

**ADAPTING TO CLIMATE CHANGE: TRANSBASIN WATER  
DIVERSIONS AND AN EXAMPLE FROM THE MISSOURI  
RIVER VALLEY**

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*John H. Davidson* \*

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INTRODUCTION

There are three apparent responses to global warming and climate variability: (1) additional research; (2) adaptation to new and changing conditions; and (3) addressing the root causes of changing resource demand or climate change itself.<sup>1</sup> This symposium motors through the sea of verbiage that has accumulated around option three and focuses on the practical legal and policy challenges of adaptation. This paper focuses on the implications for water managers of possible broad-scale water shortages. Using the Missouri River Basin as a working example, this essay offers for discussion the general issue of whether—in light of emerging prospects for regional climate change, climate variability, and population growth—it is necessary to contemplate an integrated water

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\* Professor, University of South Dakota School of Law.

1. A. Dan Tarlock, *Western Water Law, Global Warming, and Growth Limitations*, 24 LOY. L.A. L. REV. 979, 980–81 (1991).

supply network playing freely across state and watershed lines. It assumes without discussion that any such proposals will meet deep opposition in water-abundant regions, where disruption of local economies and ecosystems is possible. It assumes further, however, that in a natural resources economy governed by equitable principles<sup>2</sup> and based on the free movement of essential goods in commerce,<sup>3</sup> a true water shortage in one region will be impossible to ignore.

Parallels are found in the classic 1925 journal article by Felix Frankfurter and James M. Landis in which the authors recognized that in the use and conservation of natural resources “lurked the seeds of inevitable contest between the new Union and its constituent members.”<sup>4</sup> There the authors describe the development of the electrical supply, which at the time was a local resource but was rapidly gaining recognition as a basic national interest. The first stage of development in this “electrical age”<sup>5</sup> saw a large number of small independent plants located haphazardly with little regard to efficiency and governed only by local law. In a second stage, surplus energy became available for export to meet regional and national demand.<sup>6</sup> Imagining a third stage through “legal pre-vision,” Frankfurter and Landis foresaw a “vast interrelated network of electric power freely playing across State lines,”<sup>7</sup> an atomized and uncoordinated system of power generation necessarily merging into an integrated national system.

Moving on from electricity, the authors focused on water, which ultimately could not be a matter of local and state authority. Instead, “an adequate water supply for our teeming city populations presents one of the most exigent problems of conservation.”<sup>8</sup> Further:

To a dramatic extent [water] is an ever-present concern in the daily lives of the people in one region, while it hardly touches the imagination, let alone the lives of millions of people in other parts of the country. Wherever the pressure is felt one answer is clear: no one State can control the

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2. See A. Dan Tarlock, *The Law of Equitable Apportionment Revisited, Updated, and Restated*, 56 U. COLO. L. REV. 381, 394 (1985) [hereinafter *Equitable Apportionment*] (discussing “fair allocation” as “the touchstone of equitable apportionment”).

3. See *Sporhase v. Nebraska ex rel. Douglas*, 458 U.S. 941, 949–50 (1981) (describing the pervasive economic nature of water in interstate trade).

4. Felix Frankfurter & James M. Landis, *The Compact Clause of the Constitution: A Study in Interstate Adjustments*, 34 YALE L.J. 685, 685 (1925).

5. *Id.* at 708.

6. *Id.* at 708–09.

7. *Id.* at 711.

8. *Id.* at 702.

power to feed or to starve, possessed by a river flowing through several States. A great number of our streams have that potency. Moreover, there can not be a definitive settlement. Population, engineering, irrigation conditions constantly change; they cannot be cast into a stable mould by adjudication or isolated acts of administration.<sup>9</sup>

Frankfurter and Landis recognized that natural resource shortages represented a direct challenge “that [would] make a major demand on American statesmanship,”<sup>10</sup> and that flexible federal leadership under the Commerce Clause was necessary to address the inevitable tensions among state, regional, and national interests.

Frankfurter and Landis could not have foreseen climate change, but they certainly foresaw the regional water shortages that now appear on our horizon. With this “legal pre-vision,” they wrote: “The legal issues are continuous because the human difficulties are continuous.”<sup>11</sup> Their prescription for an integrated system of resource distribution has not been adopted, but regional water shortages will soon require a renewal of that idea.

## I. THE MISSOURI RIVER

The Missouri River is the longest river in the United States. Its 2540 miles drain one-sixth of the continent, stretching from headwaters in Wyoming and Montana to its mouth deep in the State of Missouri, where it spills into the Mississippi River, providing that stream with the water necessary to carry the nation’s commerce to the Gulf of Mexico. Equally as important, a series of six massive reservoirs have been constructed on the river’s main channel, creating three of the five largest man-made lakes in the United States, with a combined storage capacity of seventy-four million acre–feet, the largest system of reservoirs in the United States.<sup>12</sup> In the upper basin, the two large reservoirs, behind Garrison Dam in North Dakota and Oahe Dam in South Dakota, together store in excess of 46.9 million acre–feet of mountain and prairie runoff.<sup>13</sup> The Missouri River below the

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9. *Id.* at 700–01.

10. *Id.* at 699.

11. *Id.* at 686.

12. JOHN R. FERRELL, *BIG DAM ERA: A LEGISLATIVE AND INSTITUTIONAL HISTORY OF THE PICK-SLOAN MISSOURI BASIN PROGRAM* xii (1993).

13. *North Dakota v. U.S. Army Corps of Eng’rs*, 264 F. Supp. 871, 874–75 (D.N.D. 2003).

dams flows into the lower basin, where it is channeled within levees and provides a free-flowing navigation channel to the Mississippi.<sup>14</sup>

The Missouri River Basin encompasses ten states, several Canadian provinces, twenty-five Indian tribes, and nearly the full range of human land uses. It includes major metropolitan areas, as well as relatively unpopulated expanses. It includes sub-humid dry lands in the upper basin and lands of water abundance in the lower.<sup>15</sup> Its modern history is that of conflict between the upper and lower basins, and the inability of basin states to achieve any level of accord in river management.<sup>16</sup> In sum, however, the basin, as developed, enjoys an abundance of stored water.

## II. TODAY: CLIMATE, TRANSBASIN WATER DIVERSION, AND THE COMMODITIZATION OF RIVERS

A practical beginning point is a minor contemporary event: the North Dakota Water Engineer issued a water right permit of 15,000 acre-feet per year in order to allow the Garrison Diversion Conservancy District to serve a federally funded Northwest Area Water Supply Project.<sup>17</sup> This project will divert water from Lake Sakakawea, the huge U.S. Army Corps of Engineers reservoir behind Garrison Dam on the main channel of the Missouri River, and transfer it eastward, where return flows will leave the Missouri River Basin, draining into the Red River and thence further northward into Canadian waters.<sup>18</sup>

The State of Missouri opposed the transbasin diversion and responded to the North Dakota permit by filing suit in federal district court under the National Environmental Policy Act. Missouri's complaint asserts that "any significant out-of-basin transfer of water . . . will significantly affect the human environment . . . and will cause actual and imminent harm to Missouri citizens."<sup>19</sup> More specifically, it argued that the proposed transfers from the Missouri River reservoirs would reduce the amount of flows

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14. John H. Davidson, *Indian Water Rights, the Missouri River, and the Administrative Process: What Are the Questions?*, 24 AM. INDIAN L. REV. 1, 7 (1999).

15. A. Dan Tarlock, *The Missouri River: The Paradox of Conflict Without Scarcity*, 2 GREAT PLAINS NAT. RES. J. 1, 2 (1997).

16. Sandra B. Zellmer, *A New Corps of Discovery for Missouri River Management*, 83 NEB. L. REV. 305, 307 (2004).

17. Complaint at 3, 6, *Missouri v. U.S. Dep't of Interior, Bureau of Reclamation*, D.D.C. (Feb. 23, 2009), available at [http://ago.mo.gov/agriculture/pdf/NAWS\\_complaint.pdf](http://ago.mo.gov/agriculture/pdf/NAWS_complaint.pdf).

18. *Id.* at 5 (identifying negative effects of upstream diversions on downstream uses).

19. *Id.* at 3.

released for downstream uses in the State of Missouri, such as domestic water supply and navigation.<sup>20</sup>

Although Missouri's suit is based in the National Environmental Policy Act, the underlying concern is obviously with the decision of North Dakota, an upstream basin state, to permit a transbasin diversion over the objection of Missouri, a downstream basin state. The conclusion that Missouri's concern is focused on the transbasin character of the permit is supported by the fact that Missouri routinely declines to oppose large upstream consumptive use permits that support in-basin economic activity.<sup>21</sup> Thus, the dispute renews attention to the legal status of transbasin water transfers from the Missouri Basin in the absence of an interstate compact, judicial apportionment, or congressional decree. The North Dakota Garrison permit and Missouri's opposition to it raise the question of whether any limits exist on the capacity of a single state in the Missouri River Basin to permit transbasin diversions from federal reservoirs. A further question is whether the federal agencies that manage developed rivers, such as the Missouri, themselves possess legal authority to license such diversions. These questions are important: the possibility of a demand for future transbasin diversions is real, and meeting this demand may serve the broad public interest.

An interbasin transfer is the physical transportation of water out of one natural basin and into another; one area gains from an interbasin transfer and another loses.<sup>22</sup> The idea is hardly new. One of the earlier water cases to reach the United States Supreme Court was *New Jersey v. New York*,<sup>23</sup> in which the State of New York proposed the diversion of 600 million gallons per day from the Delaware River into the Hudson River Basin. Justice Holmes, writing for the Court, concluded that the issue of interbasin transfer was irrelevant and a mere makeweight argument: "[T]he removal of water to a different watershed obviously must be allowed at times unless States are to be deprived of the most beneficial use on formal grounds. In fact it has been allowed repeatedly and has been practiced by the States concerned."<sup>24</sup> Numerous other examples of large-scale transbasin diversions exist, such as the importation of water to Denver from the western slope of the Rocky Mountains, the Colorado-Big Thompson

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20. *Id.* at 2–3.

21. *Id.* at 5 (focusing on the adverse impacts of "significant out of basin transfers").

22. NATIONAL WATER COMM'N, WATER POLICIES FOR THE FUTURE 317 (1973).

23. *New Jersey v. New York*, 283 U.S. 336 (1931).

24. *Id.* at 343.

Project, the Fryingpan-Arkansas Project, and the Colorado River Aqueduct.<sup>25</sup>

Contemporary discussion of the issue can begin conveniently with the report of the National Water Commission (NWC) in 1973. Congress included in its charge to the NWC an instruction that it identify alternative ways of meeting future water needs, “giving consideration, among other things, to interbasin transfers.”<sup>26</sup> In its report, the NWC recognized that interbasin transfers were numerous, and that:

As economic demand for water increases, as available water supplies in areas of shortage shrink, as technological capability improves, and as national income grows, the feasibility of interbasin transfers increases and the scale of the proposals grow larger . . . .

Congress has the power either to prohibit or to require an interstate, interbasin transfer. The ultimate decisions as to criteria for design, construction, review, benefited areas, repayment, protection for areas of origin, environmental safeguards, and other aspects of such interbasin transfers are all Congress’s to make.<sup>27</sup>

During the era in which the NWC wrote, interstate, interbasin transfers were central to water resources development planning.<sup>28</sup> It was no accident that Professor Sax titled the first chapter of his groundbreaking law school textbook on water law “Public Planning for Water Use: The Northwest-Southwest Diversion.”<sup>29</sup> In the decades that followed, however, circumstances changed, and the idea of large-scale transbasin diversions moved offstage. Area-of-origin states such as Washington were able to assert political power sufficient to thwart proposals; the tide of federally funded water resources projects ebbed, concerns with pollution and ecosystem effects received both legal and policy recognition, and federal spending priorities changed.<sup>30</sup>

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25. See, e.g., RALPH W. JOHNSON, NAT’L WATER COMM’N, MAJOR INTERBASIN TRANSFERS LEGAL ASPECTS 16 (1971); DEAN. E. MANN, NAT’L WATER COMM’N, INTERBASIN WATER TRANSFERS: A POLITICAL AND INSTITUTIONAL ANALYSIS 4 (1972).

26. National Water Commission Act, Pub. L. No. 90-515, § 3(a)(1), 82 Stat. 868, 868 (1968).

27. NATIONAL WATER COMM’N, *supra* note 22, at 329–30.

28. *Id.* at 317.

29. JOSEPH L. SAX, WATER LAW, PLANNING AND POLICY: CASES AND MATERIALS 5 (1968).

30. See A. Dan Tarlock, *Putting Rivers Back in the Landscape*, 14 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 1059, 1090 (2008) (discussing the federal government’s “withdrawal from subsidized water development”).

The issue of transbasin water diversion and opposition to it is, therefore, hardly new. For several reasons, however, this recurring and unsettled issue gains fresh relevance in the current of changing circumstances. First, it is becoming apparent that we may be entering a period of climate change or variability. As Professor Leshy summarized recently, “[c]urrent patterns of water use, and the enormous infrastructure built to support them, are based on historic climate patterns as we have understood them, but a near-consensus among climatologists holds that our hydrologic future will not simply mimic the past.”<sup>31</sup>

This general summary has particular application to the American West, which is getting drier.<sup>32</sup> The most recently published modeling results indicate warming well beyond the worldwide average, suggesting temperature increases from four to thirteen degrees Fahrenheit.<sup>33</sup> Any such increases will result in smaller snowpacks, earlier snowmelt, accelerated flood-control releases, more extreme flood events, receding glaciers, more evaporation, and less groundwater.<sup>34</sup> Most models foretell of water shortages, lack of storage capacity to meet seasonally changing river flows, and transfer of water from agriculture and industry to municipal use.<sup>35</sup> Significantly, the same models conclude that anthropogenic global warming is responsible for more than half of the well-documented changes to the hydrological cycle from 1950–1999.<sup>36</sup> Over the last half of the twentieth century, the West’s mountains received less winter snow and more rain, with snow melting earlier, causing rivers to flow more strongly in the spring and less strongly in the summer.<sup>37</sup>

As an initial point, the American West provides a vivid example of an emerging regional water shortage, resulting in substantial part from global warming and made more acute by an assumption that human population there will increase without limit. Where water management issues are involved, the West, however, simply provides the first good example of a problem that has the potential to become commonplace. Whether water

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31. John D. Leshy, *Notes on a Progressive National Water Policy*, 3 HARV. L. & POL’Y REV. 133, 133 (2009).

32. STEPHEN SAUNDERS ET AL., HOTTER AND DRIER: THE WEST’S CHANGED CLIMATE 7 (2008), available at <http://www.rockymountainclimate.org/website%20pictures/Hotter%20and%20Drier.pdf>.

33. W. GOVERNORS ASS’N, WATER NEEDS AND STRATEGIES FOR A SUSTAINABLE FUTURE 21 (2006), available at <http://www.westgov.org/wga/publicat/Water06.pdf>.

34. *Id.*

35. Tim Barnett et al., *Human-Induced Changes in the Hydrology of the Western United States*, 319 SCIENCE 1080, 1083 (2008).

36. *Id.*

37. *Id.* at 1080.

flows are altered by the global warming phenomenon or turn out simply to have been measured inaccurately, or whether population-rich or consumption-heavy regions outpace their supplies, it is likely that water-short regions will look to water-abundant regions for relief, even if the latter happen to be in another basin and disinclined toward sharing. Although this essay focuses on the Missouri River and the arcane aspects of the laws that apply to it, the decision-making process that it represents can apply to any river basin in the United States that is asked to yield surplus water supplies to meet needs in other basins.

Second, the Missouri River reservoirs contain a significant supply of mountain runoff that is, in pure quantity terms, unused and available to meet needs beyond the boundaries of the basin.<sup>38</sup> In fact, because historically large downstream calls on reservoir waters to support navigation are diminishing, some argue that the available supply in the reservoirs is actually increasing.<sup>39</sup>

At present, the cost and technical feasibility of transporting water westward or southward by pipeline may seem to be prohibitive, but real shortages and changing economics elsewhere are known to alter quickly the calculation of costs and benefits.<sup>40</sup> That large-scale transbasin diversions can be a matter of practical concern is supported by the example of the Great Lakes states, which responded with noteworthy vigor when confronted with proposals to export waters of the Great Lakes to other basins.<sup>41</sup> Moreover, as a series of past proposals for Great Lakes water have suggested, a very efficient, available method for transbasin transfers is the release of runoff waters stored in lakes and reservoirs for transport downstream in the main river channel and ultimate diversion much closer to the river's mouth.<sup>42</sup> In sum, this essay contemplates that during times of emergency or economic demand elsewhere, the great Missouri River reservoirs may be seen as an opportunity to augment supplies in other basins and that certain chapters in the river's legal history may serve as

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38. Sandra Zellmer, *Missouri River Basin*, in 4 WATERS AND WATER RIGHTS § I(C) (Robert Beck & Amy Kelley eds., 2009).

39. *Id.*

40. See, e.g., Emily Underwood, *Wild Turkey, Gunfire, and Great Big Pipelines*, HIGH COUNTRY NEWS 5 (July 20, 2009), available at <http://www.hcn.org/issues/41.12/wild-turkey-gunfire-and-great-big-pipelines> (describing plans to build a water pipeline from southwest Wyoming to Colorado's front range).

41. Sonya F. Palay, *Muddy Waters: Congressional Consent and the Great Lakes—St. Lawrence River Basin Water Resources Compact*, 36 HASTINGS CONST. L.Q. 717, 721 (2009).

42. Chris A. Schafer, *Great Lakes Diversions Revisited: Legal Constraints and Opportunities for State Regulation*, 17 T.M. COOLEY L. REV. 461, 463–66 (2000).

precedent for other basins which may consider diversions from the Missouri and other basins.

Third, individual states in the basin may decide to market reservoir water as a means of financing state government. A typical assumption in the discussion of transbasin diversions is that area-of-origin states will vigorously oppose any export scheme,<sup>43</sup> but this is no more than a handy conclusion and may not stand up as circumstances change. Equally counter to standard assumptions is the possibility that Native American tribes, always in need of capital financing but with only limited opportunity to irrigate or industrialize on tribal lands, may choose to market surplus water as a means of financing priority tribal objectives.<sup>44</sup>

There is no settled vision of the river's future use. The underlying theme here is the recognition of a competition between a vision of the river's water as a commodity and a vision of it as a natural ecosystem resource. As a commodity, the river's water is available to serve the needs of a national economy in which water is growing in value as it becomes scarcer. As a natural ecosystem resource, the value of the river is seen as the flow itself, creating not only power and navigation, but ecosystem maintenance and recreation. Professor Tarlock writes: "Rivers have . . . often been conceptually and functionally 'detached' from their surrounding landscape, and river channels and corridors ceased to be considered valuable resources as rivers were viewed exclusively as commodities."<sup>45</sup> This essay expands upon the commodity concept, suggesting that a changing climate combined with altered demand and new technologies may add a note of inevitability.

### III. LEGAL TOOLS FOR ALLOCATING WATERS IN FEDERAL RIVERS, RESERVOIRS, AND CHANNELS

State and federal governments can resolve transbasin water issues by a variety of means, all of which are familiar and enjoy broad legal recognition. First, private lawsuits between water users on the same stream but in different states may resolve largely local disputes but are of little

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43. NAT'L RESEARCH COUNCIL, *WATER TRANSFERS IN THE WEST* 257–59 (1992).

44. John P. Guhin, *The Law of the Missouri*, 30 S.D. L. REV. 346, 471 (1985) (noting in suits resolving Indian water rights the issue is often "the amount of water to be allocated to the Indian reservation").

45. Tarlock, *supra* note 15, at 11 (citations omitted).

effect when applied to larger streams and rivers.<sup>46</sup> Second, equitable apportionment litigation between states as sovereigns may be pursued in federal court.<sup>47</sup> In these cases, the U.S. Supreme Court has original jurisdiction and applies federal common law rather than state law.<sup>48</sup> Third, interstate compacts may be negotiated by states in which waters of a stream are apportioned, but the Compact Clause of the United States Constitution requires congressional approval of such agreements in order for them to be enforceable.<sup>49</sup> Finally, Congress enjoys the power to allocate streams unilaterally in the national interest.<sup>50</sup>

It is in the absence of any of these processes that states, federal water management agencies, and private water developers may initiate transbasin transfers. Each state and tribe in a basin is entitled to an equitable share of the flow of interstate rivers and their tributaries,<sup>51</sup> but absent express recognition by way of a compact, equitable apportionment, or federal statute, the amounts of these entitlements remain ill-defined.

A developed river basin such as the Missouri can be tapped for out-of-basin uses in a variety of ways. The water stored behind a reservoir falls into congressionally specified use categories, which determine the nature of claims that can be made on it.<sup>52</sup> Thus, in the Flood Control Act of 1944, it is stipulated that the Missouri River dams are to be operated for flood control, navigation, irrigation, and hydropower development.<sup>53</sup> This law also allows the Corps to declare certain waters “surplus” and available for marketing.<sup>54</sup> Although there is little specific law on the question, presumably these statutory uses preempt any inconsistent use recognized under state law. As a practical matter, the statutory power of federal agencies to operate the dams also preempts state law, since decisions on

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46. Douglas L. Grant, *Private Interstate Suits*, in 4 WATERS AND WATER RIGHTS § 44.01 (Robert Beck & Amy Kelley eds., 2009).

47. Douglas L. Grant, *Equitable Apportionment Suits Between States*, in 4 WATERS AND WATER RIGHTS § 45.01 (Robert Beck & Amy Kelley eds., 2009).

48. *Id.*

49. See *Equitable Apportionment*, *supra* note 2, at 402–03 & n.85 (discussing “[f]ederal power to allocate interstate waters by congressional legislation”).

50. Douglas L. Grant, *Apportionment by Congress*, in 4 WATERS AND WATER RIGHTS § 47.01 (Robert Beck & Amy Kelley eds., 2009).

51. Grant, *supra* note 47, § 45.01.

52. *Id.*

53. Zellmer, *supra* note 38, § III(A).

54. *Id.* § IV(E).

such routine matters as the scheduling of releases have a direct bearing on the availability of supplies for other uses.<sup>55</sup>

#### IV. ENERGY TRANSPORTATION SYSTEMS, INC.

In 1974 the Wyoming State Legislature authorized its State Engineer to issue permits from the Madison groundwater formation to Energy Transportation Systems, Inc. (ETSI), a private joint venture, for use in a coal slurry pipeline designed to ship Great Plains coal to the south central United States.<sup>56</sup> Coal slurry is a mixture of pulverized coal and water, and a slurry pipeline efficiently transports bulk coal. The Wyoming groundwater permits entitled ETSI to withdraw an average of 15,000 acre-feet of water per year.<sup>57</sup>

The success of the ETSI proposal depended on a world influenced by the OPEC oil embargo of the 1970s—a world of inflation, energy shortages, and regulated railroad shipping rates.<sup>58</sup> These factors had all disappeared by the early 1980s and the ETSI project was ultimately abandoned, but the events that occurred during project development provide a case study for a time when transbasin diversions were proposed.

The proposed ETSI well field was located adjacent to the Wyoming-South Dakota border and presented a challenge to South Dakota's water managers and policy makers. The projected drawdown of the Madison aquifer over time was a direct threat to municipal well fields in South Dakota, and the effect on surface water flows threatened drinking water and waste management, as well as environmental and aesthetic impacts on the tourist and outdoor activity economy of the Black Hills region.<sup>59</sup>

South Dakota faced an uneasy situation. Its option to actively resist potential damage was limited to lengthy litigation with little prospect of success. This situation changed dramatically when, in 1981, ETSI expressed a willingness to look to the Oahe Reservoir as a primary source for its project and to hold its Wyoming water rights as a reserve.<sup>60</sup> A

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55. See generally *id.* § V(A) (explaining the various acts granting power to the federal government to regulate dammed areas).

56. Guhin, *supra* note 44, at 380.

57. Zellmer, *supra* note 38, § IV(E).

58. *Id.*

59. See William J. Janklow, *South Dakota and the ETSI Experience*, in *NEW SOURCES OF WATER FOR ENERGY DEVELOPMENT AND GROWTH: INTERBASIN TRANSFERS*, at 3.58, 3.68 to 3.69 (1982), available at <http://ufdcweb1.uflib.ufl.edu/ufdc/?b=WL00000321&v=00001>.

60. *Id.* at 3.68.

pipeline carrying Missouri River water from the Oahe Reservoir to Wyoming coal preparation stations presented South Dakota with several advantages.

First, the proposed pipeline option avoided the need for a legal confrontation over the Madison aquifer water permits. Second, it allowed a practical method for addressing another state issue—the delivery of reliable supplies for domestic and stock watering use in the open range between the Missouri River and the Black Hills.<sup>61</sup> ETSI was willing to contract to provide water to western South Dakota communities along the pipeline route, a result that would otherwise be achieved only by large-scale public subsidy. Third, ETSI also proved willing to pay money to the State of South Dakota for the Oahe water right, a bold notion when viewed in the context of western water law systems that are based on rights claimed free of charge to private users.<sup>62</sup>

Fourth, the U.S. Supreme Court in 1982<sup>63</sup> ruled that the Constitution's Commerce Clause precluded states from preventing exports of water from within their boundaries for parochial, political, or economic reasons; in other words, water is an item of commerce, subject to federal regulation, and states may not interfere with commerce in water.<sup>64</sup> South Dakota interpreted this ruling as a precursor to an active water market in which it hoped to be an early entrant. Finally, the timing of this breakthrough was significant because it coincided with a new requirement by the federal executive that state and local governments must contribute a share toward federally subsidized water projects within their boundaries. Economically advanced states were in a position to meet the local share requirement, but South Dakota, with a small population and an agrarian economy, was not in a position to contribute, making it considerably more difficult, if not impossible, to compete for federal subsidies. ETSI's willingness to pay for Oahe water thus provided a potential fund on which future water development would be based.<sup>65</sup>

This innovative approach required supporting state legislation by a special session of the South Dakota Legislature, but as the pieces of the complex puzzle came into place, the Governor summarized:

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61. *Id.* at 3.67.

62. *Id.* at 3.68.

63. *Id.* at 3.73.

64. *See Sporhase v. Neb. ex rel. Douglas*, 458 U.S. 941, 953–54 (1982) (recognizing the “Western States’ interest . . . in conserving and preserving scarce water resources,” while categorizing such interests as “irrelevant” to any commerce clause inquiry and granting Congress the “power to deal with” water problems on a national scale).

65. Zellmer, *supra* note 38, § IV(E).

Once this agreement began to take shape and it appeared that our goals with respect to preserving the Madison Formation, providing water to Western South Dakota communities, and obtaining money for water development were actually achievable, it became impossible for South Dakota to reject this virtual bird in the hand in favor of protracted and uncertain litigation that might accomplish only one of our goals.<sup>66</sup>

Success of the proposed transbasin diversion depended upon a large supply of unappropriated water and a legally valid state water right. State water law is based on the familiar principal of seniority of rights, and the availability, value, and security of a right to use water is dependent on its original appropriation date.<sup>67</sup> Because virtually all of the surplus water impounded behind the Oahe and Garrison dams was then (and is now) unappropriated under state law, the ETSI project developers were in a position to claim a secure senior water right, assuming that state water law governed.

Implementing the deal required special state legislation in order to address several specific problems. “The first was the provision of the South Dakota State Constitution which prohibits the legislature from granting to any private concern any special privilege, franchise, grant, or immunity . . . and prohibits . . . special legislation where the same purpose can be accomplished through a law of general applicability.”<sup>68</sup> The solution was a law that allows a state-chartered special district—the South Dakota Conservancy District—to apply for and to obtain water rights for the purpose of transferring them to third persons for consideration in energy development in and out of the state. Nothing in the legislation was specific to ETSI, and the general statute remains on the books.<sup>69</sup>

Under state water law, water rights are issued to successful applicants free of financial charge.<sup>70</sup> The ETSI developers, however, were willing to pay the State of South Dakota for water, provided that a lawful mechanism for the purpose could be established. Arranging payment to the

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66. Janklow, *supra* note 59, at 3.69.

67. See *Equitable Apportionment*, *supra* note 2, at 383 (describing actions by states to claim “ownership” of waters).

68. Janklow, *supra* note 59, at 3.69.

69. A full account is available at: John H. Davidson, *South Dakota’s Special Water Districts—An Introduction*, 36 S.D. L. REV. 500, 533 (1991).

70. *Id.* at 530.

Conservancy District solved this problem and, as a practical matter, put the State in the business of selling water rights to energy companies, whether in or out of the state.<sup>71</sup>

South Dakota's legal strategy could not be limited to state legislation, however, because the water to be appropriated lay in storage behind the federal Oahe Dam. In order for the State's scheme to succeed, it required recognition of the state water right (and, it follows, the lucrative sales contract) by the appropriate federal water management agency. As it happens, however, the Flood Control Act of 1944,<sup>72</sup> which governs management of the Missouri River, delegates authority to two agencies—and the statutory difference between the two is substantial. The U.S. Army Corps of Engineers is charged with constructing the large dams on the main river channel and managing them for flood control, navigation, and hydropower.<sup>73</sup> The Bureau of Reclamation, part of the Department of the Interior, is charged with developing projects that carry water from the main reservoirs to various irrigation projects to be developed in the upper basin.<sup>74</sup> The irrigation projects from the dams on the main channel never materialized and are generally agreed to be impractical.<sup>75</sup> The mixture of legislative authorizations caused the U.S. Army Corps of Engineers to construct and operate the dams, reservoirs, and navigation channel, while the Bureau of Reclamation maintained paper authority but few projects on the ground.<sup>76</sup>

The laws that govern the operation of the Bureau of Reclamation provide water marketing authority, as well as a saving clause that states:

Nothing in this Act shall be construed as affecting or intended to affect or in any way interfere with the laws of any State or Territory relating to the control, appropriation, use or distribution of water in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in

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71. *See id.* at 534 (listing "marketing of water for energy use" as one of the Conservancy District's purposes).

72. Navigation and Flood Control Act of 1944, Pub. L. No. 78-534, ch. 665 (Dec. 22, 1944).

73. W.A. Hillhouse II, *Federal Law of Water Resources Development*, in *FEDERAL ENVIRONMENTAL LAW* 844, 846 (Erica L. Dolgin & Thomas G. P. Guilbert eds., 1974).

74. *Id.* at 848.

75. *See* Guhin, *supra* note 44, at 430 (noting the tentative but unlikely future course of the project).

76. Zellmer, *supra* note 38, § IV(E).

carrying out the provisions of this Act, shall proceed in conformance with such laws.<sup>77</sup>

Section 8 thus requires the Bureau of Reclamation to conform to state law in the delivery of mainstem water, a constraint that was viewed at the time as basic by the upper basin states, which were and are concerned that state control may be subordinated to the U.S. Army Corps of Engineers's traditional preference for managing rivers for flood control and navigation. For South Dakota, a reservoir withdrawal permit issued by the Bureau of Reclamation would be subject to § 8, and would validate the ETSI water right, because section 9(c) of the Flood Control Act of 1944 states that "reclamation . . . developments [are] to be undertaken by the Secretary of the Interior . . . governed by the Federal Reclamation Laws."<sup>78</sup>

The State of South Dakota thus reasoned that a significant portion of the water in storage behind the Oahe Dam was intended for irrigation that was unlikely to be developed in the foreseeable future. Additionally, it reasoned that the use of "irrigation water" ought to be governed by reclamation laws, including § 8 recognition of state water permits, even when the waters are marketed for energy development.<sup>79</sup>

In contrast, section 6 of the Flood Control Act authorized the U.S. Army Corps of Engineers to "make contracts . . . for domestic and industrial uses for surplus water that may be available at any reservoir under the control of" the Corps.<sup>80</sup> Thus, were the Corps to designate waters in the reservoirs as "surplus," it could market the water independently of the states, without recognition of claimed state water permits, and without risk of sale by the state. The water would be subject to a mere administrative permit rather than a legally recognizable appropriation of a property interest. Because the Corps's constitutional authority is pursuant to the Commerce Clause as expressed through the navigation servitude,<sup>81</sup> it may be assumed that the Agency enjoys the broadest discretion in administering its statutory authority to market surplus water, even in the face of opposition from basin states.

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77. Reclamation Act of 1902 § 8, 43 U.S.C. § 383 (2006).

78. Navigation and Flood Control Act of 1944, Pub. L. No. 78-534, ch. 665 (Dec. 22, 1944).

79. The State took comfort from upstream litigation involving dams that were in fact constructed by the Bureau of Reclamation primarily for irrigation. In that case, reclamation laws do apply and § 9(c) gives the Bureau of Reclamation industrial water marketing authority.

80. 33 U.S.C. § 708 (2006).

81. See *Equitable Apportionment*, *supra* note 2, at 402 (discussing the move from limited federal power based on navigability to increased federal power "with the full reach of the Commerce Clause").

The ETSI project collapsed as economic circumstances changed, but the process still matters. First, it provides an example of a case in which state initiative was used to facilitate a transbasin transfer. Second, it demonstrates the substantial authority possessed by federal water management agencies. Needless to say, there was widespread opposition to the ETSI proposal, particularly from downstream states in the basin, as well as from the railroads that competed in the business of hauling coal and across whose tracks the slurry pipeline needed to pass.<sup>82</sup> The abundance of litigation and proposed legislation spawned by the ETSI proposal is remarkable by any standard.<sup>83</sup>

Most important is the federal court challenge brought by the lower basin states that were concerned with what they saw as a precedent for out-of-basin transfers at the initiative of a single upper basin state; the suit sought to invalidate the water marketing permit issued to South Dakota by the Bureau of Reclamation.<sup>84</sup> The challenge raised the general question of whether an upper basin state or any basin state held independent rights in some of the stored reservoir water. This water right was issued, after all, by a state rather than a federal agency. The Missouri River is operated under the Flood Control Act of 1944, under which the development of the great dams in the upper basin was undertaken. The Act authorized the reservoirs for multiple purposes. Most benefits flowed to the lower basin states in the form of flood control and navigation improvement, while the upper basin states and tribes received a string of recreation reservoirs and access to hydroelectric power. The ultimate plan of the Flood Control Act was for the Bureau of Reclamation to develop large-scale irrigation projects in the upper basin,<sup>85</sup> but these hopes did not materialize.

The downstream states of Iowa, Missouri, and Nebraska brought suit in federal district court in Nebraska to block the ETSI diversion from Oahe Reservoir.<sup>86</sup> The issue then was a narrow one: whether Congress in the Flood Control Act of 1944 intended the reservoir behind Oahe Dam to be a reclamation facility subject to the water marketing authority of the Secretary of the Interior.<sup>87</sup> The district court ruled for the plaintiff lower basin states,<sup>88</sup> and the court of appeals affirmed.<sup>89</sup> The U.S. Supreme Court

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82. Janklow, *supra* note 59, at 3.59, 3.71.

83. *See id.* at 3.71 (rebutting the complaints of the various downstream states).

84. ETSI Pipeline Project v. Missouri, 484 U.S. 495, 498 (1988).

85. Guhin, *supra* note 44, at 352.

86. ETSI Pipeline Project, 484 U.S. at 505.

87. Missouri v. Andrews, 586 F. Supp. 1268, 1269 (D. Neb. 1984).

88. *Id.* at 1281.

89. Missouri v. Andrews, 787 F.2d 270, 287 (8th Cir. 1986).

held that the Secretary of the Interior lacked authority under the Flood Control Act of 1944 to make a contract allowing the state to use (and sell) water and held the contract void.<sup>90</sup> The decision was a singular victory for the downstream states.

## V. CONTROL OR OWNERSHIP OF MISSOURI RIVER WATERS

The ETSI ruling by the U.S. Supreme Court held that because the reservoirs are under the control of the U.S. Army Corps of Engineers, the Corps has the sole authority to market water from them.<sup>91</sup> Therefore the Corps may market water that it determines to be “surplus,” that is, not utilized to fulfill an authorized project purpose.<sup>92</sup> Described in this way, the Corps’s assertion of power is broad and leaves open the question whether any basin state has independent rights in stored reservoir water, absent express congressional assignment. The Corps can assert that water held for irrigation is now dedicated to “project purposes,” such as hydroelectric generation, or it can declare water to be “surplus” and available for marketing by the Agency.

In the ETSI case, the Supreme Court interpreted the Flood Control Act of 1944 to deny the Bureau of Reclamation the authority to contract to supply Oahe water for industrial use.<sup>93</sup> Though the Court did not directly address “the relative interests of the United States and South Dakota in Lake Oahe water,”<sup>94</sup> its reading of section 6 appears fatal to South Dakota’s claim. The Court read the language as granting the Corps “exclusive authority to contract to remove water for industrial uses” from reservoir projects, like Oahe, that the Corps has constructed and operates.<sup>95</sup> The Court found the language of section 6 “plain in every respect.”<sup>96</sup>

The statutory authority of the Corps to market surplus water is further strengthened by a general power to allocate project water pursuant to the navigation power. This path seems to be supported by the Supreme Court’s opinion in *Arizona v. California*,<sup>97</sup> where the Court recognized the power of Congress to apportion river waters, presumably based in the navigation

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90. *ETSI Pipeline Project*, 484 U.S. at 505.

91. *Id.* at 506.

92. Guhin, *supra* note 44, at 378.

93. *ETSI Pipeline Project*, 484 U.S. at 505.

94. *Id.* at 498 n.2.

95. *Id.* at 506.

96. *Id.* at 505.

97. *Arizona v. California*, 373 U.S. 546, 587 (1963).

power.<sup>98</sup> Further, as Professor Trelease has observed, the court-appointed Special Master in Arizona hinted at another source of congressional power to allocate water that the Court did not mention—the government’s control over water it has stored in federal reservoirs. Trelease describes the power as follows:

Impounded water, not appropriated by any person, could be similarly regarded as the property of the United States, and this theory could be used to justify the distribution of water by sale to those who would enter into contractual relations with the United States . . . .<sup>99</sup>

. . . .

If, upon the exercise of any of these powers, Congress can sell and distribute the stored waters, it probably follows that it can choose the state in which the waters are to be used and the persons who are to use the waters. Perhaps this has already been done to a limited extent. The 1944 Flood Control Act authorized the Secretary of the Army, who builds and controls flood control and navigation dams, to make contracts with municipalities, private concerns, or individuals for domestic and industrial uses of surplus water available at any reservoir under his control.<sup>100</sup>

Thus described it is a fair conclusion that under existing legislation the Corps enjoys broad unilateral authority to market water out of basin. This power extends to all water not needed immediately for specified project purposes. But, the supply of water that is potentially available is enlarged considerably by the unused irrigation water and by the possibility that the demise of navigation on the Missouri River will make water now dedicated to that purpose “surplus” as well.

So, where does this leave the states and tribes? Each is entitled to make use of its equitable share of the flow of the Missouri River. The precise amount of this entitlement can be quantified by legislative or judicial process, but this has not occurred. Presumably a state can issue a state

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98. Frank J. Trelease, *Arizona v. California: Allocation of Water Resources to People, States, and Nation*, 1963 SUP. CT. REV. 158, 177 (1963).

99. *Id.* at 181.

100. *Id.* at 181–82.

water permit under state law from the state's equitable share, and this can be for an out-of-basin use.

If, however, the water to be diverted under the state permit is available only because of the storage capacity provided by the federal reservoirs, the question is whether water, once captured and stored pursuant to federal law, can ever be claimed by a basin state. The question has not been answered and awaits future litigation. An argument exists, however, that the Flood Control Act of 1944 has given the Corps unqualified authority over all waters captured and stored in reservoirs, that is, that Congress has allocated the reservoir waters.

## VI. THE INTERSTATE COMPACT OPTION

As proposals to divert water from the Missouri Basin have created controversy over time, so too have proposals for diversion from the vast Great Lakes Basin, including diversion to recharge the Ogallala aquifer and to augment Mississippi River flows in support of navigation.<sup>101</sup> Rather than await litigation, the basin states and Canadian provinces of Ontario and Quebec signed a Great Lakes Charter, which committed the governors and premiers to monitor existing and future diversions, regulate diversions in excess of a minimum gallonage, and notify all other states and provinces of any new or increased diversions over five million gallons per day.<sup>102</sup> This early "hand-shake" agreement has evolved through a series of more specific versions, and at the heart of each is the question of whether transbasin diversions should be formally prohibited by law. In 1986, Congress authorized any governor to veto a proposed out-of-state diversion.<sup>103</sup> Finally, a formal Great Lakes-St. Lawrence River Basin Compact was adopted by the states and approved by Congress, making it a federal compact with the force of law.<sup>104</sup> Most important, the Compact prohibits "[a]ll [n]ew or [i]ncreased [d]iversions,"<sup>105</sup> defining "diversions" as "transfer of Water from the Basin into another watershed."<sup>106</sup> The Compact represents federal approval of a state-run comprehensive water management

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101. JOSEPH L. SAX ET AL., *LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS* 777–78 (3d ed. 2006).

102. Palay, *supra* note 41, at 724–25.

103. Water Resources Development Act of 1986, 42 U.S.C. § 1926d-20(d) (2006).

104. Great Lakes-St. Lawrence River Basin Compact, Pub. L. No. 110-342, 1985 U.S.C.C.A.N. (122 Stat.) 3739.

105. *Id.* at 3752.

106. *Id.* at 3740.

regime. It makes waters of the Great Lakes Basin “subject to the sovereign right and responsibilities of the [p]arties.”<sup>107</sup>

### CONCLUSION

States and basins that enjoy an abundance of water but are in a position, due to either proximity or developed capacity, to serve needs in other regions have authority to do so under most existing legal regimes. As things stand in the Missouri River and some other large river systems, the U.S. Army Corps of Engineers has the discretion to implement export infrastructure. In general, this broad discretion is derived from the history of affirmative federal laws sponsoring multiple purpose water resources development.<sup>108</sup> Based on a firm constitutional foundation,<sup>109</sup> the United States has on its own constructed “navigation improvements, flood control works, irrigation projects, [and] hydroelectric facilities; . . . [and has] regulated the use of the navigable waters by others; recently taken the lead on river basin planning; . . . collected and disseminated vast amounts of data and information about the Nation’s waters; and granted or lent funds for various water-related purposes.”<sup>110</sup>

The absence of federal law necessary to implement this menu of development activities has left the Corps and the Bureau of Reclamation in a strong position to exercise the discretion necessary to adapt to changing water needs across the nation, providing that there is the political will to allow it. Stated in terms related directly to this symposium, the federal water resources laws are adaptable to support transbasin diversions.

Meeting the needs of chronically water-short regions by means of transbasin diversions would create a result that policymakers have long attempted to avoid by enacting ecosystem protection statutes such as the Endangered Species Act. That is, the prospect now exists that river flows will be more than ever a mere commodity, and natural river systems a rare thing indeed.

Against this centralized and adaptable system of federal water resources laws now comes a new model in The Great Lakes Compact, in which basin states seem to have recognized the sweeping authority possessed by federal water resources agencies and utilized the Compact to reclaim control over

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107. *Id.* at 3745.

108. Hillhouse II, *supra* note 73, at 844–45.

109. *Id.*

110. *Id.*

potential transfers from the Great Lakes Basin. It is now possible for states in other river basins to consider whether there is reason to mimic the Great Lakes model and preempt agency law. Certainly, the Missouri Basin states have reason to reflect on this.<sup>111</sup>

In the absence of collective action of basin states, this essay points to a third model for transbasin diversion—unilateral action by a state or tribe. Although the ETSI proposal stumbled over South Dakota's rigid resistance on a Bureau of Reclamation permit, it is possible to imagine an identical proposal meeting success today.

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111. This brief essay will leave for another time the federalism issue—the question whether one group of states should be allowed to lockup needed supplies of an essential item of commerce. It may be imagined that The Great Lakes Compact caused eyebrows to be raised in the graves of the authors of the Federalist Papers.