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DRINKING FROM THE SAME CUP: FEDERAL RESERVED WATER RIGHTS AND NATIONAL PARKS IN THE EASTERN UNITED STATES

Ryan Rowberry^{*}

INTRODUCTION

United States National Parks are widely considered priceless national treasures deserving vigilant protection and preservation.¹ Indeed, the act creating the National Park Service in 1916 mandated that park lands be managed and preserved “by such means as will leave them unimpaired for the enjoyment of future generations.”² Thus far Congress has created fifty-eight national parks located across the United States and its territories, covering over fifty-two million acres of land that include a staggering array of ecosystems.³ The most recent national park was created just earlier this year (January 10, 2013) when the nearly 27,000-acre site of Pinnacles National Monument in California—known for its fields of volcanic monoliths and its habitat for endangered California condors—was elevated to national park status.⁴

A powerful, but underused, tool that the federal government has to protect national parks is the federal reserved water right, which

^{*} Assistant Professor of Law, Georgia State University College of Law. I would like to thank the participants of works-in-progress sessions at Notre Dame Law School and the Arizona State University Sandra Day O'Connor College of Law for their detailed comments and constructive criticisms to earlier drafts of this article. A special thanks as well to Clint Tankersley for his research assistance and to Professor Jim Bross, my colleague, for his incisive comments to an earlier draft of this article, but even more so for his gracious welcome to the GSU community.

1. See generally OFFICE OF PUB. AFFAIRS & HARPERS FERRY CTR., NAT'L PARK SERV., THE NATIONAL PARKS: INDEX 2009–2011 (2009); Press Release, W. Res. Advocates, Water Court Finalizes Decree to Benefit Black Canyon of the Gunnison National Park (Jan. 7, 2009), <http://www.westernresourceadvocates.org/media/pdf/BlackCanyonDecree1-07-09.pdf>.

2. National Park Service Organic Act, ch. 408, § 1, 39 Stat. 535 (codified as amended at 16 U.S.C. § 1 (2006)).

3. OFFICE OF PUB. AFFAIRS & HARPERS FERRY CTR., NAT'L PARK SERV., *supra* note 1, at 13.

4. See H.R. 3641, 112th Cong. (2012) (enacted); Press Release, Neal Desai, Pac. Region Assoc. Dir., Nat'l Parks Conservation Ass'n, New Law Elevates Pinnacles National Monument to Become 9th National Park in California (Jan. 10, 2013), <http://www.npca.org/news/media-center/press-releases/2013/new-law-elevates-pinnacles.html>.

ensures that when the federal government designates land for a particular use (e.g., a national park), it also implicitly reserves enough water to satisfy the primary purposes for which that park was created.⁵ To date, the federal government has only claimed federal reserved water rights for national parks in arid western states like Utah or Montana that follow a prior appropriation water regime (i.e., first-in-time, first-in-right).⁶ However, a confluence of factors—climate change; population growth; increased agricultural, industrial, and municipal water usage among them—have resulted in droughts that are severely affecting national parks in eastern states, such as South Carolina and Alabama.⁷ But unlike western states that typically follow a prior appropriation water regime, eastern states generally adhere to a riparian water law regime, which presumes that sufficient water is available for all uses allowing all landowners abutting a water resource the “reasonable use” of that water.⁸ In times of water scarcity, therefore, riparian regimes are ill-suited to protecting water quantity in national parks.

This article argues that because riparian regimes lack the robust regulatory mechanisms and administrative oversight to efficiently protect water resources for national parks in the eastern United States, the National Parks Service (NPS) should claim federal reserved water rights for applicable national parks in the East and negotiate settlements to preserve sufficient water for at-risk national parks in these states. This article is divided into six sections. Part I examines the definition, origins and development of federal reserved

5. Michael C. Blumm, *Reserved Water Rights*, in 2 *WATERS AND WATER RIGHTS* §§ 37.01, 37.01, at 37-2 to -3 (Robert E. Beck & Amy K. Kelley eds., 3d ed. 2010).

6. *Id.* § 37.01, at 37-3. The federal government claimed federal reserved water rights for Zion National Park in Utah in 1996. See ZION NATIONAL PARK WATER RIGHTS SETTLEMENT AGREEMENT (1996), available at www.wcwc.org/downloads/agreements/Zion%20National%20Park.pdf. Montana has settled federal reserved water rights claims for Glacier National Park and Yellowstone National Park in 1994. See MONT. CODE ANN. § 85-20-401 (West, Westlaw through 2012 general election).

7. See U.S. DROUGHT MONITOR, <http://www.droughtmonitor.unl.edu/> (last updated Mar. 27, 2013). Data from the U.S. Drought Monitor shows that parts of Alabama, Georgia, and South Carolina are experiencing exceptional or extreme drought conditions. *Id.*

8. See generally JOHN W. JOHNSON, UNITED STATES WATER LAW: AN INTRODUCTION 36–37, 45–46 (2008); Joseph W. Dellapenna, *Issues Arising Under Riparian Rights: Replacing Common-Law Riparian Rights with Regulated Riparianism*, in *WATER RIGHTS OF THE EASTERN UNITED STATES* 35, 35-41 (Kenneth R. Wright ed., 1998).

water rights.⁹ Part II discusses the applicability and scope of federal reserved water rights to national parks and other federal public lands.¹⁰ Part III places federal reserved water rights within the wider context of the differing water regulation management regimes that are used in various states: prior appropriation, riparian, and regulated riparian.¹¹ Next, Part IV analyzes the inadequacies of riparian and regulated riparian regimes to protect national parks, specifically highlighting the perilous condition of Congaree National Park in South Carolina.¹² Part V then assesses previous efforts to claim federal reserved water rights in the East, both of which ended in federal–state settlement agreements.¹³ Finally, Part VI dismisses the notion that federal reserved water rights are inapplicable in riparian regimes and suggests that federal–state negotiated settlements are the most cooperative and efficient way to preserve water quantity for national parks in the eastern United States.¹⁴

I. FEDERAL RESERVED WATER RIGHTS

A. Definition

When the U.S. government removes land from the public domain for a particular use (e.g., national parks, Indian reservations, wild and scenic rivers), “it also implicitly reserves sufficient water to satisfy the purposes for which the reservation was created.”¹⁵ This is known as the doctrine of federal reserved water rights and is one of the primary ways that the U.S. government asserts water rights for its lands, particularly in the West.¹⁶ In 1976, the U.S. Supreme Court upheld an injunction against groundwater pumping at Devil’s Hole,

9. See *infra* Part I.

10. See *infra* Part II.

11. See *infra* Part III.

12. See *infra* Part IV.

13. See *infra* Part V.

14. See *infra* Part VI.

15. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FEDERAL RESERVED WATER RIGHTS, available at http://www.blm.gov/pgdata/etc/medialib/blm/co/field_offices/denca/DENCA_Advisory_Council/extra_materials_for.Par.33214.File.dat/FedResWaterRights.pdf (last visited Jan. 13, 2013).

16. See Blumm, *supra* note 5, § 37.01, at 37-2 to -3.

Death Valley National Monument, by an adjacent rancher that would have jeopardized one of the primary purposes of the national monument—preservation of the desert pupfish—and set out what is still the leading formulation of the reserved rights doctrine:

This court has long held that when the Federal Government withdraws its land from the public domain and reserves it for a federal purpose, the Government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation. In so doing the United States acquires a reserved right in unappropriated water which vests on the date of the reservation and is superior to the rights of future appropriators. Reservation of water rights is empowered by the Commerce Clause, Art. I, § 8, which permits federal regulation of navigable streams, and the Property Clause, Art. IV, § 3, which permits federal regulation of federal lands. The doctrine applies to Indian reservations and other federal enclaves, encompassing water rights in navigable and nonnavigable streams.¹⁷

B. Origins

The doctrine of federal reserved water rights traces its origins to the U.S. Supreme Court's decision in *Winters v. United States*.¹⁸ *Winters* involved a water rights conflict between the Fort Belknap Indian Reservation in Montana and adjacent non-Indian farmers.¹⁹ Both parties claimed riparian rights to the water—the United States “for an implied reservation of a natural flow riparian right to the water flowing across an Indian reservation;” the farmers for riparian rights “of the reasonable use variety”—as Montana, at that time followed a riparian water management regime.²⁰ The Court held, however, that the creation of the Indian reservation by the federal

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

18. *Winters v. United States*, 207 U.S. 564 (1908).

19. *Id.* at 565.

20. Joseph W. Dellapenna, *Regulated Riparianism*, in 1 *WATERS AND WATER RIGHTS* § 9.06(b)(2), at 9-241 (Robert E. Beck & Amy K. Kelley eds., 3d ed. 2010); see also *Winters*, 207 U.S. at 569.

government necessarily implied that water was reserved for the Indian's use, in an amount sufficient to achieve the primary purpose of the Indian reservation: to transform the Indians into a more civilized and concentrated agrarian society.²¹ This holding was a significant deviation from the established convention that water law was purely a state matter and for the next four decades, "the *Winters* doctrine was thought to apply only to Indian Country."²²

C. Development

Then in 1952, Congress passed the McCarran Amendment,²³ which required the federal government to waive its sovereign immunity in cases involving the general adjudication of water rights.²⁴ Before the McCarran Amendment, "the federal government had reserved the right not to be included in general basin adjudications conducted under state law."²⁵ But to achieve an "equitable and orderly allocation [of water] in times of shortage,"²⁶ Congress decided to remedy this exemption, with the result that the McCarran Amendment effectively transferred "the adjudication of rights to the use of water of a river system or other source" back to the state court system.²⁷ The U.S. Supreme Court stated that the "immediate effect of the Amendment is to give consent to jurisdiction in the state courts concurrent with jurisdiction in the federal courts over controversies involving federal rights to the use of water."²⁸ Thus, after the McCarran Amendment, any federal agency

21. *Winters*, 207 U.S. at 576.

22. Reed D. Benson, *A New Deal for a 1933 Water Right: The Black Canyon of the Gunnison Instream Flow Controversy*, in *THE FUTURE OF INDIAN AND FEDERAL RESERVED WATER RIGHTS* 280, 281 (Barbara Cosens & Judith V. Royster eds., 2012).

23. 43 U.S.C. § 666 (2006). Prior to this legislation, federal water rights could only be adjudicated in actions filed (or not opposed) by the United States because there was otherwise no waiver of sovereign immunity providing for the involuntary joinder of the United States to water rights adjudications. Benson, *supra* note 22, at 280–81.

24. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, *supra* note 15, at 1; Blumm, *supra* note 5, § 37.04, at 37-82 to -83.

25. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, *supra* note 15, at 1.

26. Blumm, *supra* note 5, § 37.04(a)(1), at 37-83.

27. 43 U.S.C. § 666(a).

28. *Colo. River Water Conservation Dist. v. United States*, 424 U.S. 800, 809 (1976).

claiming a federal reserved water right was required to participate in the state's adjudication process.²⁹

Following the passage of the McCarran Amendment, the U.S. Supreme Court expanded the *Winters* Doctrine beyond Indian reservations in *Arizona v. California*.³⁰ In *Arizona*, the Court held that the *Winters* Doctrine applied to *all* federally reserved public lands, including National Forests, National Recreation Areas, and National Wildlife Refuges.³¹ Although *Arizona* significantly expanded the scope of federal reserved water rights, subsequent cases curtailed this expansion in two significant ways. First, in 1976, in *Cappaert v. United States*, the Court ruled that quantification of a federal reserved water right was limited to the minimum amount necessary “to fulfill the purpose of the [land] reservation, no more.”³² Then in 1978, the Court further restricted the doctrine in *United States v. New Mexico* by limiting federal reserved water rights to the “primary purpose” of the reservation.³³ In *New Mexico*, the Court distinguished between “primary” and “secondary” purposes of a designated reservation, and held that federal reserved water rights only existed for the primary purpose.³⁴ Water for secondary purposes had to be obtained through the state water rights system.³⁵ At present, the quantification of federal reserved water rights is guided by these two principles: federal reserved water rights only include the *minimum amount necessary* to fulfill the specific *primary purpose* for

29. Even when cases are initiated in federal court, those courts must defer to ongoing state water court proceedings. *Id.* at 819.

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

31. *Id.* (recognizing reserved water rights for Lake Mead National Recreation Area, Havasu Lake National Wildlife Refuge, Imperial National Wildlife Refuge, and Gila National Forest).

32. *Cappaert v. United States*, 426 U.S. 128, 141 (1976). Although *Cappaert* is most significant for the limitation it placed on the scope of federal reserved water rights, it also extended application of the doctrine to national monuments and to protect against ground water diversions. *Id.* The Court upheld an injunction against groundwater pumping at Devil's Hole, Death Valley National Monument, by an adjacent rancher that would have jeopardized one of the primary purposes of the national monument—preservation of the desert pupfish. *Id.* at 133–38.

33. *United States v. New Mexico*, 438 U.S. 696, 718 (1978).

34. *Id.* (holding that the primary purpose of the Gila National Forest was to “preserve the timber or to secure favorable water flows for private and public uses under state law” and that water reserved for recreation, wildlife, and stock watering were supplemental secondary purposes not covered by federal reserved water rights).

35. *Id.*

which the federal land was reserved as described in the authorizing legislation.

In addition, there are a few other unique characteristics to federal reserved water rights that further define the contours of the right.³⁶ First, federal reserved rights are distinct from state water rights and therefore need not comply with a state's procedural requirements.³⁷ For example, federal reserved water rights are not subject to diversion and "beneficial use"³⁸ requirements and cannot be lost by non-use, as they would otherwise be under many prior appropriation state law systems.³⁹ Under the *Winters Doctrine*, federal water rights are effectively superimposed on top of the state systems of water allocation.⁴⁰ Second, federal reserved water rights are not subject to the state's system of prioritizing uses or to a comparison of competing uses or equities.⁴¹ Third, as noted above, the amount of a federal reserved right is quantified by the minimum amount of water necessary to affect the primary purpose of the reservation, rather than

36. Eric H. Lord, *The Obed Wild and Scenic River of Tennessee: Asserting a Federal Reserved Water Right in a Riparian Jurisdiction*, 7 GREAT PLAINS NAT. RESOURCES J. 1, 6 (2003) (citing *Cappaert*, 426 U.S. at 138–39).

37. *Cappaert*, 426 U.S. at 145 ("[F]ederal water rights are not dependent upon state law or state procedures."); see also *New Mexico*, 438 U.S. at 701–02 (explaining that only when the United States is seeking water for a secondary purpose—beyond the scope of the reserved water right—must it "acquire water in the same manner as any other public or private appropriator").

38. Beneficial use is a term of art that is defined under the law of each prior appropriation state. In Colorado, for instance, beneficial use is defined as "the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made" COLO. REV. STAT. ANN. § 37-92-103(4) (West, Westlaw through laws effective Apr. 1, 2013); see also ERIC B. HECOX, BUREAU OF LAND MGMT., WESTERN STATE'S WATER LAWS: A SUMMARY FOR THE BUREAU OF LAND MANAGEMENT (2001), available at <http://ia701203.us.archive.org/11/items/westernstateswat4002heco/westernstateswat4002heco.pdf> (listing recognized uses).

39. See *Winters v. United States*, 207 U.S. 564, 575–77 (1908) (holding that the Indian's federal reserved water right vested at the date the reservation was created rather than the time when they first diverted the water for a beneficial use). But cf. *Colo. River Water Conservation Dist. v. United States*, 424 U.S. 800, 805 (1976) (explaining that under prior appropriation state law, "one acquires a right to water by diverting it from its natural source and applying it to some beneficial use"); *Winters*, 207 U.S. at 576–77 (granting a federal reserved right to the Indians and implicitly holding that the right is not lost by periods of non-use); BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, *supra* note 15.

40. Charles F. Wilkinson, *Water Rights and the Duties of the National Park Service: A Call for Action at a Critical Juncture*, in OUR COMMON LANDS: DEFENDING THE NATIONAL PARKS 261, 263 (David J. Simon ed., 1988).

41. See *Cappaert*, 426 U.S. at 138–39 (explaining that balancing the equities is not the appropriate test for a federal reserved water right); Lord, *supra* note 36, at 6.

an unspecified amount that is applied to a beneficial use.⁴² And finally, a federal reserved water right vests on the date of the reservation of the land, rather than on the date of first beneficial use, and it is superior to the rights of subsequent appropriators.⁴³

Federal reserved water rights, then, are a powerful, but limited, exception to the rule that states possess exclusive control over their waters.⁴⁴ However, a water right that is vested under state law *before* the originating date of a given federal reservation will have priority over a federal reserved water right.⁴⁵ To displace such a senior vested right would effectively be a taking of private property and would require compensation under the U.S. Constitution.⁴⁶

II. APPLICATION OF FEDERAL RESERVED WATER RIGHTS TO FEDERAL PUBLIC LANDS

A. National Parks

Federal reserved water rights for the national parks are fairly broad.⁴⁷ Generally, these rights are derived from the National Park Service Act of 1916, which is considered “one of the strongest congressional statements of purposes that would protect streams and lakes.”⁴⁸ However, the specific rights and amount of water for any given park is implied from the authorizing legislation and the purpose of the park, as defined by Congress. As noted previously, the *Cappaert* decision stands for expansive reserved water rights in national parks and the *New Mexico* decision also implies a broad

42. Lord, *supra* note 36, at 6.

43. *Cappaert*, 426 U.S. at 138.

44. *See id.* (explaining that the government can reserve rights by implication in the context of “Indian reservations and other federal enclaves”).

45. *See id.*; Wilkinson, *supra* note 40, at 264.

46. U.S. CONST. amend. V.

47. Wilkinson, *supra* note 40, at 264.

48. *Id.* (explaining that the National Park Service was created to promote and regulate the use of national parks, monuments, and reservations in a way that will “conform to the fundamental purpose of the said parks, monuments and reservations, which [sic] purpose is to conserve the scenery and the natural and historic objects and the wild life therein . . .” (quoting 16 U.S.C. § 1)).

view of water rights for national parks even though it construes them more narrowly for national forests.⁴⁹

Although the federal government may assert federal reserved water rights for all lands managed by the federal government, these rights have only been asserted in western states.⁵⁰ Federal reserved water rights have been successfully claimed for national parks in the West through two methods: (1) general stream adjudications; and (2) negotiated settlements. General stream adjudications require all water users of a particular stream basin, including the NPS, to submit their claims for water rights to the state court.⁵¹ The state court's water rights adjudication is typically a long, complex, and expensive process involving numerous private and governmental parties that "catalogs and confirms all water rights in a basin and which party owns the water rights, binding all parties to a court decree regarding water rights."⁵² Colorado state courts, for example, issued a controversial and long-awaited decree awarding federal reserved water rights to the Black Canyon of Gunnison National Park in 2009, a decision that was hailed as the resolution of "one of Colorado's most contentious water rights battles" that lasted over 30 years.⁵³ In its decree, the Colorado water court recognized the 1933 priority date for the federal reserved water right for the park, officially quantified the amount of water "reserved to the United States as a direct flow water right for the benefit of the Park,"⁵⁴ and created "a flow regime that include[d] annual peak flows and shoulder flows—tied to natural water availability—plus a year-round base flow of 300 cubic feet per

49. *Id.* at 265; *see also*, Blumm, *supra* note 5, § 37.03(a)(2), at 37-61.

50. *See* Wilkinson, *supra* note 40, at 261.

51. *See generally* Andrea K. Gerlak & John E. Thorson, *General Stream Adjudications Today: An Introduction*, 133 J. OF CONTEMP. WATER RES. & EDUC. 1 (2006), available at <http://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1036&context=jcwre>; *Arizona's General Stream Adjudications*, JUD. BRANCH OF ARIZ.: MARICOPA COUNTY, <http://www.superiorcourt.maricopa.gov/SuperiorCourt/GeneralStreamAdjudication/index.asp> (last visited Jan. 21, 2013).

52. *What Is a Water Right?*, NAT'L PARK SERV., <http://www.nature.nps.gov/water/waterrights/about.cfm> (last updated Dec. 13, 2012).

53. W. Res. Advocates, *supra* note 1. The water dispute started in 1972. Ed Quillen, *Doctrinal Disputes*, COLO. CENT. MAG. (Dec. 2002), <http://cozine.com/2002-december/doctrinal-disputes/>.

54. Decree Quantifying the Federal Reserved Water Right for Black Canyon of the Gunnison National Park at 7, *In re* Water Rights for the United States, No. 01CW05 (Colo. Dist. Ct. Water Div. 4 Jan. 8, 2009).

second.”⁵⁵ Colorado state courts have also granted the NPS a reserved water right under the National Park Service Organic Act for Rocky Mountain National Park and recognized a “unique groundwater right” for the Great Sand Dunes National Park.⁵⁶ The NPS is currently a party to the Klamath Basin stream adjudication (ongoing in some form since 1975) that will affect the water supply of Crater Lake National Park in Oregon.⁵⁷ This adjudication is slated to be finalized sometime in Summer 2013.⁵⁸

Federal reserved water rights for national parks have also been secured through settlement agreements with various states in the West. For instance, in December 1996, the evening before trial, attorneys from the Environment and Natural Resources Division of the U.S. Department of Justice and the state of Utah negotiated a settlement securing Zion National Park a perpetual water right in the amount of 829 acre-feet per year.⁵⁹ Federal reserved water rights agreements have also been reached with the states of Wyoming and Montana to protect water resources flowing into Yellowstone National Park.⁶⁰ The NPS has also settled its federal reserved water

55. W. Res. Advocates, *supra* note 1. For a detailed scholarly analysis of the history and significance of the Black Canyon of the Gunnison National Park water dispute, see Benson, *supra* note 22, at 280–304.

56. *Federal Reserved Water Rights and State Law Claims*, U.S. DEP’T OF JUST., <http://www.justice.gov/enrd/3245.htm> (last updated Oct. 2012). These “unique” rights are an interesting hybrid of federal–state rights. Dan Tarlock, *General Stream Adjudications: A Good Public Investment?*, 133 J. CONTEMP. WATER RES. & EDUC. 52, 58 (2006), available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1936-704X.2006.mp133001009.x/abstract>. As Tarlock relates, “[t]he federal government appropriated surface and ground water under Colorado state law, but the National Park Service is the holder of the right and the right is defined by federal law, unappropriated surface and ground water necessary to protect the Dunes ecosystem.” *Id.*

57. See Reed Marbut, *The Klamath Basin Adjudication*, KLAMATH BUCKET BRIGADE (Feb. 24–26, 2004), http://www.klamathbucketbrigade.org/The_Klamath_Basin_Adjudication.htm (posting an article prepared for the Klamath Watershed Conference); Memorandum from Meg Reeves & Perry Walter, Assistant Attorney Gens., Natural Res. Section, to Richard Bailey, Adjudicator, Water Res. Dep’t, Klamath Adjudication/National Park Service Claims: DOJ File No. 690-600-GN0269-97 (Sept. 30, 1999), available at http://www.oregon.gov/owrd/pubs/docs/reports/kba_viic_adv.pdf.

58. Devan Schwartz, *Adjudication Deadline Set for Basin Water Users*, HERALD & NEWS (Dec. 6, 2012, 12:00 AM), http://www.heraldandnews.com/members/news/frontpage/article_061bbc94-3f6f-11e2-8bf1-0019bb2963f4.html.

59. ZION NATIONAL PARK WATER RIGHTS SETTLEMENT AGREEMENT, *supra* note 6, at app. B & art. IV (defining an acre-foot as “[t]he amount of water necessary to cover one acre of land to a depth of one foot, equivalent to 43,560 cubic feet or 325,851 gallons”); *Federal Reserved Water Rights and State Law Claims*, *supra* note 56.

60. Blumm, *supra* note 5, § 37.04(c)(2), at 37-109; *Federal Reserved Water Rights and State Law*

right claims for Glacier National Park in Montana in 1994, obtaining a consumptive water use for the Park in the amount of 567 acre-feet per year.⁶¹ And several stipulations regarding water rights for Petrified Forest National Park—located within the Little Colorado River Basin in Arizona—have also been settled, but the actual amounts have yet to be decreed.⁶²

B. Other Federal Public Lands

In *Arizona*, the U.S. Supreme Court expanded the application of the *Winters* doctrine beyond Indian reservations to all federal lands.⁶³ *Arizona* specifically recognized federal reserved water rights for national forests, national recreation areas, and national wildlife refuges.⁶⁴ Fifteen years later, the Court in *New Mexico* recognized that federal reserved water rights exist to satisfy the primary purpose of national forests—namely conservation of favorable water flows and the production of timber⁶⁵—but “the Court denied the Forest Service’s instream flow claim for fish, wildlife and recreation uses” based on the text of Forest Service’s Organic Act.⁶⁶ Thus, unless the authorizing legislation is explicit, national forest lands are not considered to be designated for the purposes of aesthetics, recreation, and wildlife. This strict rule for national forests is inapplicable to national monuments, however, as the court in *Cappaert* specifically

Claims, *supra* note 56; *see also* MONT. CODE ANN. § 85-20-401 (West, Westlaw through 2012 general election). Montana agreed to several unique provisions to protect the geothermal features of Yellowstone National Park from diversions outside of Park boundaries. *Id.* at art. IV.

61. MONT. CODE ANN. § 85-20-401 (West, Westlaw through 2012 general election).

62. *See* ANN WHEALAN ET AL., NAT’L PARK SERV., PETRIFIED FOREST NATIONAL PARK ARIZONA WATER RESOURCES SCOPING REPORT 16–17 (2003); *Federal Reserved Water Rights and State Law Claims*, *supra* note 56. For online copies of several documents relating to the Little Colorado River adjudication, *see Little Colorado River Adjudication Pending Cases and Decisions*, JUD. BRANCH OF ARIZ.: MARICOPA COUNTY, <http://www.superiorcourt.maricopa.gov/SuperiorCourt/GeneralStreamAdjudication/littleColorado.asp> (last visited Jan. 21, 2013).

63. *Arizona v. California*, 373 U.S. 546, 600–01 (1963).

64. For an in-depth analysis of federal reserved water rights and National Wildlife Refuges, *see* Blumm, *supra* note 5, § 37.03(a)(3), at 37-65 to -67.

65. *United States v. New Mexico*, 438 U.S. 696, 707 (1978).

66. *Federal Reserved Water Rights and State Law Claims*, *supra* note 56.

recognized federal reserved rights for national monuments, including groundwater rights.⁶⁷

Several authorizing statutes for federal lands enacted after the landmark decision in *Arizona* that extended federal reserved water rights to all federal land (not just Indian reservations) also play a significant role in securing sufficient water for various types of federal lands. The Wilderness Act of 1964 implicitly reserves federal water rights for congressionally designated wilderness areas.⁶⁸ This Act reserves the amount of water within the wilderness area necessary to preserve and protect the specific values responsible for designation of the area, and to provide for public enjoyment of these values.⁶⁹ However, federal reserved water rights for wilderness areas, specifically those that are part of a national recreation area, continue to face significant opposition in Idaho. In 2000, the Idaho Supreme Court, narrowly construing the purposes of the Wilderness Act, overturned decades of precedent by ruling that federal reserved water rights were inapplicable to the non-wilderness portion of the Sawtooth National Recreation Area in Idaho.⁷⁰ This places some of the waters of the Sawtooth National Recreation Area—a 756,000 acre site located in the middle of Sawtooth National Forest that is used for hiking, fishing, canoeing and other outdoor activities—under the purview of state appropriation laws.⁷¹

Similar to the Wilderness Act, designated wild and scenic rivers derive their federal reserved water rights from the Wild and Scenic

67. *Cappaert v. United States*, 426 U.S. 128, 147 (1976).

68. See *Wilkinson*, *supra* note 40, at 267 (citing *Sierra Club v. Block*, 622 F. Supp. 842 (D. Colo. 1985)). In *Sierra Club* the court “stated that because wilderness areas were withdrawn and reserved for a particular purpose, water rights were impliedly reserved.” *Id.* at 268.

69. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, *supra* note 15.

70. *State v. United States*, 12 P.3d 1284, 1290 (Idaho 2000) (“[T]he purpose of the Act was not simply to protect fish habitat, but rather to protect that habitat, as well as the other values associated with the recreation area, from the dangers associated with unregulated mining operations,” and “we agree fish require water, [but] we do not agree judicial notice of this fact establishes that without such water the purposes of the non-wilderness portion of the Sawtooth NRA will be entirely defeated.” (citation omitted)). For an in-depth analysis of this controversial decision see generally Michael C. Blumm, *Reversing the Winters Doctrine?: Denying Reserved Water Rights for Idaho Wilderness and Its Implications*, 73 U. COLO. L. REV. 173 (2002).

71. *Sawtooth National Forest*, U.S. DEP’T AGRIC. FOREST SERV., <http://www.fs.usda.gov/main/sawtooth/about-forest> (last visited Jan. 19, 2013).

Rivers Act (WSRA) of 1968.⁷² The WSRA is unique among federal enabling statutes because it “expressly reserves water rights for designated rivers (although it does so by negative implication).”⁷³ The Act states that “designation of any stream or portion thereof as a national wild, scenic or recreational river area [should] not be construed as a reservation of the waters of such streams for purposes other than those specified in this chapter, or in quantities greater than necessary to accomplish these purposes.”⁷⁴ Although the Act does not automatically reserve the entire unappropriated flow of the river, it does reserve the amount “necessary to preserve and protect in free-flowing condition the specific values which were responsible for designation of the watercourse.”⁷⁵ Federal reserved water rights have been recognized for wild and scenic rivers in the Salmon River Basin (1998)⁷⁶ and for the Red River⁷⁷ in New Mexico (1992).⁷⁸

In addition to these federal land designations, federal reserved water rights may also be asserted for military reservations,⁷⁹ and, to a certain extent, for public water holes and springs, mineral hot springs, stock driveways, and public oil shale withdrawals, but not for lands granted by the federal government to states in trust for educational purposes.⁸⁰

72. 16 U.S.C. § 1271 (2006). Rivers designated under the WSRA have reserved water rights “in quantities . . . necessary to accomplish [the river’s] purposes.” 16 U.S.C. § 1284(c).

73. COLUMBIA INST. FOR WATER POLICY, *FEDERAL RESERVED WATER RIGHTS & AMERICA’S RIVERS: 10 KEY QUESTIONS* 5 (2006), available at <http://www.columbia-institute.org/pdf/FedReservedWaterRights.pdf>.

74. 16 U.S.C. § 1284(c).

75. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, *supra* note 15.

76. See Memorandum Decision Granting, in Part, and Denying, in Part, the United States’ Motion for Summary Judgment on Reserved Water Rights Claims at 11, *In re SRBA*, No. 39576 (Idaho 5th Dist. Ct. July 27, 1998), available at <http://www.srba.state.id.us/FORMS/wil&scen.PDF>, *aff’d sub nom. Potlatch Corp. v. United States*, 12 P.3d 1256 (Idaho 2000).

77. 1999–2000 *Annual Report app. A: Status of Active Adjudications*, N.M. OFFICE ST. ENGINEER, <http://www.ose.state.nm.us/publications/99-00-annual-report/fnl-apdx-a.html> (last modified Mar. 8, 2001) (describing the history of the Red River adjudication and explaining that the water rights of the United States were adjudicated pursuant to a final decree in 1992 that established water uses by the U.S. Forest Service and BLM, including instream flow rights for the Wild and Scenic River segment of the Red River).

78. See Lord, *supra* note 36, at 8–9 (discussing application of the federal reserved rights doctrine to wild and scenic rivers and naming specific adjudications).

79. See Blumm, *supra* note 5, § 37.03(a)(8), at 37-76 to-77.

80. For an explanation of how federal reserved water rights apply to these various rights, see *id.* § 37.03(a)(7), at 37-74 to -76; FEDERAL RESERVED WATER RIGHTS, *supra* note 15. The Arizona

III. EXISTING WATER REGULATION REGIMES

To understand why federal reserved water rights should be asserted for national parks in the Eastern United States, one must understand the differing water regimes that operate in the United States. There are two primary water regimes that states use to allocate water rights: the riparian system and the prior appropriation system.⁸¹ But many states use a variation or combination of these two systems.⁸² “Western” states generally follow the prior appropriation system that adheres to the maxim first in time, first in right.⁸³ Traditionally, the “western” states included seventeen states: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.⁸⁴ Over time, however, the water regulation systems in nine of these states—California, Kansas, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Washington⁸⁵—have been modified into what is known as the “California doctrine,” a hybrid system including elements of both riparian and prior appropriation water regimes.⁸⁶ The remaining “western” states—Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming—follow a pure prior appropriation water regime, termed the “Colorado doctrine,”

Supreme Court recently resolved a ten-year dispute over water rights in the Little Colorado and Gila river basins by holding that no federal reserved water rights exist for state trust lands. See *In re Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source*, 289 P.3d 936 (Ariz. 2012).

81. Anita Porte Robb, *Applying the Reserved Rights Doctrine in Riparian States*, 14 N.C. CENT. L.J. 98, 98 (1983).

82. *Id.*

83. *Id.*

84. *Id.* at 98 n.2.

85. Richard C. Ausness, *Water Rights Legislation in the East: A Program for Reform*, 24 WM. & MARY L. REV. 547, 548 n.4 (1983).

86. Robb, *supra* note 83, at 99 n.5 (“These states view a grant of public land as giving the patentee riparian rights. These rights are superior to subsequent appropriations, and inferior only to appropriations made while the land was publicly owned.”); see also HECOX, *supra* note 38, at 13 (explaining how “hybrid states” have integrated riparian rights into the doctrine of prior appropriation and noting that “states have this dual [sic] system because riparian rights were historically recognized, but the state has changed to an appropriative system”). For an in-depth historical analysis of the California doctrine, see Joseph W. Dellapenna, *Dual Systems*, in 1 WATERS AND WATER RIGHTS § 8.02(a), at 8-9 to -14, (Robert E. Beck & Amy K. Kelley eds., 3d ed. 2010).

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under which riparian rights, aside from some disputes centered on non-consumptive uses of water, are not recognized at all.⁸⁷

Unlike “western” states, “eastern” states—generally considered to be those east of Kansas City, Missouri—follow a riparian regime that is based on a reasonable use standard.⁸⁸ But in the past several decades, most states in the East have shifted to a regulated riparian system which incorporates a permitting process whereby all direct users are required to obtain a limited-duration, renewable permit from a state administrative agency.⁸⁹

A. *Prior Appropriation*

The prior appropriation doctrine developed in the “western” states in response to the scarcity of water in the region.⁹⁰ Specifically, this doctrine evolved during the California Gold Rush when miners in California needed to divert water from a stream to locations where it was needed to process ore.⁹¹ Over time, customs and principles relating to water diversion developed in these mining camps and disputes were resolved by simple priority rule.⁹² Thus, the “driving force” behind the prior appropriation system is the “limited supply of water that is a common attribute of the typically arid western states.”⁹³ The prior appropriation system is based on the principle that a water right vests at the time a user first diverts the water for a beneficial use and that those with the earliest priority dates have the right to use that amount of water over other users with a later priority date.⁹⁴ Unlike riparian rights, appropriative rights exist regardless of the relationship between the land and water; rather, appropriative

87. See Dellapenna, *supra* note 86, § 8.02(b), at 8-14; Ausness, *supra* note 85, at 548 n.4 (listing the states and noting that Alaska also follows the Colorado Doctrine). For an archive-based analysis of the origins of the Colorado Doctrine and its role in implementing distributive justice, see generally DAVID SCHORR, *THE COLORADO DOCTRINE* (2012).

88. See Olivia S. Choe, Note, *Appurtenancy Reconceptualized: Managing Water in an Era of Scarcity*, 113 YALE L.J. 1909, 1909 n.1 (2004).

89. *Id.* at 1912.

90. Dellapenna, *supra* note 86, § 8.02(a), at 8-9 to -11.

91. *Id.*

92. See HECOX, *supra* note 38, at 12.

93. *Mattaponi Indian Tribe v. Commonwealth*, 72 Va. Cir. 444, 453 (2007).

94. HECOX, *supra* note 38, at 12.

rights are based upon “physical control and beneficial use of the water” and may generally be sold or transferred.⁹⁵ In sum, an appropriative right entitles the owner to a specific amount of water, for a specified use, at a specific location, with a definite date of priority.

According to the United States Bureau of Land Management—the federal agency responsible for administering over 245 million acres of public land mostly in the West⁹⁶—there are four critical elements of prior appropriation systems.⁹⁷ First, the appropriator must demonstrate the intent to appropriate the water, divert it, and apply it to a beneficial use.⁹⁸ This intent requirement was satisfied in times past by clearing land or posting notice; whereas today intent is indicated by application for a permit.⁹⁹ Second, physical diversion of the water was required to actuate a water right.¹⁰⁰ This requirement, however, has been greatly diminished as many states have implemented various instream flow programs.¹⁰¹ Third, the appropriator must divert the water for a beneficial use as defined by state law.¹⁰² The aim of the beneficial use requirement is to prevent waste because of water scarcity in the West.¹⁰³ Finally, priority of the water appropriator is temporal, meaning that senior appropriators will be able to satisfy their water needs before, and even to the detriment of, junior appropriators in times of shortage.¹⁰⁴

Given that appropriative rights are not tethered to land ownership but to beneficial use, appropriative rights may be lost through non-use or abandonment. But non-use alone does not constitute abandonment without a determination that the appropriator intended

95. *Id.*

96. See *The Bureau of Land Management: Who We Are, What We Do*, BUREAU OF LAND MGMT., www.blm.gov/wo/st/en/info/About_BLM.html (last updated Jan. 26, 2012).

97. HECOX, *supra* note 38, at 12.

98. *Id.*

99. *Id.*

100. *Id.*

101. *Id.*

102. *Id.*

103. HECOX, *supra* note 38, at 12.

104. *Id.*

to relinquish the right.¹⁰⁵ Therefore, an appropriative right “can be lost through non-use when intent to abandon can be demonstrated, or when the water right has not been used for a specified number of years.”¹⁰⁶ In this way, the prior appropriation doctrine assures that one who first diverts water for a beneficial purpose will have a fixed quantity of water to satisfy that purpose so long as it remains beneficial and in use.

B. Riparian

Riparian water rights are markedly different from appropriative rights. The term “riparian” comes from the Latin *ripa* meaning bank of a stream. Riparian rights, therefore, consist of “a bundle of legal rights concerning the relation of the owner of the bank of a stream to various features of the stream.”¹⁰⁷ Riparian water regimes are based on a standard of “reasonable use.”¹⁰⁸ This standard traces its origins to the 1827 Rhode Island Circuit Court decision in *Tyler v. Wilkinson*, a case arising out of a dispute between mill owners over the right to use the flow of a river for mill power.¹⁰⁹ In *Tyler*, the Court held that all riparians had equal rights to the water in the river, and that an upper proprietor could not diminish the quantity that would naturally flow to the lower proprietor.¹¹⁰ The Court went on to

105. *Id.*

106. *Id.* at 13.

107. Joseph W. Dellapenna, *Introduction to Riparian Rights*, in 1 WATERS AND WATER RIGHTS § 6.01, at 6-4 (Robert E. Beck & Amy K. Kelley eds., 3d ed. 2010).

108. Initially there were two versions of the riparian system: one that adhered to the natural flow doctrine and one that adhered to the reasonable use rule. *See* Ausness, *supra* note 85, at 548–49. The reasonable use rule

allows each riparian to use water, regardless of the effect on the natural flow of the source, so long as each other user does not impact the equal right of other riparians to use the water. In contrast, the natural flow rule, provided that every riparian on a source was entitled to have the water flow across his land in its natural condition, without alteration by other riparians.

Lord, *supra* note 36, at 12 n.69. As Jim Bross has pointed out in his chapter in WATERS AND WATER RIGHTS, Georgia’s riparian system appears to be unique in that it is a curious admixture of a natural flow theory with a reasonable use proviso superimposed on top of it. *See generally* James L. Bross, *Georgia*, in 6 WATERS AND WATER RIGHTS 491 (Robert E. Beck ed., 1991 ed. 2005 & Supp. 2008). *See also* O.C.G.A. § 44-8-1 (2002); O.C.G.A. § 51-9-7 (2000).

109. *See generally* *Tyler v. Wilkinson*, 24 F. Cas. 472 (Story, Circuit Justice, C.C.D.R.I. 1827).

110. *Id.* at 474 (“The consequence of this principle is, that no proprietor has a right to use the water to the prejudice of another. It is wholly immaterial, whether the party be a proprietor above or below, in

explain that an absolute right was not practical, instead holding that an upper proprietor could make “reasonable use” of the water, including consumptive withdrawals.¹¹¹ Thus, in a riparian system all riparian owners have the right to make a reasonable use of the water, and no riparian may unreasonably interfere with the rights of any other riparians.¹¹²

Another unique feature of the riparian system, but one intimated by the etymology of the term “riparian,” is that riparian rights are derived from land ownership: a landowner whose land physically abuts a body of water has an equal right to the use of the water from that source.¹¹³ Thus, a riparian owner may use the water as it passes through or stands on the property but may not unreasonably detain or divert the water to the injury of other riparian owners.¹¹⁴ Although what constitutes reasonable use differs from state to state, in general, courts will consider a variety of factors including: “climate, customs and usages, velocity and capacity of the watercourse, nature and extent of improvements on the watercourse, amount of water taken, previous uses, social importance of the use, and rights and reasonable needs of other riparians.”¹¹⁵

Because riparian rights are tethered to physical land ownership rather than beneficial use (like water rights in prior appropriation systems), riparian rights cannot be lost through non-use (although they may be forfeited by prescription) and are indefinite in duration.¹¹⁶ Furthermore, riparian rights cannot be transferred for use

the course of the river; the right being common to all the proprietors on the river, no one has a right to diminish the quantity which will, according to the natural current, flow to a proprietor below, or to throw it back upon a proprietor above.”).

111. *Id.* (“When I speak of this common right, I do not mean to be understood, as holding the doctrine, that there can be no diminution whatsoever, and no obstruction or impediment whatsoever, by a riparian proprietor, in the use of the water as it flows; for that would be to deny any valuable use of it. There may be, and there must be allowed of that, which is common to all, a reasonable use.”).

112. *Id.* (“The true test of the principle and extent of the use is, whether it is to the injury of the other proprietors or not.”).

113. See Dellapenna, *supra* note 107, § 6.01(a), at 6-6.

114. Joseph W. Dellapenna, *The Right to Consume Water Under “Pure” Riparian Rights*, in 1 *WATERS AND WATER RIGHTS* § 7.02(d), at 7-39 to -40 (Robert E. Beck & Amy K. Kelley eds., 3d ed. 2010).

115. Ausness, *supra* note 85, at 550; see also Dellapenna, *supra* note 114, § 7.02(d), at 7-39 to -55 (providing a valuable analysis of different methods to gauge reasonableness).

116. HECOX, *supra* note 38, at 11.

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on other lands, and the right to use the water runs with the land when riparian lands are conveyed.¹¹⁷ Riparian rights are also correlative, meaning that during times of water scarcity riparian proprietors share the shortage with each other.¹¹⁸ And unless riparian rights are adjudicated, they remain unquantified and extend to the quantity of water that can reasonably be used on the riparian parcel.¹¹⁹

C. Regulated Riparian

Most eastern states have modified their common law riparian systems by incorporating some level of state regulation of water use; hence the term regulated riparian system.¹²⁰ Although regulatory riparian statutes differ widely in eastern states, their key characteristics are reflected in *The Regulated Riparian Model Water Code*,¹²¹ which was “approved as an official standard of the [American] Society [of Civil Engineers] in 2003.”¹²² The most fundamental difference between a riparian system and a regulated riparian system is that riparian owners in a regulated riparian system must petition a state agency for a limited-duration permit to use a specified quantity of water.¹²³ Furthermore, although state agencies decide whether to grant a permit under a regulated riparian system using some version of the “reasonable use” standard, its application is very different than under a common law riparian system because “the administering agency decides *before* a use can begin whether the use is reasonable, both in terms of general social policy and in terms of the effects of the proposed use on other permitted uses” and “uses

117. *Id.*

118. *Id.*

119. *Id.*

120. See Dellapenna, *supra* note 8, at 41. For immensely useful tabular summaries of water rights laws in the eastern states, see Patricia K. Flood & Kenneth R. Wright, *Summary of Water Rights Law in the 31 Eastern States*, in WATER RIGHTS OF THE EASTERN UNITED STATES, *supra* note 8, at 105, 108–09.

121. Dellapenna, note 20, § 9.03, at 9–49. For a detailed analysis of the Model Code, see generally Robert E. Beck, *The Regulated Riparian Model Water Code: Blueprint for Twenty First Century Water Management*, 25 WM. & MARY ENVTL. L. & POL’Y REV. 113 (2000) (discussing the 1997 Model Code as well as earlier versions from 1972 and 1958).

122. Dellapenna, *supra* note 20, § 9.03, at 9–49.

123. *Id.* § 9.03(a), at 9–53.

on non-riparian land are not unreasonable *per se*.”¹²⁴ Permits may also contain conditions designed to protect public values, some of which may “include statutory preferences for certain classes of uses” and directions for prioritization during times of water shortage.¹²⁵ Finally, if the agency issues a permit, the right is not perpetual but exists for a term of years (generally ten to twenty years) after which the reasonableness of the use is reexamined.¹²⁶

A brief comparison of the regulated riparian system of Florida to that of Georgia provides an excellent glimpse into how eastern states have modified traditional riparianism in different ways. The Florida state system is based on the 1972 version of the *Regulated Riparian Model Water Code*. In Florida, a central state agency and local water management districts share responsibility for implementing Florida’s water allocation policy.¹²⁷ Under Florida’s system, all users—except domestic users—must obtain a permit by establishing that the proposed use is a reasonable beneficial use that will not interfere with existing uses.¹²⁸ Permits may be granted for a period of up to twenty years, and although renewal of a permit is possible, it is not guaranteed. Permits may also be revoked for any violation of its conditions or for non-use.¹²⁹ By contrast in Georgia, all water users, aside from farmers and irrigators, attempting to withdraw, divert, or impound water in excess of 100,000 gallons per day must obtain a permit.¹³⁰ Permits in Georgia are granted for terms of ten to twenty years based on a variety of factors and may be revoked for non-use or violation of the conditions of the permit.¹³¹ Thus, in Georgia, farmers and irrigators are exempt from regulation, while the water usage of their counterparts across the border in Florida is subject to state administrative oversight.

124. *Id.*

125. *Id.* § 9.03(a), at 9-53, 9-61 to -63.

126. *Id.* § 9.03(a), at 9-53 to -54.

127. *See generally* FLA. STAT. ANN. § 373 (West, Westlaw through 2013 1st Reg. Sess.).

128. *See id.* § 373.223(1).

129. *Id.*

130. *See* O.C.G.A. § 12-5-31(a) (2012).

131. *Id.* § 12-5-31(k).

IV. INADEQUACIES OF RIPARIAN REGIMES TO PROTECT WATER QUANTITY IN NATIONAL PARKS

Riparian regimes, whether traditional riparianism or regulated riparian systems, are based on an assumption that the abundance of water found in eastern states ensures that sufficient water will be available for all uses.¹³² However, since the 1980s, drought, increased industrial usage, and population growth have increased demand on eastern rivers to the point where riparian systems may be unable to ensure sufficient water for federal lands.¹³³ As one commentator succinctly noted, “[p]opulation pressures, industrial and residential expansion, years of severe drought, and an increased understanding of the necessity of preserving minimum instream flows have all served to restrict the water available for riparian use at the same time as demand for that water grows.”¹³⁴ Moreover, the unpredictable and ongoing effects of climate change will only serve to exacerbate pressures on water resources in the East, leaving valid and time-sensitive concerns about the “continuing viability of riparian rights even in the places where it originated.”¹³⁵

Scholars have identified numerous weaknesses of riparian systems as a means for allocating water. These weaknesses are particularly poignant for national parks in the eastern United States during times of shortage. First, and perhaps most problematic, the key criterion upon which water usage is based in riparian systems—reasonable use—is inherently vague and unpredictable.¹³⁶ Thus, a national park’s current reasonable water usage, even if it is inadequate to satisfy the primary purposes for which the park was created, may be further diminished if such usage is deemed unreasonable when

132. *See* Mattaponi Indian Tribe v. Commonwealth, 72 Va. Cir. 444, 460 (2007).

133. *See* Dellapenna, *supra* note 8, at 38, 43; Dellapenna, *supra* note 20, § 9.01, at 9-2 to -4; Hope M. Babcock, *Reserved Indian Water Rights in Riparian Jurisdictions: Water, Water Everywhere, Perhaps Some Drops for Us*, 91 CORNELL L. REV. 1203, 1204-05 (2006).

134. Judith V. Royster, *Winters in the East: Tribal Reserved Rights to Water in Riparian States*, 25 WM. & MARY ENVTL. L. & POL’Y REV. 169, 169 (2000).

135. Dellapenna, *supra* note 20, § 9.01, at 9-4.

136. Dellapenna, *supra* note 8, at 38; Babcock, *supra* note 133, at 1209.

additional users tap the watercourse.¹³⁷ Or it may even be the case that the amount of instream flow needed to adequately protect a river or stream feeding the park may be substantial enough to exceed the reasonable use limitation.¹³⁸ Moreover, because reasonableness is the only standard in riparian systems, no real mechanisms exist for reallocating water rights from wasteful or less socially desirable uses to more beneficial purposes, and the outcome of often expensive litigation is erratic.¹³⁹ And even where the social value of a park might factor into the calculus of what constitutes a reasonable use, the social value standard varies widely among courts.¹⁴⁰ Some courts, therefore, may view the social value of certain water uses in national parks as inferior to some private or industrial uses.¹⁴¹

A second weakness is that riparian rights are correlative with other users and may vacillate over time, particularly during seasons of water scarcity.¹⁴² Thus, national parks that are riparian owners have no permanent right to a particular quantity of water: subsequent users may partially or completely defeat a prior use or the park may suffer “pro rata sharing of water shortages.”¹⁴³ Third, since riparian rights are derived from land ownership, riparian rights cannot be transferred to a more beneficial use on non-riparian land.¹⁴⁴ This may negatively affect national parks if the park’s primary purpose includes water but it lacks proximity to the physical river or stream. Fourth, riparian systems are also incapable of promoting efficient use and conservation of the water because riparianism allows for complete consumption of a watercourse, with limitations on withdrawal coming from the whims of other users or from state permits that do

137. Dellapenna, *supra* note 8, at 38; Babcock, *supra* note 133, at 1210.

138. See Lord, *supra* note 36, at 13 (explaining the limitations of a riparian system as they apply to protecting the Obed Wild and Scenic River in Tennessee).

139. Babcock, *supra* note 133, at 1210 (noting that “outcomes may vary from judge to judge and stream to stream”); Dellapenna, *supra* note 20, § 9.01, at 9-12.

140. See Robb, *supra* note 86, at 105.

141. *Id.*

142. Babcock, *supra* note 133, at 1209.

143. Blumm, *supra* note 5, § 37.01(c)(2), at 37-20. Even in regulated riparian systems, senior permittees are not protected from a reduction in their rights during times of drought. See Dellapenna, *supra* note 8, at 44; Babcock, *supra* note 133, at 1210, 1218.

144. Babcock, *supra* note 133, at 1210.

reflect an accurate knowledge of the volume of the entire watercourse.¹⁴⁵ Finally, since riparian rights are resolved through litigation, the injured party is required to show actual injury to defeat an upstream riparian use.¹⁴⁶ It may be difficult, therefore, for a national park to show injury sufficient to establish that an upstream diversion has interfered with reasonable use of the water necessary to satisfy the primary purposes of the park.¹⁴⁷

There is also an additional fault specific to regulated riparian regimes deserving mention: state permitting programs typically do not respond to utilitarian or fairness goals of effective water allocation.¹⁴⁸ Many eastern states, like Georgia, have exempted certain classes of large water users—domestic users, industrial users, farmers, municipalities—from regulation, leaving the remaining water users that need state permits sharing a substantially reduced water source.¹⁴⁹ Thus, it is unclear how the parks will fare under the “reasonable use” standard when a regulated riparian regime is inherently biased against many of the purposes for which the parks were created (e.g., ecosystem preservation, species protection, recreation).

These criticisms of riparian regimes underscore the need for the federal government to assert a federal reserved water right for national parks in riparian jurisdictions and to work with states to find tailored solutions. Without recognizing a reserved water right that would guarantee sufficient amounts of water for the national parks, riparian systems may fail to protect the lifeblood of national parks, like Congaree National Park in South Carolina, leading inexorably to the demise of priceless natural habitat, endangered species, and largely unspoiled ecosystems.

145. *Id.*

146. *Id.* at 1211.

147. *Id.* at 1212.

148. *Id.* at 1219.

149. See O.C.G.A. § 12-5-31(a) (2012); see also Babcock, *supra* note 133, at 1219.

A. National Park At Risk: Congaree National Park, South Carolina

Congaree National Park, less than twenty miles southeast of Columbia, South Carolina, was originally established by Congress as the Congaree Swamp National Monument in 1976.¹⁵⁰ In 2003, Congress elevated and renamed the nearly 27,000-acre area as Congaree National Park.¹⁵¹ The primary purpose of Congaree National Park is inextricably linked with water: “[T]o preserve and protect for the education, inspiration, and enjoyment of present and future generations an outstanding example of a near-virgin southern hardwood forest situated in the Congaree River floodplain in Richland County, South Carolina”¹⁵² The national and state champion trees growing in this floodplain forest comprise “the largest intact expanse of old growth bottomland hardwood forest remaining in the southeastern United States” and form a “well-preserved, biologically diverse, and dynamic river floodplain ecosystem” complete with “[f]orested wetlands, oxbow lakes, slow moving creeks and sloughs [that] provide ample habitat for fish, birds, amphibians, reptiles, mammals, insects and other aquatic life.”¹⁵³ These outstanding natural values prompted UNESCO to declare these unique bottomland hardwood forest communities an International Biosphere Reserve in 1983 and spurred the Audubon Society to designate them as a Globally Important Bird Area in 2001.¹⁵⁴

The adjacent Congaree and Wateree Rivers are critical to the survival of Congaree National Park. Although the Park is “not

150. Act of Oct. 18, 1976, Pub. L. No. 94-545, 90 Stat. 2517. Congaree was the name of the Native American tribe that lived in the forest-swamp before smallpox decimated them in the 18th century. See *Congaree National Park*, NAT’L GEOGRAPHIC, <http://travel.nationalgeographic.com/travel/national-parks/congaree-national-park/> (last visited Feb. 25, 2013). For an excellent overview of the founding of Congaree Swamp National Monument, see Elizabeth J. Almlie, *A Place of Nature and Culture: The Founding of Congaree National Park, South Carolina*, 3 FED. HIST. J. 1 (2011), available at http://shfg.org/shfg/wp-content/uploads/2012/01/1-Almlie_Layout-11-final.pdf.

151. See 16 U.S.C. § 410jjj (2006); *Nature & Science*, NAT’L PARK SERV., <http://www.nps.gov/cong/naturescience/index.htm> (last updated Apr. 17, 2013).

152. 16 U.S.C. § 410jjj(a).

153. *Nature & Science*, *supra* note 151.

154. Almlie, *supra* note 150, at 5; *History & Culture*, NAT’L PARK SERV., <http://www.nps.gov/cong/historyculture/index.htm> (last updated Apr. 17, 2013).

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inundated year-round, much of the forest is filled with water for a considerable portion of the year—giving rise to its local name of Congaree Swamp.”¹⁵⁵ Additionally, about ten times each year, waters from these rivers “periodically sweep through the Park’s floodplain.”¹⁵⁶ Far from damaging, however, these natural intermittent flooding events carry “nutrients and sediments that nourish and rejuvenate this ecosystem and support the growth of national and state champion trees.”¹⁵⁷ Thus, without significant amounts of water flowing through the Park and periodically contributing to floods, the spectacular ecosystems of the Congaree National Park—including the forests—may dry out and suffer irreparable harm.

Yet, the water flowing into Congaree National Park is currently at risk. The three-hundred-mile Catawba River—which starts in the North Carolina mountains and flows south, crossing into South Carolina at Lake Wylie where it becomes the Wateree River and helps feed Congaree National Park—was named by American Rivers as the most endangered river in the United States in 2008.¹⁵⁸ The Catawba-Wateree River Basin was also recently the focus of an interstate water allocation dispute between North Carolina and South Carolina at the U.S. Supreme Court.¹⁵⁹

In 2007 North Carolina approved inter-basin transfers of water, effectively removing tens of millions of gallons of water from the Catawba-Wateree River Basin for eventual municipal use by the City of Charlotte and other localities in North Carolina.¹⁶⁰ In response to North Carolina’s diversion approval, South Carolina filed suit in the

155. Almlie, *supra* note 150, at 3.

156. *Nature and Science*, *supra* note 151; *Congaree National Park*, *supra* note 150.

157. *Home of Champions*, NAT’L PARK SERV., <http://www.nps.gov/cong/index.htm> (last updated Apr. 8, 2013).

158. *About the Catawba-Wateree River*, CATAWBA RIVERKEEPER, <http://www.catawbariverkeeper.org/about-the-catawba/catawba-wateree-facts/> (last visited Feb. 25, 2013); Press Release, Gerrit Jöbsis, American Rivers, No Progress on Catawba-Wateree, America’s Most Endangered River, (Dec. 11, 2008), <http://www.americanrivers.org/newsroom/press-releases/2008/no-progress-catawba-wateree.html>.

159. *See generally* *South Carolina v. North Carolina*, 558 U.S. 256 (2010).

160. *Id.* at 259–60. The City of Charlotte, North Carolina, alone received a permit to draw 33 million gallons per day from the Catawba River. *See id.* at 260.

U.S. Supreme Court seeking an equitable apportionment of the Catawba River and an injunction that would prevent North Carolina from approving transfers of water from the Catawba-Watauga River Basin.¹⁶¹ For over two years, the states worked with a Special Master, resulting in the Court avoiding the apportionment issue and focusing solely on the narrow, procedural issue of whether certain non-state parties could intervene in the suit.¹⁶² The Court decided on January 20, 2010, that the Catawba-Watauga River Basin Advisory Commission (a bi-state riparian owner) and Duke Energy (a bi-state hydroelectric dam operator) could intervene, but rejected the petition of the City of Charlotte, stating that its interests were sufficiently represented by North Carolina.¹⁶³ Less than a year later, South Carolina and North Carolina, along with the other parties granted leave to intervene by the Court, settled their claims out of court in a Settlement Agreement on December 3, 2010, which was largely based on Duke Energy's Comprehensive Relicensing Agreement for a new hydropower license from the Federal Energy Regulatory Commission.¹⁶⁴

This Settlement Agreement, therefore, has a direct impact on the amount of water flowing from the Catawba River to the Watauga River and eventually into Congaree National Park. Unfortunately, the Settlement Agreement does little to preserve the flow of water into the park. Rather, it actually erects a regulatory process for "approving [inter] B[asin] T[ransfers] within the River Basin" as long as applicants meet specified criteria.¹⁶⁵ Thus, in addition to the heavy consumption of water by upstream Catawba and Watauga River users, inter-basin transfers from the Catawba and Watauga River Basin will continue, draining so much water that the periodic flooding and

161. *Id.*

162. *Id.* at 259–60.

163. *Id.* at 273–76.

164. Settlement Agreement of Dec. 3, 2010 at 1–2, *South Carolina v. North Carolina*, 558 U.S. 256 (2010) (No. 138).

165. *Id.* at 3. Inter-basin transfer applicants must notify other water users of the proposal and allow for public participation in the process. In addition, applicants must prepare an Environmental Impact Statement and state in writing the necessity for the proposed transfer. The applicant also bears the burden of proof for any proposed transfer. *See id.* at 3–4.

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resultant vitality of Congaree National Park may decline, contrary to the National Park Service statutory mandate.¹⁶⁶ There is an urgent need, therefore, for the federal government to preserve a sufficient amount of surface water flowing into Congaree National Park by asserting a federal reserved water right.¹⁶⁷

V. FEDERAL RESERVED WATER RIGHTS IN THE EAST

Federal reserved water rights have not been claimed for any national parks in the East.¹⁶⁸ But reserved water rights have been claimed for Indian lands in the eastern United States.¹⁶⁹ A brief examination of these few Indian precedents, therefore, may be instructive before outlining strategies through which federal and state governments could cooperate to recognize federal reserved water rights for national parks in the eastern United States.

A. The Seminole Water Rights Compact (1987)

The Seminole Water Rights Compact,¹⁷⁰ a 1987 agreement between the Seminole Tribe, the State of Florida, and the South Florida Water Management District, is the only instance where federal reserved water rights have been recognized in a riparian state.¹⁷¹ Although the Seminole Tribe and Florida disagreed about “the scope and/or existence of the [federal reserved water] rights,” the parties negotiated a compact “to avoid the expense and uncertainty of large scale water rights litigation.”¹⁷² Under this

166. Park lands must be managed and preserved “by such means as will leave them unimpaired for the enjoyment of future generations.” National Park Service Organic Act, ch. 408, § 1, 39 Stat. 535 (codified as amended at 16 U.S.C. § 1 (2006)).

167. Reserved water rights probably do not extend to groundwater. See Blumm, *supra* note 5, § 37.01(c)(2), at 37-19 to -20.

168. *Mattaponi Indian Tribe v. Commonwealth*, 72 Va. Cir. 444, 449 (2007) (“The reserved water rights doctrine has not been applied, nor its suitability formally addressed, in states . . . that subscribe to a riparian water rights system. . . . [T]he Court is unaware of any precedent relating to reserved water rights from any jurisdiction that is exclusively riparian.”).

169. See discussion *infra* Part V.A–B.

170. Florida Indian (Seminole) Land Claims Settlement, 25 U.S.C. §§ 1772–1772g (2006).

171. See Babcock, *supra* note 133, at 1206 n.9; Royster, *supra* note 134, at 199–200 (noting that the Compact was incorporated as a matter of federal law in the Indian Land Claims Settlement Act of 1987).

172. *Water Rights Compact Among the Seminole Tribe of Florida, the State of Florida, and the South*

agreement, the tribe received preferential drawdown rights to specific quantities of groundwater in artesian aquifers and a percentage of the total surface water amounts from various sources.¹⁷³ For example, on the Brighton Reservation lands, the tribe is “entitled to fifteen percent (15%) of the total amount of water which can be withdrawn from the District canals and from District borrow canals by all users from surface water within the Indian Prairie Basin”¹⁷⁴ Tribal water rights, therefore, are expressed as rights to a perpetual percentage of available water rather than rights to a perpetual absolute amount, which guarantees the tribe an enduring specified amount of water while aligning these water rights more closely with two of the hallmark principles of riparianism: “reasonable use” and flexibility.

The Seminole Water Rights Compact also softened the somewhat rigid concept of federal reserved water rights in its allocation of responsibilities during drought and overall water administration. During times of water shortage, the tribe agreed to reductions in water use “in the same manner and percentage as the equivalent class of use, source, and manner of withdrawal” specified under the District water shortage plan.¹⁷⁵ Thus, tribal water rights will be proportionally affected vis-à-vis other users in time of scarcity, a concession to the correlative rights principle in riparian regimes over the absolute quantification standard typically used for federal reserved water rights in the West. Furthermore, to “ease the administrative burdens on the state,” the tribe agreed to partially integrate their water management practices with those of Florida by agreeing to “comply with most of the non-procedural ‘terms and principles’ of the state water system.”¹⁷⁶

Florida Water Management District, SEMINOLE TRIBE OF FLA. 1, <http://www.semtribe.com/services/water/compact.doc> (last visited Feb. 25, 2013).

173. *Id.* at 9, 12.

174. *Id.* at 12.

175. *Id.* at 10.

176. Royster, *supra* note 134, at 200; see also *Water Rights Compact Among the Seminole Tribe of Florida, the State of Florida, and the South Florida Water Management District*, *supra* note 170, at 3–17.

B. Mattaponi Indian Tribe And Virginia State Court (2007)

Much more recently, the Mattaponi Indian Tribe in Virginia (a tribe that is not federally recognized but is recognized as a legitimate tribe by Virginia) brought a claim in Virginia Circuit Court, a state court of general jurisdiction, seeking reserved water rights.¹⁷⁷ The tribe advanced their claim to reserved water rights to prevent the City of Newport News from building a large municipal drinking water reservoir upstream from the Mattaponi Reservation that would withdraw seventy-five million gallons per day from the Mattaponi River in eastern Virginia. Such a massive reduction in water, the tribe argued, would deleteriously affect the salinity of the river, disrupt the annual shad spawn on which they rely heavily for sustenance and economic vitality, flood their ancestral homelands, and impair their culture and heritage.¹⁷⁸

In *Mattaponi*, the court addressed two key issues: (1) whether reserved water rights could apply to a non-federally recognized tribe; and (2) whether the reserved water rights might be applied at all in a riparian state.¹⁷⁹ As to the first issue, the Mattaponi Reservation was initially set aside by the Virginia colonial government in 1658, its existence affirmed in 1677 under the Treaty at Middle Plantation, and is, today, protected by the laws of Virginia.¹⁸⁰ Yet, the Mattaponi were not recognized as a tribe by the United States. Nevertheless, the court reasoned that reserved water rights were not “exclusive to the federal context,” and that the “idea of implying a reservation of water necessary both to effectuating the purposes of a treaty or other government act and sustaining the vitality of an Indian tribe is unquestionably an idea that is neither exclusive nor unique to the federal context.”¹⁸¹

On the second issue, although the court approached the question with skepticism, it held that if there was necessity, reserved water

177. *Mattaponi Indian Tribe v. Commonwealth*, 72 Va. Cir. 444 (2007).

178. *Id.*; see also Babcock, *supra* note 133, at 1249.

179. See generally *Mattaponi Indian Tribe*, 72 Va. Cir. 444.

180. *Id.* at 444.

181. *Id.* at 456–58.

rights could be applied in a riparian jurisdiction.¹⁸² Particularly, the court noted that in contrast to reserved water rights it could not “ignore the premise that riparian law does not guarantee a riparian owner sufficient water for a particular purpose.”¹⁸³ The court then acknowledged that even in a riparian jurisdiction, where water shortage had historically been irrelevant, it might become necessary to recognize reserved water rights because the reasonable use standard in riparian jurisdictions did not guarantee sufficiency in quality or quantity of water for a specific purpose.¹⁸⁴ In other words, the reserved water rights doctrine “effectively stands for the proposition that a government, as well as an Indian tribe, can impliedly reserve water for that tribe’s sustenance and thereby override customary state water law when *necessary* in light of inadequate protection offered by state water law.”¹⁸⁵ Despite this admission, the court dismissed the Tribe’s claim, with leave to amend, because it failed to satisfy the necessity element that the court considered critical to the successful application of the reserved water rights doctrine.¹⁸⁶ The Mattaponi declined to advance their claims under the Treaty of Middle Plantation of 1677 any further because they were “uneasy about risking an adverse decision that would affect other tribes” who were also signatories to the Treaty, choosing instead to settle with the City of Newport News for \$650,000 and an acknowledgement that the Tribe would not pursue further any alleged violations of the Treaty.¹⁸⁷

182. *Id.* at 461.

183. *Id.*

184. *Id.*

185. *Mattaponi Indian Tribe*, 72 Va. Cir. at 462.

186. *Id.* at 462–63 (explaining that the Tribe failed to demonstrate that Virginia’s riparian rights system would not adequately protect its rights claimed under the Treaty).

187. Frances Hubbard, *Tribe Can Sue EPA*, ALLIANCE TO SAVE THE MATTAPONI (Aug. 1, 2007), <http://www.savethemattaponi.org/InTheNews/070801TR-TribeCanSueEPA.html>; see also Bobbie Whitehead, *Mattaponi Agree to Drop Lawsuit over Reservoir*, INDIAN COUNTRY TODAY (Apr. 13, 2007), <http://indiancountrytodaymedianetwork.com/ictarchives/2007/04/13/mattaponi-agree-to-drop-lawsuit-over-reservoir-90617> (“The settlement agreement explains that Newport News will notify the tribe about any changes that would alter existing reservoir permits. The Mattaponi also retain the right to participate in Virginia administrative proceedings that relate to the reservoir . . .”). The full docket for *Mattaponi* is available from the Newport News Circuit Court under Docket No. 3001-RW/RC.

Mattaponi provides some indication of how a federal reserved water rights adjudication involving national parks would fare in a riparian jurisdiction. It suggests that courts would look favorably upon applying the reserved water rights doctrine to national parks in the East, particularly during times of drought. However, this case also reveals that parks would face a steep evidentiary burden: a park must adequately demonstrate that federal reserved water rights are necessary to satisfy the primary purpose for which the park was established, because riparian rights are incapable of doing so.¹⁸⁸ As water shortage issues become more prevalent in the East, it may become easier for the federal government to satisfy this necessity element by demonstrating that the reasonable use of water is no longer providing sufficient amounts of water to satisfy the purposes of the national parks. However, these claims have yet to be tested in court.

VI. STRATEGIES TO PROTECT NATIONAL PARKS IN THE EAST USING FEDERAL RESERVED WATER RIGHTS

Conceptually, there are no compelling reasons why federal reserved water rights should not apply to at-risk National Parks in the East if the parks require water for their primary purposes. Indeed, many scholars have long noted that federal reserved water rights are more akin to, and are more easily applicable in, riparian water regimes than in prior appropriation regimes.¹⁸⁹ Furthermore, Professor Dellapenna's argument that federal reserved water rights are inapplicable to eastern states due to their historical lack of federal

188. See *supra* note 186 and accompanying text.

189. See, e.g., Blumm, *supra* note 5, § 37.01(c)(2), at 37-19 ("Because reserved rights are often thought to be analogous to riparian rights—in that they originate in land ownership, not in beneficial use, and may not be lost by nonuse—accommodating reserved rights in riparian jurisdictions would pose no great conceptual difficulties."); Babcock, *supra* note 133, at 1234 ("There are several arguments for why *Winters* rights should fit within a riparian system. First, reserved tribal water rights were asserted in *Winters* as riparian rights. Therefore, the two types of rights must have initially been compatible. Second, recognizing *Winters* rights in a riparian system would be no more disruptive than in a prior appropriation system, since they contain elements of both systems. Third, given the adaptability of water management systems to changing circumstances and needs, *Winters* rights could easily be fit into either a common law riparian or regulated riparian system.").

public lands incorrectly presumes that federal authority to reserve water is grounded in the “public status of the lands prior to their reservation.”¹⁹⁰ Irrespective of whether the land for a national park was originally part of the public domain or was reacquired at some later time, if the federal government reasonably intended to reserve water in the establishment of the park, then the park may claim federal reserved water rights. More succinctly, as Professor Blumm eloquently states: “Reserved water rights are the product of a preemptive federal intent to use water for federal purposes, not a consequence of federal ownership of water as proprietor of the public domain.”¹⁹¹ And perhaps most importantly, the normative argument behind recognizing federal reserved water rights is just as applicable in the East as it is in the West—the government would not have reserved the land without implicitly reserving enough water to satisfy the purposes for which the land was set aside. In sum, there is no reason that national parks in the West should be protected by this doctrine when their sibling parks in the East are now facing similar water shortage problems.

The most pressing question then is not whether federal reserved water rights may apply to national parks in the East but *how* best to integrate these rights into riparian and regulated riparian water management systems. Using general stream adjudications to quantify federal reserved water rights in the East, like those in the West, has immense shortcomings—substantial costs, duration, size of the proceedings, lack of state agency expertise, limited scope of only addressing rights to water use, inflexible judicial decisions—and should be avoided.¹⁹² Moreover, strategies that posit importing some

190. Royster, *supra* note 134, at 181 n.56; *see also* Dellapenna, *supra* note 20, § 9.06(b)(2), at 9-229 (“[F]ederal reserved water rights other than for the Indian tribes, in contrast with treaty-based rights, can play no role in the thirteen original states and in Kentucky, Maine, and Vermont because the public domain in those states never belonged to the federal government. Thus the logical premises of the reservation of water rights simply do not exist. This is also true in other eastern states for parts that were settled by Europeans before the passage of the public domain into federal hands.”).

191. Blumm, *supra* note 5, § 37.01(c)(2), at 37-20.

192. *See* Lauren J. Caster, *General Stream Adjudications and Eastern River Systems*, 133 J. CONTEMP. WATER RES. & EDUC. 43, 43–45 (2006), available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1936-704X.2006.mp133001008.x/abstract>. Lord suggests that federal reserved water rights in Tennessee and other riparian jurisdictions might be resolved through quiet title actions. However, such

form of temporal hierarchy from prior appropriation regimes into riparian regimes¹⁹³ face daunting, but not insurmountable challenges: summoning state political will to alter state riparian statutes for federal aims; vastly increasing state administration; expanding and upgrading enforcement mechanisms; compensating affected landowners; guarding against the disparate treatment of landowners, particularly minority populations.¹⁹⁴

Given the intense fiscal and resource pressures of our age, the best strategy for implementing the federal reserved water rights of national parks in the eastern United States is the negotiated settlement. Indeed, both litigation claims thus far for reserved water rights in the East—the Seminole and Mattaponi claims—were resolved through settlements.¹⁹⁵ Negotiated settlements allow states and the federal government to craft tailored solutions (e.g., the proportional water right in the Seminole Compact), effectuate reasonable compromises, and clarify issues that courts have not resolved (e.g., reserved groundwater rights). While negotiated settlements involve considerable amounts of time and money, they are dramatically less time-consuming and costly than protracted

actions seem to merely swap the title “general stream adjudications” for the “quiet title” label without alleviating any of the underlying difficulties (e.g., cost, time, etc.) inherent in such suits. Lord, *supra* note 36, at 28–29.

193. Professor Royster has sketched two such strategies. Under the first, eastern states could alter their state riparian laws to decree that any riparian use that interferes with a federal reserved water right is unreasonable per se. This preserves the reasonable use standard among riparian users while applying a form of strict liability to uses that interfere with the federal reserved water rights of a National Park. The second method is only applicable to eastern states with a regulated riparian regime: legislatively limit the water available for riparian permit use to the available water in a source over and above the safe yield (i.e., “the amount of water available for withdrawal without impairing the long-term social utility of the water source, including the maintenance of the protected biological, chemical, and physical integrity of the source”) plus the federal reserved water right. Royster, *supra* note 134, at 190 n.102, 197–98 (citations omitted) (internal quotation marks omitted). This approach effectively removes a quantified federal reserved water right from the state permitting pool, thus guaranteeing the “perpetual nature” of the right while “minimiz[ing] the burden of administering a coordinated system.” *Id.* at 197. A third, and far weaker, alternative would involve states inserting federal reserved water rights near the top of their preferred uses portion of their riparian statutes. In times of water shortage, therefore, federal reserved water rights would be among the most protected classes of uses in riparian states. Arkansas, for example, lists federal reserved water rights as its third preferred use, just below drinking water and agricultural uses. See Dellapenna, *supra* note 20, § 9.03(a)(3), at 9–61.

194. See Dellapenna, *supra* note 107, § 7.04(b), at 7–107 to –112; Dellapenna, *supra* note 20, § 9.06(b)(2), at 9–240 to –241; Lord, *supra* note 36, at 25–27; Royster, *supra* note 134, at 198–99.

195. See *supra* notes 175, 190 and accompanying text.

federal litigation or multi-decade general stream adjudications. Time and money deciding on an adequate reserved water right for national parks and the applicable management provisions may also be substantially reduced by at least three factors: (1) the federal government could leverage its vast experience with settlement agreements involving federal lands and national parks in the West;¹⁹⁶ (2) federal and state government agencies can utilize the *Guideline for Development of Effective Water Sharing Agreements*, a recently published American Society of Civil Engineers' Standard that describes how to negotiate and craft effective water sharing agreements and provides several model agreements tailored to different situations;¹⁹⁷ and (3) numerous foundational ecological and hydrological studies for many national parks in the East, like Congaree National Park, are currently underway or already complete.¹⁹⁸ Finally, the inherent suppleness of settlement agreements, compared to a static judicial decree or revised state law, allows for quick responses to climate disruption or emergencies, as well as opportunities to frequently revisit and recast parts of the agreement as circumstances change.

But will states in the East want to negotiate a settlement agreement for federal reserved water rights to national parks within their state boundaries? There are several compelling reasons why eastern states should welcome the chance to work with the federal government to preserve the water in national parks. First, national parks add

196. See Blumm, *supra* note 5, § 37.04(c)(2), at 37-108 to -111. Blumm also mentions that the “widespread interest in negotiation of reserved rights as an alternative to litigation” has “spawned at least two books cataloguing the results of settlement agreements.” *Id.* § 37.04(c)(1), at 37-96 to -97.

197. See AM. SOC'Y FOR CIVIL ENG'RS, *GUIDELINE FOR DEVELOPMENT OF EFFECTIVE WATER SHARING AGREEMENTS* (2012).

198. See, e.g., PAUL A. CONRADS, TOBY D. FEASTER & LARRY G. HARRELSON, *ANALYZING THE EFFECTS OF THE SALUDA DAM ON THE SURFACE-WATER HYDROLOGY OF THE CONGAREE NATIONAL PARK FLOODPLAIN*, SOUTH CAROLINA (2008); THOMAS W. DOYLE, *MODELING FLOOD PLAIN HYDROLOGY AND FOREST PRODUCTIVITY OF CONGAREE SWAMP*, SOUTH CAROLINA: U.S. GEOLOGICAL SURVEY SCIENTIFIC INVESTIGATIONS REPORT 2009-5130 (2009); *Climate Change-Induced Changes in Flow Regime, Floodplain Inundation, and Species Habitats at Congaree National Park*, CAROLINAS INTEGRATED SCI. & ASSESSMENTS, www.artsandsciences.sc.edu/GEOG/research/cisa/congaree.html (last modified Oct. 2012); David C. Shelley, *Climate Change at Congaree National Park: Realities and Communication Paradigms*, S.C. DEP'T NAT. RESOURCES (Oct. 24, 2012), www.dnr.sc.gov/ccworkshops/pdf/CCWS-Oct24-Shelley.pdf.

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significant value to local economies. The National Park Service economic model examining the impacts of visitor spending at Congaree National Park in 2010, for example, reveals that 121,208 visitors to the Park contributed nearly \$2.8 million dollars to the local economy and supported 124 jobs.¹⁹⁹ These statistics from 2010, sampled during an economic downturn, are even more impressive when compared to those for Congaree National Park in 2005—a time when the economy was humming. In 2005, 84,301 visitors to Congaree National Park contributed two million dollars to the local economy and supported fifty-six jobs.²⁰⁰ Thus, visits to Congaree National Park, a sustainable natural resource, have increased by roughly 30% in just five years, resulting in a 40% increase in revenue and the creation of 120% more jobs in this relatively rural area of South Carolina.²⁰¹

Second, states have a vested interest in preserving water in national parks from a utilitarian standpoint. National parks consume far less water than agriculture and industry because parks typically require that water flow through and, in the case of Congaree National Park, over park lands. This leaves more water in the rivers and streams for downstream use. In addition, this unconsumed water serves several critical environmental purposes within national parks, such as “maintaining habitats for fish and wildlife” and supporting traditional hydrological and ecological functions, like wetlands that, in turn, help to naturally purify our water.²⁰² National parks also serve as “biological banks” that provide ready laboratories for studying ecological processes, plants, and animals that may yield important advances in medicine, agriculture, and sustainable living practices.²⁰³ These environmental and scientific advantages benefit

199. Congaree National Park 2010 Impact Report, MGM2, www.mgm2impact.com (click on “Impact Reports” hyperlink and select “Congaree NP”) (last visited Feb. 2, 2013).

200. DANIEL J. STYNES, IMPACTS OF VISITOR SPENDING ON THE LOCAL ECONOMY: CONGAREE NATIONAL PARK, 2005 2–3 (2007).

201. See *supra* notes 199–200.

202. Babcock, *supra* note 133, at 1247.

203. Richard West Sellars, *Scenery and Science in U.S. National Parks*, EJOURNAL USA: NAT’L PARKS, NAT’L LEGACY, July 2008, at 23, 25, available at <http://www.america.gov/media/pdf/ejs/0708ej.pdf#popup>.

everyone, not just visitors to the park or those who live in close proximity, thus “maximizing overall social welfare.”²⁰⁴

Finally, by protecting water quantity in national parks, states signal to their foreign sister states and the at-large international community that the United States cares about its commitment to a sustainable future. Although national parks, called by some “America’s Best Idea,” originated in the nineteenth-century United States, numerous countries around the globe (e.g., Saudi Arabia, Thailand, China, Guatemala, Ethiopia, Costa Rica, and Greece) have modeled their national parks upon our own and have benefitted from U.S. expertise.²⁰⁵ Taking affirmative steps to preserve these valuable natural treasures, therefore, conveys a powerful diplomatic and political message to other countries similarly mired in slackened economies coupled with intense resource pressures.²⁰⁶ Careful protection and judicious management of natural resources, particularly water, is the best long-term strategy for our shared existence on this planet.²⁰⁷

CONCLUSION

As the demand for water in the East grows and supplies dwindle, riparian and regulated riparian water management systems will struggle to adequately ensure sufficient water for national parks. The federal government, however, has a powerful legal tool at its disposal to prevent these national treasures from withering: the federal reserved water right. While these rights have only been asserted for

204. Babcock, *supra* note 133, at 1247.

205. See *About the NPS Office of International Affairs*, NAT’L PARK SERV., <http://www.nps.gov/oia/about/about.htm> (last visited Feb. 26, 2013); *NPS Technical Assistance Around the World*, NAT’L PARK SERV., <http://www.nps.gov/oia/around/around.htm> (last visited Feb. 26, 2013); THE NATIONAL PARKS: AMERICA’S BEST IDEA (Public Broadcasting Service 2009). Lushan National Park in Jianxi Province, China, a UNESCO World Heritage site, was based upon the “US National Park model.” *Lushan National Park*, UNESCO, <http://whc.unesco.org/en/list/778> (last visited Feb. 26, 2013); see also Alvaro Ugalde, *Parks Can Change a Nation*, EJOURNAL USA: NAT’L PARKS, NAT’L LEGACY, July 2008, at 28–30, available at <http://www.america.gov/media/pdf/ejs/0708ej.pdf#popup>.

206. For an excellent discussion of long-term planning in riparian regimes, see Dellapenna, *supra* note 20, § 9.05(a), at 9-172 to -181.

207. *Id.*

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national parks in prior appropriation regimes, the doctrine of federal reserved water rights originated to protect federal water rights in a riparian jurisdiction. And despite the theoretical differences between water rights in prior appropriation and riparian regimes, there are no practical reasons why federal reserved water rights should be confined to prior appropriation states, especially since the *raison d'être* for these rights in the West—water scarcity—now stalks eastern national parks like the Congaree.²⁰⁸ Therefore, to protect Congaree National Park and other national parks in the East, the federal government should claim federal reserved water rights for these parks and negotiate settlements with applicable state agencies to come to swift, sensible, and flexible management agreements. Such a strategy makes legal, fiscal, scientific, economic, and political sense. It will also ensure that, to the maximum extent possible, these priceless national ecosystems remain “unimpaired for the enjoyment of future generations.”²⁰⁹

208. See discussion *supra* Part IV.A.

209. National Park Service Organic Act, ch. 408, § 1, 39 Stat. 535 (codified as amended at 16 U.S.C. § 1 (2006)).

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