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Western Water Law in Transition

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There is an uneasy, unsettled air about western water law and policy today. This is ironic and even revolutionary because certainty is the central guarantee that water law has always held out in the American West. Nevertheless, there is no denying that we are in the process of reevaluating water law and policy and of adjusting old and established uses in light of modern demands.

This transition, which is likely to accelerate, is born of a changing society in the American West. Law tends over time to reflect societal values, and this has always been signally true of western water law. For this reason, it may be helpful to place matters in perspective by looking briefly at the forces that historically have shaped water law and at the new set of factors that are likely to determine it in years to come.

The prior appropriation doctrine, the core of western water law, was created to meet the felt needs of the mining camps during the California gold rush.\(^1\) Water law in the eastern United States and in England employed the riparian doctrine, which recognized water rights in each owner of land adjoining a stream or lake.\(^2\) Riparian

\(^1\) For a comprehensive and engaging history of western water rights, see R. Dunbar, Forging New Rights in Western Waters (1983).

owners effectively shared the watercourse and were required to respect the rights of other landowners to use water in the future. Thus, although the riparian decisions display some deference to existing economic uses, a landowner could not substantially diminish the flow of a river because of the duty to respect possible future water development.

Riparian law viewed the watershed as an integral natural unit. Exportation out of the watershed was prohibited or disfavored. Water was valued as an amenity that added considerably to the worth and beauty of all parcels of land along the watercourse.

This was nonsense to the utilitarian miners who flooded to the gold- and silver-bearing deposits of the West in the middle of the nineteenth century. They were there on business, not in pursuit of amenities. Water was the linchpin of the miners' operations, whether they were washing river gravel away from the gold dust and nuggets with pans, sluices or long toms; slashing away at hillsides with high-power hydraulic hoses used to blast out placer deposits; or transporting water twenty miles or more to remote mining towns such as Mokelumne Hill or Columbia by means of the serpentine canals that still wind across the gold country.

Thus mining was water intensive from the beginning. In addi-


3. See, e.g., Strobel v. Kerr Salt Co., 164 N.Y. 303, 321, 58 N.E. 142, 147 (1900) ("It is also material, sometimes, to ascertain which party first erected his works and began to appropriate the water."). The Restatement of Torts explicitly includes "the protection of existing values of water uses, land, investments and enterprises" as one of the balancing factors in determining the extent of riparian rights. RESTATEMENT (SECOND) OF TORTS § 850A(h) (1979).

4. On the role of the water supply in early mining operations, see generally R. PAUL, CALIFORNIA GOLD: THE BEGINNING OF MINING IN THE FAR WEST 147-70 (1947). Paul quotes the following excerpt from the Sacramento Weekly Union, July 22, 1854, concerning the use of hydraulic power at a claim at Iowa Hill:

With a perpendicular column of water 120 feet high, in a strong hose, of which they work two, ten men who own the claim are enabled to run off hundreds of tons of dirt daily. So great is the force employed, that two men with the pipes, by directing streams of water against the base of the high bank, will cut it away to such an extent as to cause immense slides of earth, which often bring with them large trees and heavy boulders. To carry off these immense masses of dirt they have constructed two sluices, one for the paying and the other for the non-paying dirt. . . . After these immense masses of earth are undermined and brought down by the streams forced from the pipes, those same streams are turned upon the tons of fallen earth, and it melts away before them, and is carried away through the sluices with almost as much rapidity as if it were a bank of snow. No such labor-saving power has ever been introduced to assist the miner in his operations.

Id. at 155.
tion, water was scarce in those hot, dry foothills. The mining camps had no use for a riparian law, developed thousands of miles away in country where water was plentiful, that called for most water to be left as is. Water was not an amenity in gold rush times, it was an engine. Mining—that is, society—could not proceed unless water could be assured in sufficient and certain quantities.

The miners developed their own customs. Just as the first miner to stake a claim was accorded the right to work the area, so too was the first user of water considered to have an absolute right of priority. The Supreme Court of the first western state, California, promptly approved the miners' rules in Irwin v. Phillips. In this justly famous opinion, the justices stated that "courts are bound to take notice of the political and social condition of the country which they judicially rule." The practice of respecting senior uses of water had been "firmly fixed" by "a universal sense of necessity and propriety" in the mining camps, and the court upheld those societal values. Congress approved of the miners' ground rules in 1866 and 1870. Beginning with Colorado, the Rocky Mountain states followed suit, as did the United States Supreme Court, which announced in 1935 that local laws generally governed the acquisition of water rights in the West.

These rules comprised the prior appropriation doctrine, which has become the deeply ingrained water law of every western state, although California, Washington, and Nebraska retain remnants of the riparian scheme. Prior appropriation rejects the riparian doctrine wholesale. The first user gets a guaranteed supply of water. In times of shortage, junior users are cut off according to their order of priority. There is no sharing of water. There is no need to preserve water in a watercourse. A stream or lake can be drained low or dried up entirely, as has occurred with hundreds of western rivers and streams, even the lower Colorado. These precepts reflect the belief that the wisest state

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5. See, e.g., Hicks v. Bell, 3 Cal. 219 (1853).
6. 5 Cal. 140 (1855).
7. Id. at 146.
9. See Act of July 26, 1866, ch. 262, 14 Stat. 251 (confirming rights-of-way and appropriations of water on the public lands, as against claims by the United States, if established pursuant to state law or local custom); Act of July 9, 1870, ch. 235, § 17, 16 Stat. 217, 218 (providing that all subsequent federal patents would be subject to rights established under the Act of 1866).
10. See, e.g., Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).
11. California Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 163-64 (1935) ("What we hold is that following the [Desert Land Act] of 1877, if not before, all nonnavigable waters then a part of the public domain became publici juris, subject to the plenary control of the designated states. . . ."). The case is discussed infra note 38.
policy is a passive one: decisions on water use are best made by the private water users themselves.

Ranchers and farmers made up the next waves of settlers in the westward expansion. They, too, saw water as a commodity that was the essential resource in their operations. In most of the arid region west of the 100th meridian, annual precipitation averages less than twenty inches, the amount of water needed to dryfarm—that is, to farm with rainfall only. Almost everywhere in the West, water must be taken out of watercourses and applied artificially to the fields by irrigation. Appropriation law was well suited to meet the needs of farmers who depended on irrigation. The doctrine assured early appropriators of legal rights to a sure supply of water to put on their fields.

But in many areas throughout the West small farmers required more than a legal doctrine to get water to their fields. Crops needed water in the late summer and early fall, long after snowmelt from the mountains had flowed past. Potentially fertile farming areas often were located far from the rivers or on benchlands high above steep canyon walls. Private enterprise in the form of farming and ranching cooperative associations was inadequate to raise the capital to build dams for storing the spring runoff for summer irrigation or to construct canals and laterals for transporting the water.12

The federal government, keen to complete the settlement of the West, stepped in. The Reclamation Act of 190213 authorized funding for most of the big irrigation projects that now dot the region. Homestead entries boomed as new waves of settlers moved west to capitalize on the offer of nearly free farmland and water.14 The reclamation program was heavily subsidized from the beginning—billions of federal dollars have been expended to provide cheap western water.15 Subsi-

12. On various 19th-century attempts to bring irrigation water to the arid lands of the West, see P. GATES, HISTORY OF PUBLIC LAND LAW DEVELOPMENT 635-54 (1968). Wallace Stegner poignantly depicts a futile attempt to bring water to the now-verdant Boise Valley in ANGLE OF REPOSE (1971).
14. Although the original Homestead Act was enacted in 1862 and numerous variations on the theme were adopted by Congress both before and after, the two most active decades in the actual issuance of homestead patents were the 20 years immediately following the Reclamation Act of 1902. The most productive year was 1910, when entries were made on approximately 23 million acres. G. COGGINS & C. WILKINSON, FEDERAL PUBLIC LAND AND RESOURCES LAW 73 (1979).
dized water for farming is also developed and supplied by special water districts, quasi-governmental organizations created under state law and usually dominated by irrigation interests. ¹⁶ Today, even accounting for the burgeoning water needs of the cities, irrigation consumes nearly ninety percent of all water in the West. ¹⁷

These forces have been the main currents of traditional western water law. The field has been dominated by the themes of appropriation under state law; stable priority for historic uses; concern for private rights over public rights; preference for consumptive, usually commercial, uses; and the provision of subsidized water for irrigators. It goes virtually without saying that this range of nineteenth and early twentieth century priorities is not as broad as the spectrum of considerations that must be accommodated in current water policy.

First, we have become increasingly aware of budgetary restraints on governments. Subsidies of all stripes are increasingly being called into question. Second, the press of the continuing migration to the West has created unprecedented strains on water supplies, thus intensifying the scrutiny of wasteful practices. Third, post-World War II innovations in high-lift pumping equipment have allowed us to begin to tap the potential of the great reservoirs of ground water. But, as shortages have developed, we have learned that many ground water aquifers are not renewable resources in the sense that surface waters are; the annual recharge of some aquifers is so small that they amount to stock resources that can be mined out, much like oil or coal deposits. Further, we have learned that ground water is usually hydrologi-
cally related to surface water, so that the traditional system of managing surface water and ground water separately fails to reflect the hydrologic reality: conjunctive management of underground and surface resources is required when the two connect up. Fourth, we have become determined to abate water pollution, an issue given little or no attention in prior appropriation law.

Fifth, we have revolutionized our concept of what western water is. It is no longer simply a commodity to be removed from a watercourse for use on farmland or in a factory. There is life and beauty in water. It is a valid use of water simply to allow it to remain in a stream or lake. In a sense, after first rejecting the riparian rule so resoundingly, we have reconsidered and have reached a deeply held consensus that there is undeniable merit in some aspects of riparianism: sufficient water absolutely must be available to meet a broad range of public environmental, recreational, ecological, and aesthetic needs.

Finally, we have come to recognize that this body of water law and policy bred of the westward expansion must begin to account for the rights of Indians, to whom legally binding promises were made in order to open aboriginal land and resources for those who settled the West. The truth is that since 1908, if not earlier, the main players in western water development have known that a shadow body of law existed based on the Winters doctrine. They have known, too, that water allocated in contravention of the Winters doctrine might someday be called into question. The Western States Water Council re-

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20. These conclusions are reflected in a number of modern movements, including the setting aside of large areas of land as wilderness, e.g., R. Nash, Wilderness and the American Mind (1983 rev. ed.); the increased concern for the rights of animals, e.g., M. Bean, The Evolution of National Wildlife Law (1983); the increased demand for recreational uses of water, e.g., Wilderness Public Rights Fund v. Kleppe, 608 F.2d 1250 (9th Cir. 1979); the provision in most western states for the establishment of instream, nonconsumptive water flows, e.g., Tarlock, Appropriation for Instream Flow Maintenance: A Progress Report on "New" Public Western Water Rights, 1978 Utah L. Rev. 211; and the attention given to water issues in essays and works of fiction by modern western writers, e.g., E. Abbey, Beyond the Wall (1984); J. Nichols, The Milagro Beanfield War (1974); W. Stegner, The Sound of Mountain Water (1969).


22. Federal power to preempt state water law was suggested in cases such as Willson v. Black Bird Creek Marsh Co., 27 U.S. 245 (1829), United States v. Rio Grande Dam and Irrigation Co., 174 U.S. 690 (1899), and United States v. Winans, 198 U.S. 371 (1905), but the first major explication of the doctrine was in Winters v. United States, 207 U.S. 564 (1908).
recently prepared a report for the Western Governors' Association concluding that Indian water rights across the West may total over forty-five million acre feet per year, an amount more than three times the annual flow of the Colorado River.\textsuperscript{23} That figure was rough, no more than a conscientious attempt to approximate the magnitude of the issue. But it stands in stark testament to the fact that Indian water rights are of front-line significance in modern western water policy.

Questions of equity pervade the dispute over Indian water rights. Farmers and ranchers built their operations, and their homes and families, on water rights they believed to be certain. They point to decrees issued by state judges to that effect. At the same time, the reclamation program proceeded on the backs of Indian people. Western water issues cannot be dealt with now or in the years to come without squarely confronting the legal and moral force of these words written by the National Water Commission in 1973:

Following \textit{Winters}, more than 50 years elapsed before the Supreme Court again discussed significant aspects of Indian water rights. During most of this 50-year period, the United States was pursuing a policy of encouraging the settlement of the West and the creation of family-sized farms on its arid lands. In retrospect, it can be seen that this policy was pursued with little or no regard for Indian water rights and the \textit{Winters} doctrine. With the encouragement, or at least the cooperation, of the Secretary of the Interior—the very office entrusted with protection of all Indian rights—many large irrigation projects were constructed on streams that flowed through or bordered Indian Reservations, sometimes above and more often below the Reservations. With few exceptions the projects were planned and built by the Federal Government without any attempt to define, let alone protect, prior rights that Indian tribes might have had in the waters used for the projects. . . . In the history of the United States Government's treatment of Indian tribes, its failure to protect Indian water rights for use on the Reservations it set aside for them is one of the sorrier chapters. . . .\textsuperscript{24}

Those, then, are the major developments and perceptions that have set a new context for western water law. Let me now speak to the manner in which these factors have shaken traditional concepts and will shape future law and policy.

My first point is one that may not seem fashionable at this junc-

\textsuperscript{23} See \textit{WESTERN GOVERNORS' ASSOCIATION, INDIAN WATER RIGHTS IN THE WEST} (1984).
\textsuperscript{24} \textit{NATIONAL WATER COMMISSION, supra} note 15, at 474-75.
ture in history: it is that a significant federal presence in western water law and policy exists now, is unavoidable, and will steadily grow. I am not speaking here of dollars for reclamation projects, a kind of federal involvement western development interests have long coveted but that is sure to remain in decline. Rather, I refer to a range of substantive issues that lend themselves to national attention.

The inexorable demands of geography make persistent inroads on the fiercely held localism that drives most state water officials and leaders in the consumptive industries. The angular design of the western states almost wholly fails to account for water basin configurations. A short stretch of the Continental Divide along part of the Montana-Idaho border is the only place west of the 100th meridian where a river drainage marks a political boundary. Great rivers such as the Columbia and the Colorado are used as state lines, inviting water disputes. Only one of our major western river systems—the Sacramento-San Joaquin of California—exists within just one state. Only one other, the Klamath of Oregon and California, keeps within two states. All of the rest—the Upper Missouri, the Platte, the Arkansas, the Rio Grande, the Colorado, and the Columbia system—are multistate rivers. Each of their basins has numerous Indian reservations with federally guaranteed water rights. Further, the upper Missouri, Rio Grande, Colorado, Columbia, and several smaller rivers carry obligations to Canada or Mexico. Indeed, water policy on the Columbia is so encompassing that, for example, it must account for the fact that Idaho salmon travel thousands of miles in their lifetimes; these fish not only are harvested by sports, commercial, and tribal fishers in Idaho, Oregon, and Washington, but also are pursued by sports and commercial fishers in Alaska as well as by Canadian, Russian, and Japanese boats.25 The inland Columbia River tribes filed suit against the state of Alaska for its regulatory practices involving Columbia River salmon.26 The multifaceted pressures on the Columbia have led, among other things, to federal regulation of water flows in the Columbia to create favorable conditions for young salmon and steelhead heading out to sea.27

Western water—a moving, interstate, even international, resource


26. Yakima Indian Nation v. Baldridge, No. C80-342 T (W.D. Wash.) (filed June 4, 1982). The many parties have entered into a stipulation that effectively stays the litigation by agreeing that the primary mechanism for resolving the issues should not be the litigation but rather a commission established by the United States/Canada Pacific Salmon Treaty, signed at Ottawa on January 28, 1985. Stipulation and Order, id. (March 7, 1985).

27. See infra note 45.
sought by numerous commercial, recreational, and political interests—is not logically a matter to be left to the sole discretion of any single local jurisdiction. We have seen the federalizing of similar resource issues, including air pollution, toxic wastes, and even water pollution. All of those programs allow considerable flexibility to the states, but essentially the states must find a way to achieve national standards. Ultimately, the pressures in these areas of natural resources law are not fundamentally different from the forces that led us to adopt national programs in areas such as shipping, securities and antitrust regulation, and labor relations.

Of course, historical factors often transcend logic, even the logic of political geography, and that has been preeminently true in western water policy. A mixture of industrial clout, pressure from state water agencies, a lack of concern on the part of eastern political interests, and a generally admirable desire of westerners to be left alone all have worked together to form the “Iron Triangle”—one point comprised of private western water development interests and the state agencies; another corner in the federal water development agencies; and a final point in the key congressional subcommittees controlled on these issues by western congressmen. The Iron Triangle blunted much of the compelling logic of comprehensive planning and created a system of outside funding and internal control, the best of both possible worlds for development interests: Congress provided heavily subsidized federal projects, but the water was distributed in accordance with state law, which in turn gave preferences to the consumptive users favored by the commodity-oriented developers represented in the Iron Triangle. Federal funding of western water development projects became “almost ritualistic.”

The states continue to play a paramount role in western water law and policy, especially in determining rights to the use of water. This dominance of state law, however, has seen a series of inroads since about World War II. The Secretary of the Interior effectively decreed water rights on the lower Colorado among the lower basin states by entering into water delivery contracts, and the Supreme

Court upheld the administrative action.\textsuperscript{32} The Supreme Court enforces the demands of federalism by refereeing disputes among states in interstate watersheds.\textsuperscript{33} The federal pollution laws have taken effect.\textsuperscript{34} The Endangered Species Act requires sufficient flows to protect covered species.\textsuperscript{35} Various laws regulating salmon and steelhead harvesting have affected water allocations.\textsuperscript{36} The 1982 decision in \textit{Sporhase v. Nebraska}\textsuperscript{37} made it clear that the demands of interstate commerce can override the desire of any single state to ban exports of water. The Court found that states regulate water but do not own it, calling the notion of state ownership of water "a legal fiction."\textsuperscript{38} A new era in management of the federal public lands, which comprise forty-eight percent of all land in the eleven western states, has imprinted water policy by promoting erosion-preventing practices on federal timber and range lands, by protecting key high-elevation watershed lands, by establishing wild and scenic rivers, and by setting reserved rights in many federal landholdings, including national parks.

\textsuperscript{33} See, e.g., Colorado v. New Mexico, 104 S. Ct. 2433 (1984); Texas v. New Mexico, 103 S. Ct. 2558 (1983).  
\textsuperscript{34} See supra note 28.  
\textsuperscript{36} See generally infra notes 44-45.  
\textsuperscript{38} 458 U.S. at 951. This has not stopped state courts from continuing to rely on the fiction of state ownership of water. See, e.g., Montana Coalition for Stream Access v. Curran, 682 P.2d 163, 166 (Mont. 1984).

State authority over water is ample, but it is based on reserved power under the tenth amendment, not on ownership. The famous statement in California Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 163-64 (1935) ("What we hold is that following the [Desert Land Act] of 1877, if not before, all nonnavigable waters then a part of the public domain became publici juris, subject to the plenary control of the designated states....") is itself a legal fiction based on concepts of ownership. There was no need to "sever" water from the public domain, \textit{id.} at 158, to establish state regulatory authority—such power always existed by dint of the tenth amendment unless preempted by federal authority. Thus state courts were correct in applying state water law on the public lands from the beginning. See, e.g., Irwin v. Phillips, 9 Cal. 140 (1855). \textit{C.f.}, California v. United States, 438 U.S. 645 (1978) (state law applies to federal reclamation projects unless overridden by specific congressional provision); United States v. New Mexico, 438 U.S. 696 (1978) (Congress has authority to establish federal reserved rights but state water law applies unless federal power actually exercised); Andrus v. Charlestone Stone Products, Inc., 436 U.S. 604, 614 (1978) (congressional water policy in the mining laws has been "passive" and has "affirmed the view that private water rights on federal lands were to be governed by local law and custom."). See generally T release, \textit{Uneasy Federalism-State Water Laws and National Water Uses}, 55 WASH. L. REV. 751, 758-68 (1980); Wilkinson, \textit{The Field of Public Land Law: Some Connecting Thread and Future Directions}, 1 PUB. LAND L. REV. 1, 19-23 (1980).
wildlife refuges, and wilderness areas. And, of course, the balance point has shifted—although we are years from knowing how far—by the determination of Indian tribes to assert their *Winters* rights in order to help fulfill the essential treaty promise that their reservations be homelands.

State domination of water policy, then, has been grudgingly eroded, in fits and starts, on a number of fronts. We have developed, and will hold to, a policy matrix that recognizes a set of legitimate state interests in the allocation of water but that also accommodates larger national interests including the needs of downstream states and nations, water quality, recreation, the environment, and Indian tribes.

I do not pretend to be able to predict with complete accuracy the substance of future federal involvement. It is likely to include increased local cost-sharing and financing schemes, but national participation in western water projects will continue, with subsidies of a much lesser magnitude and surely with greater concern for Indian interests. I expect that there will be few, if any, new projects without an Indian component. In addition, in spite of bitter opposition from development interests, environmentalists may succeed in lobbying Congress and the public land agencies for expanded federal requirements for instream flows to protect recreation and wildlife on federal lands. Further, we may well be near some form of federally mandated water conservation practices, especially concerning interstate ground water aquifers such as the Ogallala, where shortages are already so acute that valuable farmland has been forced out of production.

The institutional form of federal action will be important in itself. Perhaps it will be in the fashion of administrative intervention, of which we have had one dramatic example when Interior Secretary Andrus used the Central Arizona Project as a lever to pressure Arizona into adopting a reform ground water code to conserve water and protect Indian water rights. Such jawboning has been employed by the Interior Department in the past to encourage modernizing of state

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41. *See, e.g., M. Bittinger & E. Green, You Never Miss the Water Till . . . (The Ogallala Story) (1980).*

water laws. We do well to remember that the federal funding sought by the states implicitly vests federal water agencies with such informal authority should they choose to exercise it.

New federal multipurpose water legislation could well look to the creation of regional bodies with state representation in recognition of the historic state role. One model is the Northwest Power Planning Council, established by the Northwest Power Act of 1980 to set energy and fisheries policy—major components of water policy—in the Columbia River Basin. The Power Planning Council is created by federal law, and must meet a congressionally established mandate, but it is not a federal agency. Each of the four states appoints two members to the Commission, which is directed, among other things, to protect Indian fishing and water rights, instream flows, and wild fish runs. It is an innovative attempt to attack the seemingly intractable water policy issues of the Pacific Northwest. The issues elsewhere are different—there are many more cattle, and many fewer salmon, in the upper Missouri and the Colorado basins than in the Columbia—but the institutional arrangement set out in the Northwest Power Act might be an appropriate way to give proper recognition both to national needs and state prerogatives.

But, whatever the specifics and whatever the positions of the current administration, my view is that people in this field act at their own peril if they fail to recognize the probability of an expanded federal role—not in the historic arena of funding development projects, but rather in the sphere of adopting substantive requirements to meet pressing contemporary needs. A set of large challenges must be resolved—hopefully soon—and their scope is such that the states by themselves cannot hope to tackle all aspects of them.

The second development I wish to explore is, in my judgment, likely to be far and away the most important substantive movement in both state and federal policy in the foreseeable future. It is conservation of water, the essential policy element in seeing that enough water is available for both old and new uses. Conservation will influence or

43. See, e.g., R. Dunbar, supra note 1, at 115-16, 120.
45. In implementing the 1980 Act, a major thrust of the Northwest Power Planning Council has been to focus on preservation of wild fish runs and maintenance of instream flows. One program has been the establishment of a "water budget," by which state fish and wildlife agencies and Indian tribes agree upon the release of a fixed volume of water during the spring runoff (April 15-June 15 of each year) in order to facilitate downstream migration of juvenile salmon and steelhead. See Wilkinson & Conner, supra note 25, at 92-94.
determine most proposed projects, disputes involving Indian water rights, and environmental controversies. Such a statement does not negate the fact that techniques other than conservation of water will doubtless be employed to distribute water to new uses in an efficient manner. Various devices will be employed to free up the transfer of water by reducing the costs and legal barriers that are now attendant to leases and sales.\textsuperscript{46} We will see some interbasin transfers, although not the grandiose schemes for iceberg-towing, for undersea aqueducts, or for pipelines to transport water to the Southwest from the Columbia Basin or Hudson Bay.\textsuperscript{47} They are neither cost effective nor politically or environmentally acceptable.

The primary method for dealing with the critical issue of creating new water supplies will be to conserve water from existing supplies.\textsuperscript{48} For generations, water conservation has been defined chiefly as the construction of new water projects. But most of those proposals will have difficulty satisfying the scrutiny of this newly cost-conscious field. In addition, nearly all of the prime dam sites in the West have already been utilized. Even more fundamentally, water storage projects are conservation projects only in the sense that they capture water that would otherwise flow out to sea. True water conservation is a much broader concept requiring users to employ waste-saving practices designed to ensure that all, or a great percentage of, water is actually applied to the intended use and not to leaks, spills, or evaporation. A major source of new water is the conservation of water in existing uses.\textsuperscript{49}

Literally every comprehensive study of water policy has stressed the central importance of conserving water.\textsuperscript{50} There is waste in indus-


\textsuperscript{49} We have, of course, begun to apply this principle in the field of energy, where the pressure for development of new sources has been somewhat reduced by conservation practices. Water policy and energy policy can coincide, as is the case with production of hydroelectric and steam-electric power, both of which require large amounts of water.

\textsuperscript{50} See generally, \textit{National Water Commission}, supra note 15; United States Department of Interior, \textit{Westwide Study Report on Critical Water Problems Facing the Eleven Western States} (1975);
try and in municipal systems, but misuse of water by irrigators holds special significance because so much water in the West is devoted to that purpose. Water waste is not an entirely precise term and can be given various physical and legal definitions. When I use the phrase in the irrigation context, I mean to include as waste any water unnecessary for farming if modern irrigation practices are employed; most water should be consumed by the crop, with some unavoidable losses in conveyance and application and, in some cases, for leaching of salts. Thus elimination of waste in this commonly accepted sense does not require absolute efficiency but it does call for the elimination of antiquated practices.

Although irrigation efficiency has improved in some areas, outmoded and inefficient irrigation practices continue to result in massive waste of water in most regions of the West. The primary causes are excessive runoff and seepage from uneven fields; seepage from earthen irrigation canals; evaporation from reservoirs and open conveyancing systems; excessive application of irrigation water to fields; and evapotranspiration by phreatophytes (noncrop, water-loving plants that consume large quantities of water). The United States Soil Conservation Service (SCS) estimates that total annual water waste due to irrigation amounts to twenty-four million acre feet per year. Thus, if the SCS's rough estimate is substantially accurate, each year irrigators cause an irrecoverable loss of water that is almost double the annual flow of the Colorado River and that exceeds the total volume of water consumed by all municipalities and industries in the nation. Because of the high incidence of water use by western irrigators and because of wide-

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51. Definitions of waste are discussed in Shupe, supra note 48, at 489-91. Modern irrigation practices are discussed infra note 58, and accompanying text, and infra note 104 in connection with the Arizona Groundwater Management Act of 1980. One rule that has been used to justify excessive diversions is that irrigators need comply only with the conservation practices used by other irrigators in the local area. See, e.g., Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 3 Cal.2d 489, 45 P.2d 972, 997 (1935) (an irrigator “is entitled to make reasonable use of the water according to the general custom of the locality, so long as the custom does not involve unnecessary waste.”)


53. U.S. Soil Conservation Service, supra note 52, at 17. A similar conclusion was reached in Departments of Interior and Agriculture and Environmental Protection Agency, Interagency Task Force Report: Irrigation Water Use and Water 22-23 (1979) (loss of 21.1 million acre feet). Both estimates are for irrecoverable losses to the stream systems.

54. NATIONAL WATER COMMISSION, supra note 15, at 11.
spread wasteful practices, irrigation in western states has been described by the United States Water Resources Council as "a prime candidate for water conservation"\(^{55}\) and by the National Water Commission as affording the greatest potential, as well as the greatest need, for water savings."\(^{56}\)

Developing an effective program to combat waste of irrigation water is no simple task. Irrigation interests dominate water politics in both the state capitals and in Washington, D.C. In addition, identifying true waste is not always easy. Water from leaky ditches or from an overwatered field may reenter the stream as return flow and be available to downstream users. More efficient irrigation systems employing pumps or sprinklers may consume large amounts of electricity or gasoline, thus conflicting with the goal of energy conservation. In some cases, removing phreatophytes and lining canals can destroy wildlife habitat.\(^{57}\) Further, there are important social and cultural issues. No one wants to declare war on the western rancher or farmer. Many marginal operations would be jeopardized by rigid conservation requirements that must be met immediately. It is unacceptable to force an end to farming and ranching operations and to the local traditions and open space that they contribute to the American West.

Nevertheless, good conservation practices can, over time, be adopted for western irrigation. Pioneer-style earthen ditches can be lined with cement to eliminate leaks and encroachment by phreatophytes. Water can be saved on fields by abandoning flood irrigation in favor of furrow, sprinkler, or trickle irrigation, methods that distribute water evenly and efficiently. Water can be conserved by laser-leveling of fields so that water does not collect in low spots or run off on slopes or in gulleys.\(^{58}\) All of us should support tax incentives, low-interest loans, and other programs to provide incentives for farmers to achieve these ends.\(^{59}\)


\(^{57}\) See, e.g., Ohmart, *A Riparian Case History: The Colorado River*, found in: Importance, Preservation, and Management of Riparian Habitat: A Symposium, U.S.D.A. General Technical Report RM-43 at 35-47 (1977) (describing bird species exhibiting a strong preference for cottonwood habitats, which are comprised of phreatophytes such as cottonwood, willow, mesquite, and the recently introduced salt cedar or *Tamarix*).

\(^{58}\) These and other conservation measures are discussed in depth in Shupe, *supra* note 48, at 501-10. Importantly, Shupe points to a range of benefits to farmers, including reduced production costs, erosion control, and salinity amelioration, from good conservation practices. *Id.* at 513-17. *See also California Department of Water Resources, Water Conservation in California* 59-117 (1984).

\(^{59}\) Several western state legislatures have provided loans and grants to irrigators for water devel-
But incentive programs must be accompanied by the sharp edge of compulsion. First, pricing policy should be used to phase out subsidies for water users and to force conservation by delivering water at its actual, higher cost. As The Conservation Foundation has said, "only rarely in the United States does any government treat water as if it were a valuable commodity." With few exceptions, western states allow appropriations from streams, lakes, and aquifers without charge. Most developed water is supplied at subsidized rates; federal irrigation water is priced at nineteen percent of its real cost. We should allow the message of reform-minded resource economists to take hold: the incentive to save water will be diminished so long as water can be obtained at an artificially low cost.

Second, the courts and administrative agencies should accelerate the enforcement of the prohibitions against waste that have always been part of western water law. The state codes prohibit waste of water and typically make it a misdemeanor. Historically, these provisions have been mostly theoretical, as courts and water agencies have seldom cracked down on waste. Modern decisions, however, have begun to take on a very different cast. The doctrine of beneficial use has always been said to prohibit waste; several recent opinions have

opment projects, some of which have been used for conservation programs. See e.g., U.S. DEPARTMENT OF THE INTERIOR, U.S. DEPARTMENT OF AGRICULTURE & U.S. ENVIRONMENTAL PROTECTION AGENCY, IRRIGATION WATER USE AND MANAGEMENT 12 (1979). It follows from what I have said here that such funds should properly be allocated primarily to modernization of existing facilities, rather than to new structural approaches such as dams. One rule stifling conservation practices is the prohibition against using saved water to irrigate new lands. E.g., Salt River Valley Users' Ass'n v. Kovacovich, 3 Ariz. App. 28, 411 P.2d 201 (1966). California has modified the rule legislatively. See CAL. WATER CODE §§ 1010-1011 (West 1985 Supp.).

See generally CONSERVATION FOUNDATION, supra note 48, at 408.


The environmentalists' clout is likely to increase during the next four years. They have seized the initiative on the issues of cost and subsidies, and their advocacy of such concepts as marginal cost pricing and price elasticity will continue to build support. After the Carter years, the environmentalists have rediscovered the potential for grass-roots support and have learned to work with conservatives who are truly concerned about runaway costs.

See e.g., NEV. REV. STAT. § 533.460 (1979); OR. REV. STAT. §§ 540.720, 540.990(2) (1983). See generally Pring & Tomb, supra note 48. Professor Sax has observed that, in the judicial opinions on water waste, "it is easy to be misled by the inconsistency between what the courts say and what they do." J. SAX, WATER LAW, PLANNING & POLICY—CASES & MATERIALS, 272-73 (1968).

See e.g., Union Mill & Mining Co. v. Dangberg, 81 F. 73, 97 (D.Nev. 1897) ("An excessive
put teeth into the requirement.66 Other courts have taken the approach that wasted water is deemed abandoned or forfeited.67 In either case, a water user—be it a city, farm, mine, or manufacturing plant—consuming two thousand acre feet when one thousand would suffice is held to have no right to the wasted thousand: the operation is effectively forced to improve its waterworks to accommodate the lesser, although sufficient, quantity of water. As the Colorado Supreme Court, the nation's busiest water court, has explained in implementing its "maximum utilization doctrine,"68 "there is read into every decree awarding priorities the implied limitation that diversions are limited to those sufficient for the purposes for which the appropriation was made, regardless of the fact that such limitation may be less than the decreed rate of diversion."69

Modern values have led to the alteration of water law in another

diversion of water for any purpose cannot be regarded as a diversion to a beneficial use. Water in this state is too scarce, needful, and precious for irrigation and other purposes, to admit of waste.

66. The Idaho Supreme Court has employed the beneficial use doctrine to combat the widespread use of inefficient conveyancing systems. The quantity of water to which an irrigator is entitled must be measured at the point that it enters the conveyancing system, thus requiring the irrigator to bear any loss that occurs after the water enters the system. Glenn Dale Ranches, Inc. v. Shaub, 94 Idaho 585, 588, 494 P.2d 1029, 1032 (1972). In Wyoming, the Supreme Court refused to approve a transfer of an asserted water right that involved waste, saying that "an appropriator does not acquire a water right in water which he historically has not beneficially used." Basin Elec. Power Coop. v. State Bd. of Control, 578 P.2d 557, 569-70 (Wyo. 1978). See also Green River Dev. Co. v. FMC Corp., 660 P.2d 339 (Wyo. 1983). The Utah Supreme Court has also refused to recognize the longstanding waste of water as a beneficial use. See In re Water Rights of Escalante Valley Drainage Area, 10 Utah 2d 77, 348 P.2d 679, 681-82 (1960).

67. Oregon cases have recognized the important principle that a diversion of a certain quantity of water may have been reasonable at the time it was originally made, but that the subsequent development of more efficient technology may, over time, require that the original quantity of water diverted be decreased in order to reduce waste. See, e.g., Warner Valley Stock Co. v. Lynch, 215 Or. 523, 356 P.2d 884 (1959). California courts, enforcing a constitutional provision against "waste or unreasonable use," CAL. CONST., art. XIV, § 3, have held water users to a high standard of reasonableness. E.g., Joslin v. Marin Mun. Water Dist., 67 Cal. 2d 132, 60 Cal. Rptr. 377, 429 P.2d 889 (1967); see also infra notes 82-86.

68. The maximum utilization rubric was first articulated in Fellhauer v. People, 167 Colo. 320, 323, 447 P.2d 986, 994 (1968):

It is implicit in these constitutional provisions [in COLO. CONST. art. XVI, § 6] that, along with vested rights, there shall be maximum utilization of the water of this state. As administration of water approaches its second century the curtain is opening upon the new drama of maximum utilization and how constitutionally that doctrine can be integrated into the law of vested rights. (emphasis in original) The court later noted that "the policy of maximum utilization does not require a single-minded endeavor to squeeze every drop of water from the valley's aquifers.... Optimum use can only be achieved with proper regard for all significant factors, including environmental and economic concerns. [citing authority]." Alamosa-LaJara Water Users Protection Ass'n v. Gould, 674 P.2d 914, 935 (Colo. 1983).

context, outside of the waste issue. Traditionally, water could be used only for beneficial uses, which were defined as domestic purposes and commercial uses such as agriculture, industry, mining, power generation, and stockraising. In almost all cases this meant that water had to be physically diverted from the stream in order to effect a valid appropriation.

Most western legislatures, however, have announced that recreation and wildlife are also beneficial uses of water. Many western states have adopted instream flow programs that leave water in the stream, unavailable for consumptive appropriation below a specified level, for fish, wildlife, recreation, and aesthetics. The minimum stream-flow programs are struggling, but they surely will be gradually expanded and improved. Several state water agencies have begun to take a more activist role by denying applications or imposing conditions on private water development projects in the public interest.

The new directions I have discussed converge in five current, ongoing sets of developments—two in California, two in Montana, and one in Arizona—that tell us a great deal about the future of western water. The first is National Audubon Society v. Superior Court of Ct. 193 (1983) ("It is settled that beneficial use expresses a dynamic concept, which is a variable according to conditions . . . and therefore over time").

70. See 1 W. Hutchins, supra note 2, at 522-545.

71. See, e.g., Hardy v. Beaver County Irrigation Co., 65 Utah 28, 234 P. 524 (1924); Simons v. Inyo Cerro Gordo Mining & Power Co., 48 Cal. App. 524, 192 P. 144 (1920); Brand v. Lienkaemper, 72 Wash. 547, 130 P. 1147 (1913). In a few instances the rule was relaxed to permit an appropriation resulting from natural overflow over shallow streambanks onto irrigation fields. See, e.g., In re Silvies River, 115 Or. 27, 237 P. 322 (1925), modified on other grounds, 122 Or. 47, 257 P. 693 (1927).


73. Instream flow protections in eight western states are assessed in J. Bagley, D. Larson & L. Kapaloski, Adapting Appropriation Water Law to Accommodate Equitable Consideration of Instream Flow Uses (1983). The resistance by consumptive users to instream flow programs is typified by the implementation of the Oregon program. See Note, Preserving Instream Flows in Oregon's Rivers and Streams 11 Env't'l. L. 379, 396-403 (1981). In Colorado, minimum levels have been set on 713 stream segments covering 4186.97 stream miles and on 485 lakes. Memorandum from Annie Janicki, Colorado Water Conservation Board (Mar. 5, 1985) These appropriations for instream flows, of course, are very junior rights and are inadequately enforced. The state has never made a call to protect its instream appropriations. Interview with Steven J. Shupe, Assistant Attorney General, State of Colorado (Dec. 5, 1984). Nevertheless, even junior instream rights on heavily appropriated streams can have one major impact; senior rights apparently cannot transfer their points of diversion upstream if the transfer would affect a junior instream appropriation. See Farmers Highline Canal & Reservoir Co. v. City of Golden, 129 Colo. 575, 272 P.2d 629 (1954) (senior irrigation rights cannot be transferred upstream and put to a municipal use if injury would be caused to junior irrigation rights).

Alpine County” (the Mono Lake case), which in my judgment is potentially as important as any development in western resources law during the last several decades. The California Supreme Court held that diversions by the Los Angeles Department of Water and Power from the streams feeding Mono Lake were modified by the public trust doctrine. In spite of the fact that those diversions had been made earlier in the century, with great care taken to comply with both prior appropriation and riparian law, the court found that public trust rights in Mono Lake had always existed, had never been extinguished, and must be accommodated when consumptive water rights are granted. Just as it had done in water law a century and a quarter earlier in Irwin v. Phillips," the California Supreme Court looked to current societal values, finding that “the public trust has evolved in tandem with the changing public perception of the values and uses of waterways.” The court concluded that environmental factors, as well as appropriative rights, must be taken into account: “Mono Lake has long been treasured as a unique scenic, recreational and scientific resource, but continued diversions threaten to turn it into a desert wasteland.”

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76. 5 Cal. 140 (1855), discussed supra text, notes 6-8.
77. 189 Cal. Rptr. at 356; 658 P.2d at 719. The California Supreme Court had earlier recognized that private rights must comport with evolving public standards as recognized in the public trust doctrine. See, e.g., Marks v. Whitney, 6 Cal.3d 251, 98 Cal. Rptr. 790, 796, 491 P.2d 374, 380 (1971):
The public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the state is not burdened with an outdated classification favoring one mode of utilization over another. There is a growing public recognition that one of the most important public uses of the tidelands—a use encompassed within the tidelands trust—is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area. It is not necessary to here define precisely all the public uses which encumber tidelands. (citation omitted)
78. 189 Cal. Rptr. at 353, 658 P.2d at 716. The fact that the perception of the California Supreme Court in 1983 is indeed an evolution from earlier perceptions of the same watercourse is exemplified by a comparison with this observation by a notable earlier visitor:
Mono Lake lies in a lifeless, treeless, hideous desert, eight thousand feet above the level of the sea, and is guarded by mountains two thousand feet higher, whose summits are always clothed in clouds. This solemn, silent, sailless sea—this lonely tenant of the loneliest spot on earth—is little graced with the picturesque. It is an unpretending expanse of grayish water, about a hundred miles in circumference, with two islands in its center, mere upheavals of rent and scorched and blistered lava. . . . This water is not good for bruised places and abrasions of the skin. We had a valuable dog. He had raw places on him. He had more raw places on him than sound ones. He was the rawest dog I almost ever saw. He jumped overboard one day to get away from the flies. But it was bad judgment. In his condition, it would have been just as comfortable to jump into the fire. The alkali water nipped him in all the raw places simultaneously, and he struck out for the shore with considerable interest. He yelped and barked and howled as he went and by the time he got to the shore there was no bark to him—for he had barked the bark all out of his inside, and the alkali water had cleaned the bark all
This drive to place reasonable limits on private uses in order to allow the exercise of broader public trust rights is also reflected in the law of North Dakota, 79 Idaho, 80 and Montana, 81 and can be expected to influence water law directly and indirectly throughout the West. The recognition of the public trust doctrine in water law is the single strongest statement that historic uses must accommodate modern needs.

In spite of these advances, the truth is that the national environmental movement has placed issues of water quantity near the bottom of its agenda. Air and water pollution, wilderness preservation, federal forest and rangeland practices, and toxic wastes have all been given a kind of de facto priority. This is due in significant part to the tradition of state control over water allocation. Even the considerable efforts of firms such as the Environmental Defense Fund, Sierra Club Legal Defense Fund, National Wildlife Federation, and National Audubon Society have only scratched the surface considering the thousands of major water decisions, made by state water agencies in the nineteen western states, that go uncontested every year. My expectation is that the national groups are likely to conclude that water quantity issues must in substantial part be treated as state issues and that environmental organizations will establish water advocacy firms for each western state, or perhaps for each two- or three-state region. Only in this way can state water agencies be monitored effectively.

In short, this country has yet to establish an ethic for water quantity, as the nation has done for land, air, trees, some animals, and, ironically, even water quality. Nevertheless, our rivers and lakes, and the creatures that depend on them, touch deep and profound chords in our society. Diverse movements in the law reflect those values. A

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water quantity ethic is fast developing, and an even broader "watershed ethic," integrating all of the values of natural systems and best management practices, will also eventually command public acceptance. It is shortsighted for any group concerned with water policy to underestimate the growing force of these changing perceptions. That is the ultimate lesson of the Mono Lake case.

The second event in California came to a head in June, 1984 when the State Water Control Board issued an order entitled "Decision Regarding Misuse of Water by Imperial Irrigation District." The district, located in southeastern California, is the largest user of Colorado River water, having diverted in recent years about 2.9 million acre feet annually of the roughly fourteen million acre feet produced by the river each year. California has been receiving as much as 5.4 million acre feet annually from the Colorado but that must drop to 4.4 million acre feet, plus one-half of any surplus among the lower basin states, when the Central Arizona Project goes on line.

The Control Board ruled that the Imperial Irrigation District has been violating California constitutional and statutory prohibitions against waste and unreasonable use of water by allowing more than one million acre feet, a thirty-eight percent loss, to enter the Salton Sea as return flow. This water was unavailable to other parties, including the Metropolitan Water District, who might otherwise use this part of California's Colorado River entitlement. In this comprehensive ruling, the Board ordered the Imperial Irrigation District to submit a detailed plan for control of excessive leach and tail water, canal seepage, and canal spills. The Board also ordered the development of a rigorous water accounting and monitoring procedure to quantify actual water deliveries and system losses.

83. Control Board decision, supra note 82, at 7.
85. Control Board decision, supra note 82, at 7. The provision in the California Constitution is art. XIV, § 3. See also CAL. WATER CODE §§ 100, 275 (West 1971 & Supp. 1985).
86. Control Board Decision, supra note 82, at 67-71. The Imperial Irrigation District has challenged the Control Board's order in court. On March 28, 1985, a state trial judge ruled in a brief opinion that the Control Board had authority to investigate, conduct an administrative hearing, make findings on reasonable use, and issue an order of compliance, but that the Control Board was required to institute a court action, with the reasonable use issue to be tried de novo, if the District refused to comply with the Board's administrative order. Imperial Irrigation District v. State Water Resources Control Board, No. 58706 (Cal. Super. Ct., Imperial County, Mar. 28, 1985). The State plans to appeal the order. Interview with M. Anne Jenning, Deputy Attorney General, State of California (May 1, 1985).

The ramifications of the trial court's ruling are unclear. The District already has complied with
Another set of recent developments involves the work of the Montana Legislature in spring, 1985, when it adopted two measures, one infusing a range of public interest notions into the state's water code and the other ratifying an Indian water rights settlement. The innovative public-interest legislation, H.B. 680, has four major features. It provides for the comprehensive application of public interest criteria for initial permit applications and for changes in appropriative rights, with the criteria being especially rigorous for diversions in excess of 4000 acre feet. The 1985 Act flatly prohibits private appropriations for transport out of specified basins or for any consumptive use in excess of 4000 acre feet; for those categories, only the Department of Natural Resources and Conservation may make appropriations. The Act conditions out-of-state transport of water. Finally,

87. H.B. 680, 49th Leg., 1985 Mont. Laws— [hereinafter cited as H.B. 680]. The legislation closely follows legislation recommended by the Select Committee on Water Marketing. The initiative, and relevant Montana water law, are examined in Final Report of the Select Committee on Water Marketing. SELECT COMMITTEE ON WATER MARKETING, FINAL REPORT TO THE 49TH MONT. LEG. (Jan. 1985) (copies available from Environmental Quality Council, State Capital, Helena, Montana 59620) [hereinafter cited as SELECT COMMITTEE REPORT].

88. See H.B. 680, supra note 87, § 4 (criteria for issuance of permit; to be codified at MONT. CODE ANN. § 85-2-311); id., § 7 (changes in appropriation rights; to be codified at MONT. CODE ANN. § 85-2-402). The change in use provision applies to changes in the place of diversion, the place of use, the purpose of use, or the place of storage. Id. § 1(5).

89. For such diversions, the applicant must show by clear and convincing evidence that the proposed application is a "reasonable use" which requires consideration of, among other things, minimum stream flows for existing water rights and aquatic life; the effects on water quality; and the creation of, or contribution to, saline seep. Id. § 4(2). The Department must examine the proposal to determine the existence of significant adverse environmental impacts, thus triggering an environmental assessment. Id. § 4(2)(e)(vi). These public interest provisions expand and replace MONT. CODE ANN. § 85-2-311, a temporary two-year measure enacted in 1983. The more onerous "level 2" public interest provisions described here will apply to a limited number of applications; only 56 of 8000 permit applications between 1973 and 1985 were for diversions exceeding 4000 acre feet. SELECT COMMITTEE REPORT, supra note 87, at VI-4.

90. H.B. 680, supra note 87, § 3 (to be codified at MONT. CODE ANN. § 85-2-301). The designated basins are the following, including their tributaries: the Clark Fork River, the Kootenai River,
H.B. 680 institutes a limited water leasing program. The only way in which a private user can transport water out of the specified basins or obtain rights to consume in excess of 4000 acre feet is to lease the water from the Department. The water leasing program is modest in several respects, among them the fact that the 4000-acre-feet-consumptive limit on appropriations is high enough that it will apply only to extremely large projects. Nevertheless, the 1985 Act offers several valuable concepts in its broad-based imposition of public rights, and its break with traditional laissez-faire prior appropriation law.

In 1985, the Montana Legislature also approved a water rights compact between the state and the Assiniboine and Sioux Tribes of the Fort Peck Reservation. There have been two other settlements of Indian water rights in recent years, but the Fort Peck-Montana Compact is noteworthy because it is due in part to the Montana Reserved Water Rights Compact Commission (Compact Commission), the only attempt by a state to institutionalize water rights negotiations with Indian tribes. The Compact Commission process has moved haltingly—of the seven Montana tribes, the Blackfeet have so far refused to participate and a 1983 Fort Peck-Montana Compact was tentatively agreed to by the negotiators, but the Compact Commission never submitted it to the legislature for ratification. Nevertheless, the ratification of the renegotiated 1985 Fort Peck-Montana Compact seems to offer preliminary validation of Montana’s compact-negotiation approach.

the St. Mary River, the Little Missouri River, the Yellowstone River, and the Missouri River to its confluence with the Yellowstone. Id. § 3(2)(a)(i).

91. See, e.g., H.B. 680, supra note 87, § 4(3)(b) (issuance of permits for appropriation and transportation out-of-state), § 7(5) (changes in appropriation rights for the withdrawal and transportation of appropriated groundwater for use outside the state). On interstate transporting of water, see supra note 37.

92. See H.B. 680, supra note 87, § 13. The program is described in SELECT COMMITTEE REPORT, supra note 87, at VI-9 to -12.


94. Only two Montana agricultural appropriators applied for consumptive rights in excess of 4000 acre feet per year between 1973 and 1985. SELECT COMMITTEE REPORT, supra note 87, at VI-10 to -11. The coverage for the leasing program is narrower than for the “level 2” public interest criteria, see supra note 89, because the floor for leasing is 4000 acre feet consumptive while the floor for the “level 2” public interest criteria is 4000 diverted.

95. State of Montana/Assiniboine and Sioux Tribes of Fort Peck Indian Reservation Compact, ratified in S.B. 467, 49th Leg. 1985 Mont. Laws — (quantifying reserved water rights of Assiniboine and Sioux Tribes of Fort Peck Indian Reservation and providing guarantees for the water rights of certain non-Indians living in water basins within or adjacent to the Reservation boundaries).


98. SELECT COMMITTEE REPORT, supra note 87, at IV-16 to -17.
Some tribes oppose any present quantification of their future-looking reserved rights and are opposed to negotiations. Others, however, believe that the parties can tailor an individualized resolution better than can a judge and that under the right circumstances the certainty inherent in a negotiated settlement can be preferable to the protracted litigation required to adjudicate these enormously complex disputes. It may be that the Fort Peck-Montana Compact of 1985 and the Compact Commission process offer a glimpse of the future on these sensitive and far-reaching issues.

The final recent event is the first level of fruition of the 1980 Arizona Groundwater Management Act,99 the most far-reaching statutory water conservation program ever adopted by any state. In December, 1984, the Director of the Department of Water Resources issued the first management plans for active management areas (AMAs).100 These plans are the primary implementation mechanisms for the 1980 Act, the product of a fascinating struggle and reconciliation among the mining industry, irrigators, municipalities, the Department of the Interior, Arizona Governor Bruce Babbitt, and the relentless mandate issued by the state's aridity.101


100. See, e.g., ARIZONA DEPT OF WATER RESOURCES, MANAGEMENT PLAN, FIRST MANAGEMENT PERIOD: 1980-1990 (1984) [hereinafter cited as Phoenix AMA (Active Management Area) Management Plan]. Management Plans were also issued in December, 1984, for the Prescott and Tucson Active Management Areas. The 1980 Act established four initial AMAs, ARIZ. REV. STAT. ANN. § 45-411 (Supp. 1984-85), which included about 80% of Arizona's population, 70% of the state's groundwater overdraft, and 60% of the groundwater pumping. K. Ferris, The Development of the New Arizona Groundwater Code (Oct. 30, 1984) (to be published in 1985 in the proceedings of a groundwater symposium entitled "Groundwater, Crisis or Opportunity," sponsored by the Univ. of Texas at Austin and Texas A & M Univ. during Oct. 29-31, 1984; and also excerpted from GROUNDWATER MANAGEMENT: A KEY ISSUE FOR THE 80's (T. James & S. Ballard eds.), soon to be published) [hereinafter cited as Ferris]. The Director of Water Resources must develop a series of five successive management plans for each AMA through the year 2025, when groundwater withdrawals may not exceed discharge; the conservation requirements will become more rigorous in each successive plan. ARIZ. REV. STAT. ANN. §§ 45-561 to -566 (Supp. 1984-85). The initial plans, cited above, cover the management period ending in 1990.

101. The history of the 1980 Act is told well in Connall, A History of the Arizona Groundwater Management Act, 1982 ARIZ. ST. L.J. 313. The state established a Groundwater Study Commission in 1977 to address the increasingly serious overdraft situation, id. at 323, but the long-simmering tensions among the various interest groups made progress difficult. For example, Jim Bush, the colorful Phoenix attorney representing mining interests, laid the blame for the overdraft condition at the irrigators' feet and fought against potential profits to the farmers if agricultural land were to be retired: "We're not going to buy farms so that the farmers can move to La Jolla and raise martinis." Id. at 325. Connall has extolled Governor Babbitt's abilities to grasp the difficult factual and legal issues and to move the negotiators toward consensus. Id. at 331-32. A key impetus was Interior Secretary Cecil Andrus's personal visit to Phoenix and his insistence that the Department would allocate no Central Arizona
The central provisions of the Act and the recent management plans are a blueprint for serious conservation of western water. Among many other things, The Act provides for a strong state regulatory agency; the imposition of mandatory water duties for individual farm units based upon specified conservation practices; a prohibition against opening new irrigated acres within the AMAs; a program for retiring land from irrigation; compulsory conservation
within metropolitan residential areas;\textsuperscript{107} and the imposition of “ground water withdrawal fees” (a politically necessary euphemism for pump taxes).\textsuperscript{108}

The 1980 Act does not go as far as some would wish; for example, it encourages, but does not actually set, limits on pumpage. Nevertheless, by any reasonable standard it is a remarkable piece of legislation. It foreshadows in bright terms the possibilities for effective combat against waste and overuse.

The judicial and legislative recognition of public environmental rights, illustrated by the \textit{Mono Lake} case and the work of the 1985 Montana Legislature; the crackdown on waste, exemplified by the Imperial Valley decision; the willingness to settle long-simmering disputes over Indian water rights, evidenced by the Fort Peck-Montana Compact; and the campaign against overuse, demonstrated by the Arizona Groundwater Code, are all in their infancy. Regardless of what they may say, many courts and most administrators are still reluctant to order the hard measures necessary to achieve the goals of conservation and environmental protection. But these developments are accelerating and will continue apace. Further, in ways I will now explain, they have major ramifications for the central issue of the years to come, which is to reach a fair accommodation between the traditional uses favored by the prior appropriation doctrine and the new uses recognized by contemporary society.

The decisions against waste and in favor of public rights operate from an unspoken, but critical, premise—a notion, expounded upon by Professor Joseph Sax and others, that underlies recent cases in the field of land use. These decisions have upheld legislation allowing restrictive zoning, setting height limits on buildings, and prohibiting practices such as landfills, and have required public access to areas

\textsuperscript{107} Residential users are subjected to per capita reductions. \textit{Id.} § 45-564(A)(2). The initial management plans, \textit{supra} note 100, are based on reasonable use of 140 gallons per day per capita. Tucson has come close to that figure through its highly successful “Beat the Peak” program, but use in Phoenix still exceeds 250 gallons per day. Ferris, \textit{supra} note 100, at 16-17. Existing supplies of municipal water are not required to meet the 140 gallon per day limit but must reduce per capita deliveries by 6-11\% within two years. New municipal providers must meet the 140 gallon per day standard. See Phoenix AMA Management Plan, \textit{supra} note 100, at 61-81. See also Rocky Mountain Mineral Law Foundation, Water Law Newsletter No. 3 at 1-2 (1984).

\textsuperscript{108} \textit{ARIZ. REV. STAT. ANN.} § 45-611 (Supp. 1984-85). The Director has set a fee of $0.75 per acre foot for calendar year 1985, which will be applied toward the annual administrative costs of approximately $1.5 million. Ferris, \textit{supra} note 100, at 20. No more than $1 per acre foot may be used to defray administrative costs, but during the second ten-year plan an additional $2 fee can be levied to create a fund for augmenting the water supply. \textit{ARIZ. REV. STAT. ANN.} § 45-611(2) (Supp. 1984-85). During the third planning period another $2 fee can be imposed and applied toward the retirement of agricultural land. \textit{Id.} § 45-611(3).
such as dry sand beaches. All of those results cut deeply into traditional prerogatives of private owners of land. They are incursions on the basic form of land ownership, the fee simple absolute, traditionally considered a guarantee of total ownership.

We now learn that the term "fee simple absolute" is a misnomer. Private property rights are always defined by public authority in the first instance, and private land has always been subject to public rights: regulatory prerogatives in fulfillment of the police power and property rights in the form of the public trust doctrine. The public rights may have laid inchoate, but they existed from the moment any owner received a deed, so there is no taking of a property interest when the public rights are exercised to limit the use of land.

These limitations on the ownership of land apply directly to property rights in water. Appropriative rights are not as absolute as they have been assumed to be. In all states they are subject to the prohibition against waste. If a user is applying too much water, there is only a privilege, not a right, in the wasted water and the state may require a lower duty of water based on the governmental power to regulate for the general welfare. Many states will be prepared to enforce an implied condition under the public trust doctrine that major environmental resources cannot be substantially impaired. Further, decreed rights are impliedly subject to obligations to other states, nations, and Indian tribes.

The fact that state-granted water rights, even if decreed, are not as fixed and hard as commonly believed is critical in this transition period of water law. Water now diverted but wasted can be freed up for other uses. Judges have long been solicitous of existing water uses but there is an increasing recognition that there are few equities in poor water practices. On so-called overappropriated rivers, where there is supposedly no water available for new uses, an accommodation can almost always be made if existing users adopt good conservation techniques. This is likely to be a primary method by which

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110. Of course, water scarcity is not alleviated if conserved water is appropriated and consumptively used by development interests. As Professor Helen Ingram has put it, "Conservation should not be regarded as an end in itself, but rather as a means to achieve some aim. ..." (as quoted in Udall, The Tucson Paradox, 87 AUDUBON 98, 99 (Jan. 1985)). See also the "conserve and reallocate" theory.
present uses can be reconciled with demands for water for energy, in-
stream uses, and Indian tribes.111

In conclusion, then, we are finally assessing the value of the prior
appropriation system, bred in the mid-nineteenth century, to the mod-
ern American West. To be sure, some components of the doctrine
have enduring worth. The West could not have been settled, and
would be in a significant measure of disarray today, if rights to the
essential resource could not be charted with reasonable certainty. Jus-
tice Rehnquist’s analogy between land titles and water titles is not
inapt.112

But other elements of the prior appropriation system are failures
in these times. The doctrine breeds wastefulness on a number of
counts; the basic assurance of certainty has too often been twisted into
a guarantee to use whatever amount of water was diverted by outmo-
ded systems in a long-ago era of relative plenty. The “use it or lose it”
mentality, fueled in part by court decisions awarding priorities among
states according to first diversion,113 creates a rush among states on
interstate rivers to dam up the West’s deep canyons in order to capture
water and thereby preserve consumptive rights. Prior appropriation
takes aim at the main hope of struggling Indian tribes. If unchecked,
it can be the death knell for the streams that it draws dry. Western
water law, often hailed as a laissez-faire, market-oriented system, in
fact is riddled with federal subsidies, restrictions against alienation,
and preferences for inefficient uses; to the extent that the market does
operate, prior appropriation is a reminder that the market traditionally
has been ineffectual in protecting minorities and the environment.

The ultimate problem, of course, is that the old doctrine forces us
to proceed today according to the values of a century and a quarter
ago. The promising young shoots in this time of transition all are nur-
tured by our determination to decide by contemporary standards, not
those of a distant time.

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111. This is a two-edged sword for Indian tribes. They, too, will have to continue, or adopt, good
water practices. The law of waste will be applied to Indian rights just as surely as it will be to state-
created rights. Thus tribal planning must take into account additional expenses for conservation.


113. See, e.g., Colorado v. New Mexico, 104 S. Ct. 2433 (1984); Nebraska v. Wyoming, 325 U.S.
589 (1945).
We are, then, in the process of altering our essential ways of thinking about western water. This reconceptualization is reflected in common terminology. Phrases like "water organization" and "water user" have traditionally held narrow meanings. Perhaps we are near the point where we fully recognize that water organizations include not only the Salt River Project and the Denver Water Board but also the Wilderness Society and the Navajo Tribe. We count as water users not just a hard-working farmer and a coal-fired plant but also a rafter, a trout fisherman, and even an artist on the bank of a mountain stream. As these notions incrementally become embedded in the court opinions and the statutes, we push on toward a legal structure that fairly reflects the diversity and richness of the modern American West.