

THE FEDERAL ROLE IN WATER RESOURCE MANAGEMENT

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INTRODUCTION

Mark Twain is often credited with having said that “whiskey is for drinking, water is for fighting over.” History amply demonstrates the truth of both assertions, although Twain probably was not the source of this bit of cleverness. It is true, however, that Mark Twain wrote that “hunger is the handmaid of genius.”¹ It is another way of saying, as economists often do, that incentives matter, a proposition the truth of which is amply demonstrated by the astounding growth over the last century in agricultural productivity to feed ever more hungry mouths. Also true must be this corollary to Twain’s bit of wisdom: thirst is the servant of innovation in water management. Again, history testifies to the power of incentives with blooming deserts, gleaming cities where potable water flows from every tap, ocean waters desalinated for human consumption, and water storage and conveyance on a massive scale. Yet human ingenuity has not stopped the drinking or the fighting. Incentives explain that, too.

The point, in a nutshell, is that we have done pretty well on the technology side of water management, but pretty poorly on the institutional side. That is what all of the fighting, and presumably some of the drinking, are all about. While we have figured out how to store water behind massive dams, move water over hundreds of miles, use less water for greater productivity, purify and reuse polluted waters, prevent the pollution of pristine waters and even reverse the flow of some rivers, we continue to fight over

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¹ MARK TWAIN, FOLLOWING THE EQUATOR: A JOURNEY AROUND THE WORLD 392 (Oxford University Press 1996) (1897).

who gets the water and how it is used. Perhaps we can take some satisfaction in knowing that the fistcuffs and worse that characterized the fighting of the old West have been replaced, for the most part, by political and legal battles. But the fighting over water continues. That may be good news for the whiskey sellers, but it is usually bad news for everyone else.

While examples of water wars are abundant, the controversy over the waters of the Apalachicola-Chattahoochee-Flint (ACF) river basin in the southeastern United States illustrates a present day political and legal struggle over water and at least five factors that promise more water fights in the future.² Those factors are: 1) the certainty of growing demand for water; 2) the certainty of recurrent droughts; 3) the reality that many water sources are transboundary (interstate and/or international); 4) the reality that, in the case of rivers and streams, some states have natural geographical advantages; and 5) the rising concern for environmental protection and ecosystem preservation. The controversy also reminds us of some persistent human weaknesses. First, we tend to rely on our own experiences of nature, notwithstanding that even recorded history provides ample evidence of variations well outside that experience.³ Second, we tend to see our own interests as those of the community.⁴ Finally,

² For a discussion of the history of the ACF dispute, see JOSH CLEMONS, INTERSTATE WATER DISPUTES: A ROADMAP FOR STATES (National Sea Grant Law Center), available at <http://www.olemiss.edu/orgs/SGLC/MS-AL/acf.htm>. See also Joseph W. Dellapenna, *Interstate Struggles over Rivers: The Southeastern States and the Struggle over the Hooch*, 12 N.Y.U. ENVTL. L.J. 828 (2005).

³ For example, in 1873 the Great Salt Lake reached a recorded elevation of 4211.5 feet. In 1963 it reached an historic low elevation of 4191.35 feet. In 1986 the lake exceeded its previous recorded high by a tenth of a foot, reaching to 4211.6 feet. This 1986 "flood" resulted in \$240 million in direct physical damage and up to \$1 billion in consequential damage, including the flooding of Interstate 80 on the south side of the lake. See STATE OF UTAH, THE GREAT SALT LAKE, website at <http://www.water.utah.gov/construction/gsl/lake%20page.htm> (last visited Sept. 28, 2008).

⁴ No effective advocate of public action will assert private benefits as the justification, rather they will invariably claim that the action for which they advocate will promote the public interest. Whether this is always pure rent seeking as public choice theory would have it or is at least sometimes the citizen (versus the consumer) side of the individual speaking will not be resolved here. See Mark Sagoff, *We Have Met the Enemy and He Is Us or Conflict and Contradiction in Environmental Law*, 12 ENVTL. LAW 283 (1982); see also Anne O. Krueger, *The Political Economy of the Rent-Seeking Society* 64 AMERICAN ECONOMIC REVIEW 291 (1974). But there seems little doubt that support for and

and particularly in the public arena, we tend to focus on how to resolve resource allocation disputes only after those disputes arise, often making it difficult to settle on the process for resolving the dispute, not to mention settling the dispute itself. Where institutions are not in place or where existing institutions are thought to be inadequate, there is, in other words, an inverse relationship between resource supply and the difficulty of agreeing to new or reformed institutional arrangements for the allocation of that supply.

The ACF river basin, which arises in Georgia and extends into Alabama and Florida, illustrates these institutional challenges. Beginning in 1939, the federal government undertook several projects to develop the basin including Buford Dam and the resulting Lanier Lake (reservoir) that supplies domestic and industrial water to Atlanta.⁵ Severe droughts in the early and mid 1980s led the Corps of Engineers, operator of Buford Dam, to propose a shift of 20 percent of Lake Lanier's storage capacity from hydro generation to municipal water supply.⁶ The state of Alabama sued the Corps claiming the provision of more water to Atlanta would lead to increased hydro power costs and more pollution in Alabama.⁷ Florida and Georgia intervened in the lawsuit; Florida claimed harm to the \$70 million Apalachicola Bay Oyster industry and Georgia asserted its sovereign authority to manage water within its borders. With the court's permission, the three states and the Corps agreed to study the problem and see if they could reach agreement. With Congressional approval, the

opposition to a particular public action are often both rooted in sincerely held beliefs that the public interest (and coincidentally the advocate's interest) will be served. A classic such disagreement over water policy was the very public dispute over the damming of Hetch Hetchy Valley in California. See Christine Oravec, *Conservationism vs. Preservationism: The "Public Interest" in the Hetch Hetchy Controversy*, in LANDMARK ESSAYS ON RHETORIC AND THE ENVIRONMENT, at 17 (Craig Waddell ed., 1998).

⁵ For a description of the history of water use and demand in the ACF Basin and a discussion of the ongoing conflict among the three states, see Barlow Burke, *Association of American Law Schools Conference: Transcript of the Section on Natural Resources in Atlanta, Georgia, January 5, 2004*, 21 GA. ST. U. L. REV. 245 (2004).

⁶ See CLEMONS, *supra* note 2; Dellapenna, *supra* note 2.

⁷ The lawsuit was filed June 28, 1990. Developments in the case from that date until 2005 are reported at *Alabama v. U.S. Army Corps of Engineers*, 382 F. Supp. 2d 1301 (N.D. Ala. 2005). See ROY R. CARRIKER, WATER WARS: WATER ALLOCATION LAW AND THE APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN, UNIV. OF FLA. COOP. EXTENSION SERV. DOC. FE 208 (2000).

result was the ACF Compact for the purpose of “promoting interstate comity, removing causes of present and future controversies, equitably apportioning the surface waters of the ACF, engaging in water planning, and developing and sharing common data bases.”⁸ The compact created the ACF Basin Commission comprised of the governors of the three states and a non-voting federal member.⁹ All decisions required unanimity¹⁰ and disagreements were to be resolved by non-binding mediation.¹¹ If agreement on apportionment of ACF waters was not achieved by the end of 1998, the compact would expire unless extended by agreement of all compacting parties. After several extensions the compact expired in 2003 without any resolution of the apportionment or management issues.

While most people agree that some form of river basin management is desirable for the ACF basin, there is little prospect that the controversy will be resolved by the three affected states, with or without active federal participation in a negotiated agreement. In all probability, the core dispute over the appropriation of ACF waters among the three states finally will be resolved by Congress or the United States Supreme Court. Why has this very public effort at river basin management failed? Why is federal intervention the only likely solution? And, most importantly, what might we learn from the ACF and other large and small water-related controversies about the most effective federal role in water resource management? Whether or not the federal government should play a bigger role and, in any event, precisely what role it should play is the central focus of this paper.

I. THE INSTITUTIONAL LANDSCAPE OF WATER ALLOCATION AND DISTRIBUTION

As with most matters of domestic law and policy, authority over water resources is divided among federal, state and local governments. Because local authority generally is delegated by the states and because the federal government has long deferred to the states on the assignment and enforcement of private rights in

⁸ Apalachicola-Chattahoochee-Flint River Basin Compact, Pub. L. No. 105-104, art. 1, 111 Stat. 2219 (1997).

⁹ *Id.* at art. VI(a), (b), (d).

¹⁰ *Id.* at art. VI(d).

¹¹ *Id.* at art. XIII(a)(5).

the use of water, state governments play a crucial and central role. Indeed, it is commonplace to assert that the states have a special interest in water, rooted in repeated and express federal deference,¹² if not in particular requirements of constitutional federalism. Nonetheless, the federal government has long played an important role in water policy and management and has the potential and constitutional authority to play a much bigger role in the future.

A. *The Constitution*

The United States Constitution says nothing explicit about the relative authorities of the federal and state governments in relation to water. Two provisions—the commerce clause of Article I, Section 8 and the property clause of Article IV, Section 3—stand as the principle sources of federal power to regulate and manage water.¹³ The treaty clause of Article II, Section 2 and the powers to tax, provide for the general welfare and for the national defense of Article I, Section 8 offer additional constitutional underpinning for some water related regulation and programming by the federal government.¹⁴

Ever since *Gibbons v. Ogden*, the commerce clause of Article I, Section 8 has been understood to grant Congress extensive

¹² In *California v. United States*, 438 U.S. 645, 653 (1978), the Supreme Court observed that in the context of western water policy there has been a “consistent thread of purposeful and continued deference to state water law by Congress.” In *United States v. New Mexico*, 438 U.S. 696, 702 (1978), the Court stated that “[w]here Congress has expressly addressed the question of whether federal entities must abide by state water law, it has almost invariably deferred to the state law.” In its recent water policy prospectus, the Department of Interior states that “[s]ince 1866, federal water law and policy has deferred to the states in the allocation and administration of water within their boundaries” and indicates an intention to give similar deference in the future. BUREAU OF RECLAMATION, U.S. DEP’T OF INTERIOR, WATER 2025: PREVENTING CRISIS AND CONFLICT IN THE WEST 3 (2003). Notwithstanding these and many other statements to similar effect, Reed Benson has argued that federal deference is a myth. Reed D. Benson, *Deflating the Deference Myth: National Interests vs. State Authority Under Federal Laws Affecting Water Use*, 2006 UTAH L. REV. 241 (2006). While Benson demonstrates that the federal government has significant water related powers, in the apparent interest of encouraging greater federal intervention in the future he gives less than warranted credence to Congressional and judicial statements of deference.

¹³ U.S. Const. art. I, § 8; U.S. Const. art. IV, § 3.

¹⁴ U.S. Const. art. II, § 2; U.S. Const. art. I, § 8.

authority over navigation.¹⁵ As with other aspects of interstate commerce, the authority to regulate navigation has come to reach far beyond navigable waters.¹⁶ Indeed, modern commerce clause doctrine would recognize extensive federal power to regulate water independent from any link to navigation.¹⁷ Under the post New Deal Supreme Court's expansive and pragmatic approach to defining the constitutional scope of Congress's powers, the reach of the federal power to regulate commerce is defined not by geography, but by a regulated activity's having some effect on interstate commerce.¹⁸ Thus, the presence of a sufficient hydrological link to navigable waters alone can establish federal power over water, but the absence of such a link does not necessarily mean that no federal power exists.

The property clause provides that "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting . . . Property belonging to the United States."¹⁹ Pursuant to this clause, Congress might have played the dominant role in water policy, particularly in those parts of the country once owned in a proprietary sense by the United States. But for many decades after the national founding it was Congress's policy to dispose of all lands not required for core government functions, and with those lands, consistent with the common law doctrine of riparianism, went rights to water. With the settlement of the American west came an entirely different approach to water rights and Congress was quick to embrace the first-in-time doctrine in its legislation relating to the disposal of western land and resources. The appropriation doctrine of water rights diverged from riparian

¹⁵ *Gibbons v. Ogden*, 22 U.S. 1, 70 (1824).

¹⁶ The Supreme Court has held, in the context of wetlands regulation under the Clean Water Act, that the geographical reach of the commerce power extends well beyond waters that are navigable in the traditional sense, but that by its terms the Clean Water Act applies to "only relatively permanent, standing or flowing bodies of water." *Rapanos v. United States*, 547 U.S. 715, 732 (2006). Of course, this statutory interpretation does not mean that federal jurisdiction can never reach beyond such waters under the commerce clause.

¹⁷ In *United States v. Lopez*, 514 U.S. 549 (1995), the Court identified three independent bases for establishing commerce clause jurisdiction. A link to navigable waters might satisfy one of these—"regulat[ing] the use of the channels of interstate commerce"—but a demonstration that the regulated activity "substantially affect[s] interstate commerce" would establish federal authority over water whether or not there is a link to navigable waters.

¹⁸ See *Heart of Atlanta Motel v. United States*, 379 U.S. 241 (1964).

¹⁹ U.S. Const. art. IV, § 3.

doctrine by decoupling rights to land and water. By exercising its authority under the property clause both to dispose of land and endorse the appropriation doctrine, Congress abandoned the significant powers that come with ownership as distinct from the powers inherent in sovereignty. Although for nearly a century it was assumed throughout the western states that all waters, including those occurring on lands retained by the United States, were subject to private acquisition under state law,²⁰ the Supreme Court recognized Indian and later federal proprietary interests in water in the name of reserved rights.²¹ With respect to these reserved rights and its other property interests, the property clause recognizes in the federal government the same powers attaching to any property interest in land or water. While these powers are not insignificant, the effect of federal reserved rights on water management relates as much to their uncertain definition as to the fact that they are an aspect of the divided authority and responsibility between the state and federal governments.²²

²⁰ The preeminent water lawyer of the mid 20th century observed that “[a]t no time prior to 1955 did I ever hear a suggestion that the reserved rights doctrine was anything but a special quirk of Indian water law.” Frank J. Trelease, *Federal Reserved Water Rights since PLLRC*, 54 DENV. L.J. 473, 475 (1977).

²¹ In *United States v. Rio Grande Dam & Irrigation Co.*, 174 U.S. 690, 703 (1899), the Court asserted that notwithstanding its explicit deference to state assignment of rights in water, the federal government retained its authority to prohibit assignments of right that would interfere with navigation and its own common law interests in “the continued flow of its [bordering] waters, so far, at least, as may be necessary for the beneficial uses of the government property.” A half century later, the Court distinguished reserved from public domain lands in finding that the FPC had exclusive power to grant a license for hydro power development on lands reserved for the purpose. *Federal Power Commission v. Oregon*, 349 U.S. 435, 448 (1955). Less than a decade later the Court held, without reference to either of these cases or any other authority, that the federal government had impliedly reserved water rights in all federal reservations. *Arizona v. California*, 373 U.S. 757 601 (1963). This open-ended invitation to expansive claims of federal reserved rights was limited a few years later in *United States v. New Mexico*, 438 U.S. 696 (1978). Noting that “[w]here Congress has expressly addressed the question of whether federal entities must abide by state water law, it has almost invariably deferred to the state law,” the federal reserved rights would be implied only “[w]here water is necessary to fulfill the very purposes for which a federal reservation was created.” *Id.* at 701.

²² In an appropriation system, it is clear that both Indian and federal reserved rights run from the date of the establishment of the reservation. This makes almost all Indian reserved rights very senior, with a much wider variation among federal reserved rights. The uncertainty lies in the quantity and timing of the entitlement. In both cases the quantity and timeframe of use is that necessary to fulfill the purposes of the reservation, determinations that must await an

B. *Federalism Plus—The Tribes*

Before turning to a brief discussion of the dominant role of state governments in the allocation of private water rights and the management of many water related resources, it is important to recognize the role of a third governing entity—tribal governments. In their capacity as “domestic dependent nations” tribes have significant control over internal affairs including the management of natural resources on tribal lands.²³ However, almost all tribal lands and their associated resources are held in trust by the United States government for the benefit of the tribes.²⁴ Thus the federal government has ultimate control of most tribal resources, although over the last few decades there has been a concerted effort by tribes, with some support from the federal government, to shift more responsibility for natural resource management to tribal governments. In the case of water, tribes with reservation lands have long been the beneficiaries of the Supreme Court’s holding in *Winters v. United States* that with the creation of Indian reservations came water rights sufficient to achieve the purposes of the reservation, which in most cases was agricultural production on arid lands requiring irrigation.²⁵ Although the recognition of these Indian reserved water rights was no less a surprise to holders of senior appropriation rights than was the later recognition of federal reserved rights to leading water lawyer Frank Trelease,²⁶ there is a strong equity justification for the former, if not the latter. As with federal reserved rights, the biggest problem posed by Indian reserved rights for twenty-first century water management is the uncertainty of what are mostly unquantified claims on water. As I will suggest below, the federal government can have some influence over this problem.

C. *The Central Role of the States*

As with all state powers, the U.S. Constitution says nothing specific about the states’ authority with respect to water. To the extent anyone took any interest in water management in the early history of the nation, it was universally accepted that state

adjudication of the rights.

²³ See *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1, 13 (1831).

²⁴ See *Johnson v. M’Intosh*, 21 U.S. (8 Wheat.) 543 (1823).

²⁵ *Winters v. United States*, 207 U.S. 564, 576 (1908).

²⁶ Trelease, *supra* note 20, at 475.

governments and particularly state courts would apply the common law principles that had long governed water matters in England and the colonies. Thus the basic rule was that owners of riparian land had a right to the continued flow and reasonable use of waters passing over or adjacent to their property, subject to the federal navigation servitude that derives from both common law and the commerce clause.

With expansion to the arid American west came the need for a different system of private rights—one that would allow water to be transported to and used on non riparian lands. The appropriation doctrine developed in parallel with the first in time-first in right approach to the acquisition of mineral rights, and in advance of Congressional resolution of many of the issues associated with private claims on the vast public domain. Thus, Congress first addressed both mineral rights and water rights in the context of many already established claims based on the first in time-first in right principle. In 1866 and again in 1870, Congress acknowledged the validity of these rights in the context of public lands mining legislation.²⁷ In the Desert Land Act of 1877 (essentially a homestead act) Congress explicitly affirmed that the right to use water on lands acquired under the Act “shall depend upon bona fide prior appropriation,” and that any unappropriated waters on such lands “together with the water of all lakes, rivers, and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights.”²⁸ Six decades later the Supreme Court would conclude that Congress’s general intention was that “the land should be patented separately; and that all non-navigable waters thereon should be reserved for the use of the public under the laws of the states and territories named.”²⁹

Thus, in what Andrea Gerlak has called the era of “state ingenuity and independence,”³⁰ from the late 1700s to the early

²⁷ Mining Act ch. 262, § 9, 14 Stat. 251, 253 (1866) (codified as amended at 43 U.S.C. § 661 (2000)); Act of July 9, 1870, ch. 235, § 17, 16 Stat. 217, 218 (current version at 43 U.S.C. § 661 (2000)).

²⁸ Desert Land Act, ch. 107, § 1, 19 Stat. 377, 377 (1877).

²⁹ Cal. Or. Power Co. v. Beaver Portland Cement Co., et al., 295 U.S. 142, 162 (1935).

³⁰ Andrea Gerlak, *Federalism and U.S. Water Policy: Lessons for the Twenty-First Century*, 36 PUBLIUS: THE JOURNAL OF FEDERALISM 231, 234 (2005).

1900s, it became firmly established that states would govern the assignment and enforcement of water rights—eastern states on the basis of the common law riparian doctrine and western states in reliance on the largely home grown doctrine of appropriative rights.³¹ In 1952, Congress further cemented the states' role as arbiters of water rights with the enactment of the McCarran Amendment thereby waiving federal sovereign immunity and agreeing to have the United States “joined as a defendant in any suit [in state court] for the adjudication of rights to the use of water of a river system or other source.”³² While the McCarran Amendment has application only to general adjudications and does not repeal federal court jurisdiction over controversies involving federal water rights, the Supreme Court effectively has precluded general adjudications in federal court because the “policy evinced by that legislation is the avoidance of piecemeal adjudication of water rights in a river system” and in recognition of “the availability of comprehensive state systems for adjudication of water rights.”³³ The Court has also interpreted the McCarran Amendment to give state courts jurisdiction over Indian reserved rights claims.³⁴

Although one might conclude that these state water rights systems are entirely the product of historical circumstances, it should not be ignored that they developed during an era of widespread reliance on private property and markets for the allocation of scarce resources. With rare exceptions, there was a pervasive presumption through the nineteenth century that public resources would be privatized and that a market economy was the best way to manage both land and water. The intervening century has witnessed wide swings in public confidence in markets and recurrent concerns about the economic and political influence that come with the ownership of property, but a market economy has remained our default approach, although less so with respect to water than most other resources. States have imposed various

³¹ In some western states, like Colorado, all vestiges of riparian law were abandoned. In other states, like California, the appropriation doctrine was treated as an overlay on the preexisting riparian system. See Wells S. Hutchins, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES 7–8 (U.S. Department of Agriculture 1971).

³² 66 Stat. 560, 43 U.S.C. § 666(a).

³³ Colo. River Water Conservation Dist. v. United States, 424 U.S. 800, 819 (1976).

³⁴ *Id.* at 810.

market constraints in the name of protecting the public interest, or on the claim that water is somehow special, including limits on permitted uses,³⁵ transfers from agricultural or other uses,³⁶ and interstate transfers.³⁷ While there is strong opposition to reducing these market barriers among some interests who object to treating water as a mere commodity, many states have taken very positive moves to eliminate market restraints in an effort to create incentives for conservation and efficient water use. Fortunately, state water laws generally continue to provide the essential infrastructure for effective markets, and many states have undertaken to eliminate market restraints in the interest of more efficient allocation of water resources.

D. *Beyond Navigation—Federal Transformation
of the American West and More*

If the foregoing were the whole of the American water management story, it would be clear that the federal government has a very limited role to play going forward. But much happened over the course of the twentieth century. Between the era of “state ingenuity and independence” and what Gerlak labels the current era of “restoration and collaboration,”³⁸ the federal government led and financed an effort to transform America’s natural landscape, particularly in the West. The result was the “reclamation” of permanently or seasonally flooded lands, a blooming of desert lands and cities, and a transformation of the environment that would come to be seen as harmful rather than beneficial. There can be no doubt that the federal government will play a role in the restoration on which Gerlak says we are now collaborating. What that federal role will be in what is now a “highly fragmented” and

³⁵ Both the reasonable use standard of riparian law and the beneficial use standard of appropriation law give courts discretion to preclude acquisition or transfer of water rights for particular uses. Many states have, or have had, specific statutory definitions of beneficial use. *See, e.g.,* Ariz. Rev. Stat. Ann. § 45-141 (A) (Supp. 1970) (listing domestic, municipal, irrigation, stockwatering, water power, recreation, wildlife, including fish, and mining).

³⁶ For example, Wyoming law made rights appurtenant to the land on which it was used, making transfers to other lands or off-site uses impossible. Wyo. Laws 1921, ch. 141, Stat. Ann § 41-37 (1957).

³⁷ For example, New Mexico law forbade the out of state use of New Mexico groundwater. N.M. Stat. Ann. § 72-12-19 (1978) (invalidated in *City of El Paso v. Reynolds*, 597 F. Supp. 694 (1984) .

³⁸ Gerlak, *supra* note 30, at 240.

“piecemeal” approach is an important question.³⁹ Before exploring what that federal role should be and how significant it should be in relation to the role of the states, it will be helpful to understand what the federal role became over the course of the twentieth century and the historic legacy upon which federal water policy must build.

Gerlak uses the metaphor of merging streams rather than sequential eras in recounting the history of American water law and policy, a useful way of emphasizing that water management philosophies and systems are always evolving and overlapping. One might visualize, for example, the gray-white, glacial sediment of a high mountain tributary and the earth-red sediment of a downstream valley tributary forming distinct strands in a larger river and gradually converging to a common gray-brown, but always helping to define the total flow. State water laws continue to color the river of American water management, but as Gerlak points out there are three intermediate, largely federal, tributaries along the way: federal development and dominance, development doubts and environmental concerns, and devolution and penny-pinching.⁴⁰

E. *Federal Water Development*

From roughly 1900 to 1960 Congress enacted numerous laws meant to encourage and facilitate economic development. The Rivers and Harbors Acts of 1890 and 1899 regulated dam construction and the dumping of solid waste into navigable waters in the interest of protecting navigation.⁴¹ The Reclamation Act of 1902 provided federal funding for the construction of reservoirs and water distribution facilities to promote agriculture in sixteen western states.⁴² Since its creation the Bureau of Reclamation has constructed nearly six hundred dams including such engineering marvels as Hoover Dam, Grand Coulee Dam and the Central Valley Project in California. The Federal Power Act of 1920 established the Federal Power Commission with responsibility for licensing non federal hydropower projects on navigable waters of

³⁹ *Id.* at 246.

⁴⁰ *Id.* at 234–40.

⁴¹ Rivers and Harbors Act, ch. 907, § 7, 26 Stat. 454 (1890); *see also* Rivers and Harbors Appropriation Act, ch. 425, § 9, 30 Stat. 1151 (1899).

⁴² Reclamation Act/Newlands Act, ch. 1093, Pub. L. No. 161 (1902).

the public domain and for the sale of surplus power generated from federal dams.⁴³ The Rivers and Harbors Act of 1925 launched multi-purpose water planning by authorizing the Army Corps of Engineers to survey all navigable waters and to develop plans for irrigation, navigation, power production and flood control.⁴⁴ Recreation was soon added to the list of purposes to be served by federal water projects. In 1933 Congress created the Tennessee Valley Authority in an effort to bring integrated planning and development to an entire river basin.⁴⁵ The Flood Control Acts of 1936 and 1944 funded hundreds of flood control projects and granted extensive authority to the Corps to construct and maintain these facilities.⁴⁶ Because the 1944 Act was focused on the construction of multi-purpose projects, the Corps became actively involved in the building of hydroelectric dams on several rivers including the Columbia, Snake and Missouri.

The scope and magnitude of all of this federal water development activity over the first sixty years of the twentieth century cannot be overemphasized. It gave the federal government a much expanded role in water management, but did not significantly interfere with state responsibilities for the assignment and enforcement of water rights. Because most western states paid little attention to available supply in the recognition of new water rights,⁴⁷ the federal emphasis on increasing supply and facilitating distribution was generally seen as a boon to the states, or at least to water rights holders at the bottom of a long list of prior appropriators. The states were not, however, totally at ease with the frenzy of federal engagement with water. Largely in response to growing conflicts among federal agencies involved in water development, the Franklin Roosevelt administration sought to coordinate federal efforts and to connect them to broader economic planning through Drainage Basin Reports prepared by the interagency Water Resources Committee of the National

⁴³ Federal Power Act, ch. 284, 41 Stat. 1063 (1920).

⁴⁴ Rivers and Harbors Act, ch. 467, 43 Stat. 1186 (1925).

⁴⁵ Tennessee Valley Authority Act, ch. 32, § 1, 48 Stat. 58 (1933).

⁴⁶ Flood Control Act of 1936, ch. 688, 49 Stat. 1570 (1936) (current version at 33 U.S.C. §§ 701a–701f, 701h (2006)); Flood Control Act of 1944, ch. 665, 58 Stat. 887 (1944) (codified as amended in scattered sections of 16 U.S.C.; 33 U.S.C.; 43 U.S.C.).

⁴⁷ Where permits to appropriate water exceed the capacity of a watercourse in normal years, junior rights are sometimes referred to as a “hunting license”—there is a right to water if you can find it.

Resources Committee.⁴⁸ As with the TVA, this sort of federal involvement in economic planning posed a threat to the states' control of what they considered to be their water. Indeed many state constitutions provided (and provide) that the water resources of the state belong to the people of the state.⁴⁹ Any state concerns about an interventionist federal government were at least temporarily alleviated by the elimination of the National Resources Planning Board (the successor to the National Resources Committee)⁵⁰ in 1943 and by a shift of emphasis for the TVA "to 'concrete' development goals, such as power supply, with 'lower profile' given to welfare and environment."⁵¹

While these and other New Deal initiatives for regional and basin-wide water planning had little impact, federal involvement in water resource policy did not disappear. In the 1950s and 1960s, the federal officials began to push for the creation of river basin commissions with representation of the affected states as well as the federal government. An early example was the Delaware River Basin Commission finally agreed to in 1961⁵² in the wake of a second Supreme Court apportionment of the waters of the basin among the states of New York, New Jersey, Pennsylvania and Delaware.⁵³ When done in the context of an interstate compact pursuant to Article I, Section 10 of the Constitution, such interstate understandings require Congressional approval and provide an opportunity for active federal participation in regional water planning if the participating states are willing to accept a federal role. The Delaware River Basin Commission served as a model for a concerted, but largely unsuccessful, effort to implement river

⁴⁸ WATER RES. COMM., NAT'L RES. COMM, DRAINAGE BASIN PROBLEMS AND PROGRAMS (1937). The National Resources Committee was created by Executive Order #7065, June 7, 1935.

⁴⁹ See, e.g., COLO. CONST. art. XVI, § 5 ("The water of every natural stream, not heretofore appropriated, within the state of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided.").

⁵⁰ See Patrick D. Reagan, Book Note, 55 THE BUS. HIST. REV. 110 (1981) (reviewing Philip W. Warken, A History of the National Resources Planning Board, 1933-1943 (1969) (Unpublished Ph.D. dissertation, Ohio State University)).

⁵¹ Christopher J. Barrow, *River Basin Development Planning and Management: A Critical Review*, 26 WORLD DEV. 171, 175 (1998).

⁵² Delaware River Basin Compact, Pub. L. No. 87-328, 75 Stat. 688 (1961).

⁵³ New Jersey v. New York, 347 U.S. 995 (1954); New Jersey v. New York, 283 U.S. 336 (1931).

basin planning across the country. The effort was doomed in part because it came at a time when the focus of federal water policy was shifting from large water development projects to a concern for the environmental impacts of such projects.⁵⁴ But it was also doomed by the lack of settled expectations among the affected states. Advocates of river basin planning had been thinking in terms of water development, but national priorities were shifting to environmental protection which required an entirely different frame of mind.⁵⁵ State participation in interstate water agreements had been driven by a concern for getting at least a fair share of the available water. When the focus of basin planning was on increasing supply, states had clear incentives to participate, but when river basin planning looked like it might lead to restrictions on supply, there was little incentive to cooperate. Thus the river basin planning contemplated under the 1965 Water Resources Planning Act as a collaboration between the Federal Water Resources Council and a national network of river basin commissions never got off the ground.⁵⁶

F. *From Engineering to Planning*

What did get off the ground was a new era in federal water policy. Going forward, the federal government would no longer be in the business of subsidizing large water development projects. Although it was widely ignored at the time, the 1973 report of the National Water Commission, *Water Policies for the Future*,⁵⁷ recommended a new direction in federal water policy—one that

⁵⁴ A United States Senate Committee, chaired by Senator Robert Kerr, issued a report recommending greater concern for environmental impacts in the design of future water projects. S. REP. NO. 87-29 (1961). This led to the enactment of the Water Resources Planning Act of 1965, *infra* note 56.

⁵⁵ The Rockefeller Foundation had funded the Harvard Water Program in the interest of developing an integrated approach to water project planning for the purpose of identifying “optimal” projects. See Maynard M. Hufschmidt, *The Harvard Program: A Summing Up*, in WATER RESEARCH 441 (Allen V. Kneese & Stephen C. Smith eds., 1966). At the same time the Eisenhower administration had announced a policy of no new starts on large water development projects. See Theodore M. Shad, *An Analysis of the Work of the Senate Select Committee on National Water Resources, 1959–1961*, 2 NAT. RESOURCES J. 226, 230–31 (1962).

⁵⁶ Water Resources Planning Act, Pub. L. No. 89-80, 79 Stat. 244 (codified as amended in scattered sections of 42 U.S.C.).

⁵⁷ NAT'L WATER COMM'N, WATER POLICIES FOR THE FUTURE: FINAL REPORT TO THE PRESIDENT AND TO THE CONGRESS OF THE UNITED STATES BY THE NATIONAL WATER COMMISSION (1973).

had already been set in motion by growing environmental concerns, and by skepticism about the closely related economic incentives and disincentives of heavily subsidized water development. Dan Tarlok provides a good summary of the Commission's core recommendations:

The Commission's basic message was that the rationality behind subsidized water development no longer existed. The Commission called for an end to future subsidies for reclamation projects and navigation improvements, greater use of water transfers, more accurate pricing of both irrigation and M & I water, and it criticized the excessive reliance on structural flood control measures.⁵⁸

Cooperative federalism was the new mantra of federal water policy, although some defenders of state power labeled it "coercive cooperation."⁵⁹

Under cooperative federalism the federal government provided incentives for state engagement in water planning and set national environmental standards and priorities that state governments were expected to enforce. It worked, according to John Kincaid, "by accommodating political change without seeming to do violence to tradition and by compensating state and local officials for federal intrusions into their authority with fiscal assistance and with federal assumption of policy decisions too painful to be made by some state and local authorities."⁶⁰ The Water Resources Research Act of 1964 provided funding for state based water policy research centers.⁶¹ The Water Resources Planning Act of 1965 sought to create a national system of river basin planning.⁶² Congress created the National Water Commission in 1968, leading to the aforementioned report. But beyond a lot of research through the state-based water resources research institutes, much of which is very useful to whomever

⁵⁸ A. Dan Tarlock, *A First Look at a Modern Legal Regime for a "Post-Modern" United States Army Corps of Engineers*, 52 U. KAN. L. REV. 1285, 1306 (2004).

⁵⁹ Daniel J. Elazar, *Opening the Third Century of American Federalism: Issues and Prospects*, 509 ANNALS AM. ACAD. POL. & SOC. SCI. 11, 13 (1990).

⁶⁰ John Kincaid, *From Cooperative to Coercive Federalism*, 509 ANNALS AM. ACAD. POL. & SOC. SCI. 139, 140 (1990).

⁶¹ Water Resources Research Act of 1964, Pub. L. No. 88-379, 78 Stat. 329 (current version at 42 U.S.C. §§ 1961-1961c-6 (2006)).

⁶² Water Resources Planning Act, Pub. L. No. 89-80, 79 Stat. 244 (codified as amended in scattered sections of 42 U.S.C.).

manages water, not very much happened on the ground.

Perhaps the most significant example of implemented cooperative federalism is the Pacific Northwest Electric Power and Conservation Planning Council created by Congress in 1980.⁶³ The Council includes representatives from Washington, Oregon, Idaho, and Montana and has the multiple purposes of assuring a reliable power supply, planning for energy conservation, providing for participation by all affected parties, protecting and enhancing fish and wildlife resources and providing environmental quality.⁶⁴ While it is generally agreed that the Northwest Power Planning Council has had some successes both in planning for hydropower production and in protecting the Columbia River's anadromous fish population, it falls far short of the comprehensive river basin planning contemplated during the New Deal or even the less ambitious goals of many proponents of cooperative federalism. The federal government has no direct role in the Council's work, although it continues to play a major role in Columbia River Basin policy through its operation of the many Corps and Reclamation dams and through the energy marketing role of the Bonneville Power Administration.

G. *Shifting Costs to the States*

In the 1980s, cooperative federalism gave way to a philosophy of devolution in resource management and parsimony in the expenditure of federal resources. Where the sagebrush rebellion impacted on public lands policies, a parallel effort to shift responsibilities to the states influenced federal water policy. The Water Resources Council and its associated river basin commissions lost Congressional funding in 1982. The Water Resources Development Act of 1986 imposed a new 50 percent cost-sharing requirement for Corps and Reclamation projects. Notwithstanding a widely shared view among environmental groups that greater reliance on states would lead to a race to the bottom, they had bigger battles to fight in trying to counter parallel efforts to curtail the federal command and control regulations in other areas like pollution control and species protection. Short of a national system of water resource planning and management with

⁶³ Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. No. 96-501, 94 Stat. 2697 (current version at 16 U.S.C. § 839 (2006)).

⁶⁴ *Id.* § 839(1)–(6).

the states serving as administrators of federal policy, the next best option for environmentalists seemed to be a renewed focus on regional collaboration through interstate agreements. As evidenced by the Delaware River Basin Commission, the interstate compact clause occasionally had been relied upon to resolve interstate allocation disagreements. Indeed, the Pacific Northwest Power Planning Council was the product of an interstate compact (although the same states had never been able to reach agreement on a compact to allocate the waters of the Columbia River Basin).⁶⁵ In the absence of federally driven water planning, perhaps the next best alternative was regional cooperation through interstate agreements and other forms of collaboration among contending interests.

H. *Interstate Compacts*

The history of the interstate compact, at least in the context of water, does not give reason for optimism. The Utton Transboundary Resource Center at the University of New Mexico has identified fifty water related compacts,⁶⁶ a few of which Congress has not ratified or are not still in force. The dominant purpose of the majority of these compacts is water allocation.⁶⁷ Water planning and pollution control are sometimes stated objectives, but the latter is generally in the form of a commitment to comply with existing pollution laws and the former has seldom resulted in plans that require individual states to compromise their ambitions and interests. Most compacts are centrally concerned with the allocation of water, often in response to or in anticipation of a judicial apportionment. There is no existing interstate water compact that can fairly be described as providing for

⁶⁵ A compact was proposed in the 1950s, but not ratified by the state of Washington. See JOHN M. VOLKMAN, *A RIVER IN COMMON: THE COLUMBIA RIVER, THE SALMON ECOSYSTEM, AND WATER POLICY* 44–47 (1997). An agreement generally described as the Columbia River Compact relates only to allocation of the fishery and is an agreement between just Washington and Oregon. Act of Apr. 8, 1918, Pub. L. No. 65-123, 40 Stat. 515 (1918).

⁶⁶ UTTON TRANSBOUNDARY RES. CTR., UNIV. N.M. SCHOOL OF LAW, UTTON CTR. MODEL COMPACTS PROJECT: COMPACT REVIEW SUMMARIES (2005), available at http://uttoncenter.unm.edu/pdfs/MC_Review_Summary.pdf.

⁶⁷ The Utton Center Study identifies twenty-six as water allocation compacts. Jerome C. Muys, George W. Sherk & Marilyn C. O'Leary, *Utton Transboundary Resources Center Model Interstate Water Compact*, 47 NAT. RESOURCES J. 17, 21 (2007).

comprehensive regional planning and management, although some aspire to that end.

With support from the federal government, the Utton Center has developed a model interstate water compact “to provide a mechanism by which interstate water conflicts may be resolved in an amicable, efficient, and equitable manner . . . [and] to empower . . . states to take interstate water management into their hands to avoid the uncertainties and costs of litigation and the vagaries of congressional legislation.”⁶⁸ While the model compact is an excellent document drawing on the experience of past compacts and the expertise of many experienced water lawyers, compacting states must still reach agreement before even a well drafted compact takes effect. As suggested above,⁶⁹ and as evidenced by history, conflict rather than foresight is likely to be the motivating factor for discussion of a possible interstate agreement. Because upstream states have the natural advantage of topography, they have little incentive to entertain constraints on their future or current water supply. For them the most relevant consideration is the likelihood of federal intervention and apportionment by Congress or the Supreme Court, and their assessment of what that apportionment is likely to be. While downstream states will have incentives to anticipate future water shortages, they seldom do until the prospect or reality of shortage becomes sufficiently pressing that it displaces other issues on their political agenda. Illustrative is the ongoing ACF controversy discussed in the beginning of this paper.⁷⁰

Writing in 1998 about the alternatives for resolving the ACF dispute, Jeffrey Beaverstock suggested that “[t]he states seem to be on the right track, but they are likely to achieve success only if they can learn to live together.”⁷¹ As we know, the proposed compact was derailed, confirming, once again, that self interest (of the three states and their constituents in the ACF case) trumps good will. While Beaverstock’s optimism that competing claimants on a scarce resource might just “learn to live together” is not unusual, experience demonstrates that it is naive. Lofty

⁶⁸ *Id.* at 23.

⁶⁹ See *supra* note 4 and accompanying text.

⁷⁰ See *supra* notes 2–11 and accompanying text.

⁷¹ Jeffrey Uhlman Beaverstock, *Learning to Get Along: Alabama, Georgia, Florida and the Chattahoochee River Compact*, 49 ALA. L. REV. 993, 1007 (1998).

ambitions for cooperative management of a river system's resources are easy to propound but extremely difficult to implement. The central obstacle to implementation is, more often than not, an inability to agree on allocation of waters among the compacting or contracting parties, including who gets how much water and when, particularly in times of scarcity. These are the issues that stymie agreement, particularly when some parties have natural advantages over others. Despite a history of mostly failed efforts, optimism that we can learn to live together persists, not just in the pursuit of interstate agreements but in the currently popular approach to water policy and management. As Gerlak describes it, ours is an age of "restoration and collaboration,"⁷² an age of confidence that we can just all get along.

I. *Environmental Protection and Restoration Through Collaboration*

The restoration part of the current federal approach reflects the rising concern for environmental protection that has occurred over the last half century. During the height of the federal dam building boom in the middle decades of the last century, any environmental objections that existed could barely be heard above the din of support for federally financed water related infrastructure. Today, the prospects for any proposed new dam is nil. Indeed the prospects for the survival of some existing dams are growing dimmer by the day, although escalating opposition to carbon based energy sources may give new life to old dams that produce, or can be converted to produce, hydro power. While it is increasingly unlikely that large dams like those on the Snake River will be removed in the interest of salmon habitat rehabilitation, a few smaller dams are already coming down in the name of environmental restoration. These and other projects to restore lost wetlands and previously channelized streams are generally accomplished with a large influx of federal money on a project by project basis. Gerlak calls it "green pork,"⁷³ a phrase that aptly describes not only the source of the funding but also the lack of a coherent federal policy that would establish priorities on some basis other than political influence. In this respect, the era of water resource restoration is little different from the dam building era—

⁷² Gerlak, *supra* note 30, at 240.

⁷³ *Id.* at 241.

only the purpose of federal spending is different. In the past, local benefits were anticipated from Corps construction of a dam in the neighborhood; today other local benefits might derive from getting the Corps to take the dam down.

The restoration theme is not unimportant. It reflects a fundamental shift in public values and understandings. But the forces and interests that have driven water resource development over the course of human history have not disappeared with the rise of concern for the environment. More people than ever are looking for food to be produced by an agricultural economy dependant on irrigation. Demand for energy continues to rise notwithstanding greater efficiencies in transportation and use, and, as suggested above, hydropower becomes ever more appealing in the face of pressures to reduce CO₂ emissions from thermal generation. Desert cities like Las Vegas and Phoenix continue to grow at unprecedented rates, putting increased demands on groundwater and sometimes distant surface water supplies. Historically the solution to growing demand was increased supply through storage or transport. Today the only solution in many cases is shifting water from one use to another. Absent effective local and interstate water markets, these shifts in water use can only be accomplished through the political process. That is where the collaboration part of the modern approach comes in.

In a nutshell, the collaborative model is rooted in a belief that if people can be brought together for a serious discussion of their competing and conflicting interests, they will be able to reach agreement and thus avoid both the compromise of public interests that invariably results from special interest politics and the winner takes all results of litigation. To a significant extent the collaborative approach is the product of an array of independent initiatives undertaken in the context of particular disputes. Many of these disputes have arisen in the circumstance of the water rights adjudication proceedings undertaken in many states over the past two or three decades. Some, like the controversy on the Klamath River in southern Oregon and northern California, are the result of drought and/or increased pressure for instream water uses like fish habitat protection.⁷⁴ Others, like the CALFED initiative in California's Sacramento-San Joaquin Delta (though instigated

⁷⁴ See Glen Spain, *Dams, Water Reforms, and Endangered Species in the Klamath Basin*, 22 J. ENVTL. L. & LITIG. 49 (2007).

by drought), have evolved into ambitious efforts to engage a multitude of government agencies and private interests in water resource planning.⁷⁵ There is no overarching theory or set of principles for these collaborative processes, rather they are the result of pragmatic efforts to resolve actual disputes. “[T]hey are place based, collaborative, and experimental,” says Gerlak. “They are unique to their circumstances—geographic, ecological, political, and social.”⁷⁶

The generally ad hoc nature of this collaborative approach is not without perceived advantages. Advocates of greater state autonomy in our federal system have long urged that a major advantage of a decentralized approach is the experimentation that occurs through a variety of state approaches to solving shared problems. While many environmentalists have worried that there will be a resultant race to the bottom, there is little evidence of competitive downgrading of environmental standards and even many concrete examples of what one might call a race to the top.⁷⁷ But the idea that states or communities are racing either to the bottom or the top assumes that problems and solutions across states and communities are comparable. Part of the case for seeking ad hoc solutions is that every water problem is different and requires its own unique solution—it is, in the lingo of collaboration, place based.⁷⁸ The ad hoc nature of the collaborative approach can also facilitate what have come to be called integrative and adaptive management. A one size fits all solution makes sense only if we do not really understand the problem. The collaborative involvement of affected and interested parties is critical to understanding the problem and finding comprehensive solutions adapted to the problem. The collaborative model is also seen as a way to overcome the

⁷⁵ See Dave Owen, *Law, Environmental Dynamism, Reliability: The Rise and Fall of CALFED*, 37 ENVTL. L. 1145 (2007).

⁷⁶ Gerlak, *supra* note 30, at 243.

⁷⁷ Examples include Oregon’s nearly four-decade-long commitment to a comprehensive statewide land use planning system and California’s enactment of restrictive standards designed to reduce the climate change risks associated with green house gas emissions.

⁷⁸ “Not one of the seventeen Western states is like the other; however, they all have something in common—rapidly growing economies, contentious environmental issues, exploding population growth, and the reality of a finite amount of water.” BUREAU OF RECLAMATION, U.S. DEP’T OF INTERIOR, WATER 2025: PREVENTING CRISIS AND CONFLICT IN THE WEST 7 (2005).

jurisdictional boundaries that limit the effectiveness of both litigation and traditional legislation. The people affected by a particular action will be welcome to participate without regard to political boundaries.

In 2003 the federal government embraced the collaborative management approach with the Department of Interior's launching of The Water 2025 Initiative. According to the DOI website:

Water 2025 focuses on stretching existing water supplies through collaboration, technology and innovative, market-based solutions. It is designed to produce results and demonstrate investments that can help in preventing crises and conflict in the West.

Since the inception of Water 2025 in 2004, great strides have been made in developing new ways of thinking about how to avoid water conflicts before a crisis occurs. By working with irrigation and water districts, Western States, Tribes, and other local entities to develop innovative on-the-ground solutions to water supply problems, competing interests can be brought together to find collaborative, local solutions for the future.⁷⁹

The Water 2025 Initiative was a perfect fit with what former Secretary of Interior Gale Norton called the "Four Cs" cornerstone of her tenure—"Conservation through Cooperation, Communication, and Consultation."⁸⁰ Recognizing that "over-allocated watersheds can cause crisis and conflict" and that "[c]risis management is not effective in dealing with water conflicts," one of the Initiative's guiding principles is the "[u]se [of] collaborative approaches and market based transfers to minimize conflicts."⁸¹ Although the conjoining of collaborative decision making, as the concept is understood in Water 2025, and markets makes little sense, at least we can be clear that the Department of Interior is onboard for collaboration in water management.

Interior's approach in Water 2025 is part and parcel of a broader enthusiasm for collaboration in the resolution of environmental conflicts. The admirable and optimistic idea that interested parties (stakeholders is the term *de jour*) will reach mutual agreement if only they come together and talk has been

⁷⁹ U.S. DEP'T OF INTERIOR, RECLAMATION: MANAGING WATER IN THE WEST: WATER 2025, <http://www.usbr.gov/water2025/> (last visited Sept. 27, 2008).

⁸⁰ BUREAU OF RECLAMATION, U.S. DEP'T OF INTERIOR, *supra* note 78, at 1.

⁸¹ *Id.* at 2.

widely embraced in the wake of many decades of political and legal acrimony. Perhaps the most prominent example of collaborative resource management has been the Quincy Library Group's participation in the management of National Forest resources in the Feather River Watershed of northern California. Although the QLG planning process is often represented as an example of successful collaborative governance on the National Forests, interests not included in the process object that the plan favors some interests over others.⁸²

But the advantages of the ad hoc collaborative approach lie more in the case by case pursuit of solutions than in the collaboration. Most collaborative efforts, including on the Klamath and under CALFED, have failed or at least not yet succeeded. While there may be community-building benefits from the collaborative process, the absence of anything resembling relative rights among some of the collaborators, beyond their vague status of "stakeholders," makes agreement very difficult, particularly where much is at stake. If these collaborative processes were somehow like John Rawl's original position,⁸³ a just and fair agreement might be reached. But the reality is that at least some parties will generally have claims to vested interests while others are mere stakeholders with only the threat of litigation as their bargaining chip.

Whatever its actual accomplishments (and the jury is still out on that), the concept of collaborative governance continues to draw strong support from many who are frustrated by the conflict often reflected in legislative and judicial struggles among competing users of scarce resources. Internationally, and particularly in Europe, the enthusiasm for collaborative management is even greater and more deeply rooted. In the context of water, collaborative management is generally thought of in conjunction with the concept of integrated management,⁸⁴ by which is understood the coordination of decision making with respect to

⁸² See Robert B. Keiter, *Public Lands and Law Reform: Putting Theory, Policy, and Practice in Perspective*, 2005 UTAH L. REV. 1127, 1179 (2005).

⁸³ See generally JOHN RAWLS, *A THEORY OF JUSTICE* (rev. ed. 1999).

⁸⁴ Peter Rogers & Alan Hall assert in a paper for the Global Water Partnership that "[t]here is a general agreement in the water community that IWRM [integrated water resource management] provides the only viable way forward for sustainable water use and management." PETER ROGERS & ALAN W. HALL, *TEC BACKGROUND PAPER NO. 7: EFFECTIVE WATER GOVERNANCE* 30 (2003).

water, land and other associated resource uses in a particular locality or region.⁸⁵ This, of course, significantly expands the complexity of the issues to be addressed and the number of stakeholders who must be included in the seats around an ever larger table.⁸⁶

II. TAKING ADVANTAGE OF FEDERALISM

A. *Back to Basics*

As with any social challenge, that of allocating and managing scarce water resources cannot be separated from the realities of history and nature. Water is not evenly distributed across the globe or the continent and the available supply at any particular time of the year is highly variable from year to year. In this country we have customs and institutions for water allocation that have evolved over four centuries of Anglo-European influence. The brief account in the preceding sections summarizes that history and the current state of affairs. While it might be an interesting intellectual exercise to start afresh in thinking about the future federal role in water management, there is no escaping the complex human relationships and expectations reflected in that history. There is also no escaping the basics of all resource allocation problems. Fortunately there are lessons to be learned about those basics from our own experience.

Water is generally a common pool resource, meaning that it can be difficult and costly to control access or, to state it differently, to exclude potential beneficiaries from its use. Absent controls on access, common pool resources can be exploited

⁸⁵ In a paper for the Global Water Partnership, Miguel Solanes, and Fernando Gonzalez-Villarreal contend that “[t]he development of water resources is no longer amenable to isolated action. Water legislation is rapidly evolving towards integrated water planning to satisfy environmental objectives, economic requirements and social concerns.” MIGUEL SOLANES & FERNANDO GONZALEZ-VILLARREAL, TAC BACKGROUND PAPER NO. 3: THE DUBLIN PRINCIPLES FOR WATER AS REFLECTED IN A COMPARATIVE ASSESSMENT OF INSTITUTIONAL AND LEGAL ARRANGEMENTS FOR INTEGRATED WATER RESOURCES MANAGEMENT 14 (1999).

⁸⁶ In the words of Hans Wessel, “[i]ntegrated river basin management is engaged with all spatial and intertemporal interdependencies in a basin.” HANS WESSEL, *Managing the River Rhine and its Basin*, in ENVIRONMENTAL LAW AND POLICY IN THE EUROPEAN UNION AND THE UNITED STATES 219, 220 (Randall Baker, ed., 1997).

without regard for maintaining a sustainable supply, resulting in a “tragedy of the commons.”⁸⁷ A familiar institutional response is a common property regime under which individual access is permitted only according to rules established and enforced by a public entity having responsibility to allocate water for the public benefit. What constitutes the public benefit rests in the discretion of those who decide on behalf of the public, which in the case of water could be any public body from Congress to a local irrigation district board. In Anglo-American law and American political discourse, these public entities are often said to be exercising or enforcing public water rights. This public rights reference underscores that water is not subject to private property laws in the same way as are land and other non-common pool resources. What we generally think of as private water rights are merely rights to use water, or usufructs in the language of the common law. There are also several common law doctrines that give more or less concrete definition to public water rights.⁸⁸

A difficulty, however, is that all water uses can be described as private uses, and many of those uses require some degree of exclusivity. Water drunk by individuals or included in a product is, for practical purposes, consumed and can be used by no one else. Depending on the crop, soils, climate, and other factors, some portion of water used in irrigation is available to others for reuse, but some is consumed. Water maintained as minimum stream flows for wildlife habitat or river rafters is available to all, but used by only a fraction of the public. Even stream flows maintained to minimize the effects of pollution will benefit some and not others in the sense that some individuals might have preferred more irrigation water to less concentrated pollutants. The point is that individuals are the end users, whether or not we insist that water is common property in which the public has rights. Thus the choice between public and private rights in water is not about public versus private use, rather it is about what institutional mechanisms we will employ in deciding which private uses we will allow and which we will not. At the end of the day, our water institutions will allocate water to particular uses with the distributional consequence that some potential users will benefit

⁸⁷ See Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

⁸⁸ See Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711 (1986).

and others will not. It is these distributional consequences that makes our choice of institutional approaches so contentious, the more so as demand exceeds supply. Hence the drinking and fighting over water.

Not surprisingly, the existing institutional arrangements described in this paper are a complicated mix of public and private approaches. The basic systems for allocating water among consumptive and some non-consumptive uses are private—either owners of riparian lands have correlative rights with other riparian owners or those who appropriated water to beneficial use have a superior right to all who come later. These rights provide water users with some degree of certainty about the availability of water. The greater that certainty, the more secure investment in the productive use of water will be. With clarity of definition and security of enforcement, private rights owners have powerful incentives to use their water wisely. If their rights are transferable to other potential users, there will be similarly powerful incentives to convey the right to use water from less to more productive uses—to make more efficient use of the limited supply of water.

The assertion of public rights in water, either through regulation or a claim of superior public proprietary interest, tends to reduce the certainty provided by private rights, generally in the interest of eliminating external costs like pollution, interference with navigation, destruction of wetlands, endangerment of threatened species, etc. To the extent that public rights or the public interest are relied upon to justify public action to internalize external costs, efficiency might benefit if those costs can be effectively and not too expensively internalized. If the basic rule is that private rights in water are subject to superior public rights, the efficiency benefits of the private rights system will depend significantly on the clarity and stability of the public rights. But public rights are sometimes asserted in the name of an ill-defined public interest or higher morality (as in the case of Indian reserved rights) that has little regard for, or even rejects, efficiency as a goal in water management. Where that is the case, the best we can hope for if we care about efficiency is a relatively clear definition of the asserted public rights.

The experience of two centuries of varying federal involvement in water management confirms these basic principles of resource allocation. Consistent deference to state water rights systems reflects a recognition that, at the end of the day, most

water is used by individuals. Even the most ambitious advocates of central planning have not imagined the federal government preempting this basic allocational function. New Deal and more recent efforts to involve the federal government in river basin planning have produced little because the relative rights of the most critical participants, the states, have not been well defined. To the extent that more recent efforts at collaborative management have sought to involve other "stakeholders," the lack of anything resembling property rights in many of the participants has been similarly debilitating. Although the federal government has the constitutional authority to provide definition to the relative rights of the states, it has, for the most part, failed to exercise that power. The one major influence of the federal government has been in the provision of funds and technical expertise for the expansion and redistribution of water supplies. Unfortunately, a remarkable history of engineering accomplishment has had widespread environmental consequences and has been accompanied by significant subsidies to particular uses which has distorted water markets and contributed to the environmental degradation.

B. *The Future Federal Role*

Notwithstanding this decidedly mixed record, many factors are likely to lead to increased pressure for a larger federal role in water policy and management in the future. Growth in all regions of the country has led to increased demand for water, with the fastest growth occurring in the arid West where water is already moved over vast distances to meet existing demand. Environmental protection measures implemented over the last few decades have reduced supply by requiring that water be left in streams and rivers for wildlife habitat, recreation, and pollution control. The widespread opposition to large water storage projects has restricted remaining opportunities to expand usable supply. If accurate, predictions that climate change will alter historic precipitation and snow pack conditions resulting in massive dislocations for both the human economy and the natural ecology have national and international implications. Perhaps a renewed sense of the federal government's possibilities in the wake of several decades of diminished expectations will invite creative ideas for federal engagement in water policy. These and other factors suggest the kind of problem warranting national attention and integrated, top down solutions. For the most part we should

resist any such temptations.

The federal government's central role in creating the environmental harms that we now seek to correct is a product not only of values different from our own. It is also a consequence of the failure of centralized governance of a resource that varies dramatically across the country and that serves diverse communities with diverging demands. The devolution movement of the last few decades reflects a growing understanding of these institutional failures. Fortunately state governments have always played a central role, so the institutional framework necessary to implement a philosophy of subsidiarity in water governance already exists. States should continue to perform the central role in water resource allocation with their property regimes providing the infrastructure for water markets and efficient water use, whether for consumptive or environmental purposes. But there remain some important initiatives the federal government can take to facilitate wise and efficient use of America's scarce water resources, in addition to its long-standing constitutional role of guaranteeing the navigability of our commercial waterways.

1. *The federal government should continue to defer to state water rights systems as the core institutions for water allocation.*

This recommendation may seem superfluous in light of the widespread recognition of state property law in general and water law in particular, but the point warrants emphasis because of the many ways in which federal regulation and activity can affect state water rights systems, and because of the central role that clearly defined and strictly enforced property rights must play in an effective and efficient water allocation system. When faced with growing demand for a transboundary resource of limited and varying supply, there seem to be strong temptations to engage in centralized planning and allocation. And there are powerful incentives for those without water, or with less water than they would like, to look to the federal government to intervene on their behalf. Of course such pleas for intervention are always framed as being sought in the public interest, but federal water policy is replete with evidence of successful rent seeking in the form of a wide array of subsidies and some regulations restricting water rights.⁸⁹ So, deference to state water law should reflect not just a

⁸⁹ Perhaps the most distorting federal subsidy is that for some agricultural

prudential respect for the position of the states in the federal system, but also a recognition of the importance of property rights in the allocation of scarce water resources. Indeed, as reflected in a subsequent recommendation, there are important reasons to preempt certain aspects of state sovereignty in relation to water. Federal respect for state water rights regimes should be part and parcel of a broader respect for property rights and their potential role in the future allocation of America's limited water supply. It is sometimes suggested that because of its essential role in human subsistence water is a special resource that should not be subjected to private ownership. To the contrary, because water is such a critical resource it should be allocated under a regime that will assure its efficient use, not subject it to the inevitable abuses of a commons.

2. *A central focus of federal water policy should be on the performance of its constitutional responsibilities under the commerce clause, both with respect to navigation in particular and commerce in general.*

Water transportation remains important to the American economy. If the principle of subsidiarity is our guide to defining the federal role in water management, maintenance of the nation's navigable waterways is clearly a key national responsibility. This includes construction and maintenance of navigational improvements, prevention of obstacles to navigation, preemption of state laws that interfere with navigation, and determination of when the federal governments constitutional responsibilities may require the compromise of navigation on particular waterways. In the interest of facilitating interstate commerce and its associated efficiencies in resource utilization, as suggested in recommendations 3 through 6 below, the federal government should also encourage water markets by respecting and helping to clarify property rights in water.

3. *The federal government should work with the states to expeditiously clarify the nature and scope of federal and Indian*

water users. In 2005, agricultural users of Bureau of Reclamation's Central Valley Project water from the Sacramento River paid between \$2 and \$19 per acre foot. Farmers on California's central and south coasts paid between \$392 and \$607 per acre foot. A significant portion of the difference is due to subsidies that leave little incentive for efficient use.

reserved rights.

As indicated in the earlier description of the law, the Supreme Court's declaration of the existence of both Indian and federal reserved rights came as a surprise to states as well as to the affected water rights owners. While the reality of these rights has long been accepted and integrated into state water rights adjudication and administration, the continuing uncertainty about the nature and scope of reserved rights remains a significant problem for both public and private water planning. In appropriation doctrine states, there is certainty about the priority of reserved rights relative to other rights—they date from the creation of the reservation. The uncertainties arise from the interrelated questions of the purposes for which water has been reserved and the quantity of water required to fulfill those purposes. Pursuant to the Supreme Court's interpretation of the McCarran Amendment, states have authority to adjudicate reserved rights, but this has proven to be a slow and piecemeal process. The Supreme Court's deference to state courts in the interest of having a single adjudication of all rights makes sense if the state courts are accomplishing that task expeditiously. But long delays in settling the specifics of reserved rights create an even bigger problem. The large number of unadjudicated reserved rights claims leaves water planners with uncertainty about the full range of legal entitlements to water, and leaves private water rights owners with uncertainty about the significance of their priority date in appropriation systems and the scope of protected uses of correlative rights holders in riparian systems. Having created these reserved rights, Congress has the authority to resolve these uncertainties. Congress should either establish clear standards for state court determination of reservation purposes and the quantity of water required to meet those purposes, or it should establish a temporary federal court or quasi judicial commission for the purpose of adjudicating all unadjudicated reserved rights claims. If the latter approach could be accomplished in a reasonably short period of time, say ten years at the outside, it would have the advantage of providing much greater certainty whether or not particular states have managed to adjudicate other water rights claims.

4. *Congress should enact legislation declaring its intention that there be a national market in water and preempting state laws limiting interstate water transfers and sales.*

The recommendation for federal deference to state water rights systems is founded on the conclusion that, for historic and practical reasons, state governments are best situated to recognize and enforce property rights, not on the basis of some sense of state entitlement to the water within its borders. State property rights laws have provided a critical part of the infrastructure necessary to American commerce since the nation's founding. They can do the same for water markets, but only if the federal government prevents states from creating and maintaining barriers to interstate commerce in water. Under existing Supreme Court doctrine, the dormant commerce clause precludes states from discriminating against interstate commerce in water. But where a state prohibits intrastate commerce as well, there is no discrimination. Congress should mandate that there will be a national water market subject to federal regulation under the commerce clause and to such state regulation as is consistent with general commerce clause doctrine. To the extent that state and local governments hold a proprietary interest in water they would be free not to participate in water markets, but the time has long since passed that they can claim to own all of the water in the state.⁹⁰ A significant benefit of a federally mandated national water market will be a reduced significance of the allocation of interstate waters among the states. Although which states make the initial assignment or recognition of water rights will continue to depend on state allocations, the location of water use will gradually come to depend on the market rather than state boundaries.

5. *Congress should proactively apportion all significant interstate rivers systems not already apportioned by interstate compact, Supreme Court apportionment, or Congressional apportionment.*

To facilitate the recognition of property rights in water and

⁹⁰ The claim of state ownership of water is similar to claims of state ownership of wildlife, only an expression of "the importance to its people that a State have power to preserve and regulate the exploitation of an important resource." *Douglas v. Seacoast Products, Inc.*, 431 U.S. 265, 285 (1977) (quoting *Toomer v. Witsell*, 334 U.S. 385, 402 (1948)).

the markets those property rights will make possible, ongoing disputes among states over the apportionment of interstate river systems must be resolved. Notwithstanding the Supreme Court's clear preference for mutual agreement among affected states, it is clear that most interstate water disputes will be resolved, sooner or later, by Congress or the Court. While a healthy respect for the important role of the states in our federal system no doubt underlies the Supreme Court's position, there can be little doubt that such agreements will be rare and, even then, long in coming. With growing demands on a finite supply of water, optimism that states will agree is as misplaced as optimism that intrastate water disputes will be resolved simply by bringing so-called stakeholders to the table. Before states will be willing to compromise among themselves, they must know where they stand, or, at least, have some basis for predicting whether the position they take will be upheld if the matter is finally resolved by a higher authority. Although allocations to states are not property interests of the states, they serve the same function as do property rights in private disputes. There will always be uncertainties, as private property disputes evidence, but in the absence of any definition of relative rights there can be no reasoned basis for agreement. Congress has the authority to apportion interstate waters on its own initiative. Congress should take that initiative. Because the political realities, particularly in the United States Senate, make Congressional action on any particular river unlikely, Congress might consider a process modeled on the base closure legislation. By mandating a nationwide apportionment of interstate waters that impacts most states and by precluding river by river amendments, it might be possible to finally bring resolution to disputes like that on the ACF.⁹¹

6. *Congress should terminate all subsidies of water development and supply systems with the exception of municipal water and sanitation systems in low income/low tax base communities.*

The 1986 Water Resources Development Act imposed a 50 percent cost sharing requirement on federal water projects. Congress should take the second step and eliminate federal subsidies of water development projects, including all projects funded through earmarks and other procedural evasions of a

⁹¹ See *supra* notes 2–11 and accompanying text.

legitimate appropriations process. To date, the vast majority of these subsidies have provided low cost water to agriculture. The result has been highly inefficient production in arid regions on land that would not otherwise have been cultivated, and widespread destruction of native habitat and other environmental damage. Much of the justification for continued provision of subsidized water, as with other agricultural subsidies, has been the survival of the family farm and local farming communities. But the reality is that the vast majority of all agricultural subsidies benefit large and industrial farms. To the extent there are small family farms dependent on water subsidies, a means tested program would result in far less cost to the federal taxpayer and far less environmental damage. Federal subsidization of municipal and industrial water supply systems should also be curtailed, except for communities that can meet low income/low tax base standards. By demanding that municipal and industrial water users, like agricultural water users, pay the full costs of supplying the water they use, there will be significant incentives to conserve, leading people to avoid many environmental harms.

7. The federal government should continue to play a positive role in water related research and data development. It should also provide support for the restoration of environmental resources damaged by past federal water development projects.

The state based water resources research centers should continue to receive federal support. These centers have the advantage of local experience and perspective while providing research results that are often relevant to other regions of the country. Federal involvement in this manner can facilitate research of strictly local application while avoiding inefficiencies where research has regional or national relevance. The federal government can also play a useful role in data development which can be helpful to interstate stream apportionments as well as to the day to day work of public and private water managers. Beyond this research and data function, the federal government can and should play a significant role in the restoration of environmental damage that has resulted from past federal subsidies of water development. Many such restoration efforts will be beyond the capacity of local and state governments to finance, but may nonetheless be justified in terms of benefits and costs.