come.