

MARKETPLACE REALLOCATION IN THE COLORADO RIVER BASIN:
BETTER UTILIZATION OF THE WEST'S
SCARCE WATER RESOURCES

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I. INTRODUCTION

The mountains of Utah contain some of the finest winter sports recreation areas in the world. This tremendous ski terrain coupled with the exposure of the 2002 Winter Olympic Games has attracted a worldwide clientele to its numerous destination ski resorts. The red rock desert and canyon country of Southern Utah and the five national parks and other public recreation areas in Utah¹ add to the annual influx of tourists and a resulting development boom in areas like Moab and St. George—both located in the driest corners of the state.

Utah's limited water resources are essentially fully appropriated. Consequently, new development must acquire existing water rights (primarily from current uses in irrigated agriculture) and transfer or convert them to domestic and municipal use. Generally, water has been available for purchase and conversion, enabling development to move forward at a frantic pace. On an intrastate basis, marketplace reallocations have worked relatively well. Willing buyers have found willing sellers. They make their economic deals, and the water has freely transferred to the new use. Unfortunately, the development pressure will not abate. Utah's population will double over the next thirty years or so,² and these new residents will need drinking water, food, housing, and all the other social services that make up the "quality of life" citizens have come to expect in this country. Finding the water to accommodate this new growth will be the challenge for the future. However, housing growth is not the only competitor for Utah's limited water resources.

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¹ Utah's national parks include Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capitol Reef National Park, and Zion National Park. See Utah National Parks, <http://www.utah.com/nationalparks/> (last visited Aug. 25, 2007). Other recreational sites in Utah include Cedar Breaks National Monument, Grand Staircase-Escalante National Monument, Glen Canyon National Recreation Area (Lake Powell), and many others. See National Sites, <http://www.utah.com/nationalsites/> (last visited Aug. 25, 2007).

² See Governor's Office of Planning and Budget, *Utah economic and demographic summary* (2007), available at <http://governor.utah.gov/dea/Projections/07ERGTables.pdf>.

Water is required to develop and extract energy resources. Utah, along with the other Basin States, has substantial deposits of coal, oil shale, tar sands, uranium, and oil and gas that are ripe for development. Environmental and national security concerns will force a shift from dependence on foreign oil towards the development of alternative fuel supplies. However, until those alternative fuels are available, demand will continue for domestically available carbon-based fuels, as evidenced by Utah's resurgence in oil and gas exploration and development over the past several years.³ This, in turn, will require substantial quantities of water, not only to develop these alternative fuel resources, but also to support the population shifts to the resource-rich areas of the country supporting extraction industries.⁴

Utah is the second driest state in the West and its easily developable water has long since been appropriated and placed to beneficial use. The limited water still capable of being developed appears during the high-runoff periods of the year; but without constructing new storage, this ephemeral supply is not reliably available. New reservoirs will not likely be constructed given the current political and environmental climate. Instead, there is pressure to decommission and remove dams, to restore instream flows to protect critical habitat for endangered and threatened fish, and to restore some ecological balance in our water resource planning and allocation process.

Consequently, urban growth, recreational-resort development, environmental restoration, and energy development are all competing for the same limited water resources in the marketplace. Because the market is price driven, the market may not be the best mechanism for reallocation. The market excludes those lacking the financial resources to compete; and the financially excluded interests are typically the same interests that stood on the sidelines as the West's water resources were allocated in the late nineteenth and early twentieth centuries.

In all appropriation doctrine states, water rights are interests in real property that may be sold with the land as an appurtenance or severed and sold separately from the land where it was historically used. As such, water rights are inherently marketable in the West, and there have been well-established intrastate water markets that have enabled the western states to meet the demands of their growing populations. Even so, interstate water sales are largely nonexistent because states keep water for use by their own citizens, and because the local markets have so far been able to meet the demands for conversion of water rights. However, as the western states reach levels of full appropriation of their water resources, it is

³ In fiscal year 2005, the Utah Division of Oil, Gas & Mining issued 2002 new applications to drill oil and/or gas wells, compared to 1329 permits in the preceding fiscal year. UTAH DEP'T OF NATURAL RES., 2005/2006 ANNUAL REPORT 12 (2006), available at http://www.nr.utah.gov/department/DNR_2005_2006_ANNUAL_REPORT.pdf.

⁴ Western coal mining will require 6–14.7 gallons of water per ton; oil shale, 145.4 gallons per bbl; coal gasification, 72–158 gallons per mscf.; coal liquefaction, 175–1,134 gallons per bbl; oil and gas production, 17.3 gallons per bbl; fossil fuel power plants, 0.41 gallons per Kwh; gas processing plants, 1.67 gallons per mscf. ARTHUR D. LITTLE, INC., WATER FOR ENERGY, REPORT TO THE FEDERAL ENERGY ADMINISTRATION (Sept. 5, 1974).

reasonable to assume pressure will build for interstate sales of state water rights from areas of mostly agricultural use to meet growing demands for municipal and industrial water. The appropriation doctrine has accommodated intrastate sales even though the doctrine contains legal and institutional barriers to the reallocation of water. These legal constraints may play a larger role in future reallocation decisions as the demand for water intensifies. Other constraints on water transfers, such as interstate compacts and flawed efforts by states to prohibit the exportation of their water resources to neighboring states, have created additional barriers to interstate sales of water rights. Additionally, the imposition of federal regulatory controls, are further limiting the water supply available for consumptive use and thus affecting the marketplace.⁵

Further, the marketplace is itself an exclusionary environment, as only those with deep pockets can successfully compete for a scarce commodity whose value is being market-driven. Still the marketplace is a viable tool for reallocation of water, but it could work more smoothly if some needed reforms were incorporated into the prior appropriation doctrine.

This paper will briefly examine the origins and foundational tenets of the prior appropriation doctrine, the doctrine's legal barriers to reallocation, and other legal and institutional barriers to the reallocation of water resources, such as interstate compacts; all of which create uncertainties about the availability and reliability of western water supplies for future growth and development and for ecological restoration in the West. These uncertainties need clarification if the West is to meet the competing water demands of the future.

II. APPROPRIATION DOCTRINE UNDER ATTACK

The appropriation doctrine is under siege; indeed some have even declared it dead.⁶ The doctrine is not dead. It is still alive and kicking, but certainly is not well and needs reform. Without meaningful state water law reform, the federal government (by asserting regulatory controls under the Endangered Species Act and the Clean Water Act) is insinuating itself into the allocation process, once viewed as the exclusive province of the western states. And when you add to that the impacts of the public trust doctrine and the assertion of broader public interest criteria in the allocation decisions, it is not too hard to foresee the demise of the appropriated water right as we know it.

⁵ See generally Steven E. Clyde, *Legal and Institutional Barriers to Transfers and Reallocation of Water Resources*, 29 S.D. L. REV. 232 (1984) [hereinafter Clyde, *Legal and Institutional Barriers*]; A. Dan Tarlock, *So It's Not "Ours"—Why Can't We Still Keep It? A First Look at Sporhase v. Nebraska*, 18 LAND & WATER L. REV. 137 (1983); Steven E. Clyde, *State Prohibitions on the Interstate Exportation of Scarce Water Resources*, 53 U. COLO. L. REV. 529 (1982) (hereinafter Clyde, *State Prohibitions*).

⁶ Charles F. Wilkinson, *In Memoriam, Prior Appropriation 1848–1991*, 21 ENVTL. L. v, xvi (1991).

Still there are those old water buffalos who argue that “if it ain’t broke don’t fix it.” However, those who make this argument are the parties who have all the water rights sown up and their rights and manner of uses protected by their priorities and the non-injury rule. Consequently, they see little need for reform. After all, why change a system that provides them everything they need? Still, even some of the senior right holders would probably acknowledge that the prior appropriation doctrine is harsh, because it protects whoever is first in time regardless of the relative value of the water use being made or the inefficiency in application. The doctrine mandates that junior rights be curtailed in times of shortage, even where the junior water right may be used in a more beneficial and more efficient fashion than the prior irrigation rights. It is a fact that most junior appropriators are the more efficient water users; they have become so out of sheer necessity, since they have been left with the spoils and have to make do with much less water.

The prior appropriation doctrine is also very exclusionary in nature. It favors those who arrived first. It awards and protects economic development, diversions, and depletions while ignoring large elements of society who—though silent in the past—today are demanding a seat at the water policy and allocation table. These formerly excluded constituents are from areas of origin where water has been purchased and stripped from the land for use in distant communities. They are recreational enthusiasts who enjoy floating and fishing a live and active stream; they are Native Americans who have waited far too long for their opportunity to have water developed for their benefit; and they are new western immigrants who bring with them a different mind-set honed in other locales where the population is less dependant on water for their very survival. These people embrace the inherent value of simply leaving water running in the stream rather than squeezing every available drop of water from the stream through increased efficiency. However their notion of value and use is contrary to the basic tenets of the doctrine, which makes “beneficial use” the measure and limit of the water right, provides security through priority and the no-injury rule, historically validated only those rights that divert water from the stream for application in some economic producing endeavor, and punishes those who leave water unused by forfeiting their water rights. The new westerner’s notion of how water should be used is the classic example of “waste” as we have come to understand that term in the West. Reconciling these competing voices will not be easy, and finding water to meet their competing needs will be even harder.

Yet, these other voices have become a political and social force in the West, and are causing some changes in the doctrine. More changes will inevitably follow if the doctrine is to survive as the tool for water allocation in the twenty-first century. And the doctrine truly must survive because no better options really exist for water allocation in the West. The West rejected the riparian rights doctrine as unworkable, because water must be used on irrigable lands and in our rapidly growing cities, and the lands adjacent to the streams are often the steep canyons of the West that are ill-suited to farming or habitation. Additionally, too many property interests have vested, and economies built in reliance on the

security of appropriated water rights for us to walk away from the doctrine. The doctrine needs reform, but the beauty of the doctrine is its inherent flexibility. This is what has distinguished the doctrine from riparian rights,⁷ and that is what provides hope for the future.

III. FORMATION OF THE PRIOR APPROPRIATION DOCTRINE

It may be helpful to look briefly at the origins of the doctrine and the federal policy of benign neglect that allowed the appropriation doctrine to dominate water allocation in the West. The prior appropriation doctrine originated from custom and usage in the early mining camps and irrigated farms of the West. Its basic tenet—first in time is first in right—rewarded those who were simply first, with little regard to the efficiency or economy of their use or whether more beneficial uses of water were being precluded.⁸ Beneficial use became the measure and the limit of the water right.⁹ To be beneficial, the use must promote economic activities; and historically required the diversion from the natural water course; both as to provide physical notice of the appropriation of water, and to reduce speculation by forcing development.¹⁰

Once perfected,¹¹ the water right becomes a vested, perpetual property interest subject only to prior rights and the possible assertion of a dominant federal interest. The appropriated water right is entitled to be free from unreasonable interference by other water users. The water right is entitled to full legal protection including due process.¹² The protection of prior rights has been

⁷ A. Dan Tarlock, *The Future of Prior Appropriation in the New West*, 41 NAT. RESOURCES J. 769, 770 (2001) (“The distinguishing feature of prior appropriation is its continual evolution in response to a changing West. Because prior appropriation is grounded in both abstract principles of justice and hard experience, it has constantly had to adapt to changed conditions.”).

⁸ A SUMMARY-DIGEST OF STATE WATER LAWS 475, 719 (Richard L. Dewsnup & Dallin W. Jensen eds., National Water Commission 1973).

⁹ UTAH CODE ANN. § 73-1-3 (1980).

¹⁰ *Bountiful City v. De Luca*, 292 P. 194 (Utah 1930); *Sowards v. Meagher*, 108 P. 1112 (Utah 1910). *See generally*, Frank J. Trelease, *The Concept of Reasonable Beneficial Use in the Law of Surface Streams*, 12 WYO. L. J. 1 (1957).

¹¹ Perfection means that water has physically been put to use. Once an application is approved, the applicant is given a specific amount of time within which to complete the construction of his diversion works and to place the water to beneficial use. An applicant may be granted additional time within which to complete the appropriation upon a showing of diligence or reasonable cause for delay. Diligence requires the applicant to make a reasonable effort to accomplish his undertaking with the dispatch expected of men engaged in a like enterprise, who desire a speedy accomplishment of their designs. *Carbon Canal Co. v. Sanpete Water Users Ass’n*, 353 P.2d 916 (Utah 1960).

¹² *See, e.g.*, *Hunter v. United States*, 388 F.2d 148, 153 (9th Cir. 1967) (concluding that water appropriation “is the equivalent of a grant of the use of the waters from the federal government; and that it is entitled to protection”); *Hughes v. Lincoln Land Co.*, 27 F. Supp. 972, 974 (D. Wyo. 1939) (disallowing an injunction to limit defendant’s right to

given express judicial sanction as a matter of “natural justice.”¹³ Appropriated water rights may be lost due to non-use, through either intentional abandonment or statutory forfeiture. This “use or lose it” tenet, coupled with the non-injury rule that mandates the maintenance of static stream conditions and full protection of historic return flows, creates a negative incentive to conservation practices that would free up water for other beneficial uses. The doctrine does not permit a party who conserves water to benefit generally from the effort, and because implementing conservation is expensive, few venture down that road because the return is simply not worth the investment.¹⁴

The policy of most western states has been to maximize the economic development and use of its water resources.¹⁵ Little thought was given in the early days of western settlement to water conservation, to environmental protection, or to the aesthetic value of flowing water. Conservation, to the extent it was considered, entailed the storage of the random flows of mountain streams for late season irrigation use.

The federal government’s acquiescence in the settlement of the West and the appropriation of water rights under state law promoted western migration and the expansion of our national economy. The doctrine of “first in time, first in right” assured the early settlers of a relatively stable water supply and protected them against interference by junior appropriators. The doctrine served the West well in the past. It can do so for the future as well because of the inherent flexibility of the doctrine. It can be adapted to meet today’s changing economic, social, and environmental concerns. There are many examples of adaptation that have already occurred. One such example is the validation of non-diversionary, instream flow water rights. Instream flow rights were essentially unheard of in the West twenty years ago. The only limited exceptions were for livestock watering directly from a stream and the floating of logs to market.¹⁶ Today, most western states have given instream rights judicial or legislative sanction.¹⁷

use water); *Town of Sterling v. Pawnee Ditch Ext. Co.*, 94 P. 339, 340 (Colo. 1908) (declaring water rights to be “property in the full sense of that term” and protectable).

¹³ *Atchison v. Peterson*, 87 U.S. 507, 512 (1874).

¹⁴ *See e.g.*, *Salt River Valley Water Users Ass’n v. Kovacovich*, 411 P.2d 201, 202–03 (Ariz. Ct. App. 1966) (stating that conservation of water is highly commendable, but “commendable practices do not in themselves create legal rights”).

¹⁵ A SUMMARY-DIGEST OF STATE WATER LAWS, *supra* note 8, at 475, 719.

¹⁶ *Adams, et al v. Portage Irrigation, Reservoir & Power Co., et al*, 72 P.2d 648 (Utah 1937). *But see* *Vaughan v. Kolb*, 280 P. 518 (Or. 1929); *Robinson v. Schoenfeld*, 218 P. 1041 (Utah 1923).

¹⁷ *See generally* COLO. REV. STAT. § 37-92-102(3) (1986); COLO. REV. STAT. § 37-92-1409(2)(f) (1986); IDAHO CODE ANN. § 42-1409(2)(f) (1986); UTAH CODE ANN. § 73-3-7 (Supp. 1988); WYO. STAT. ANN. §§ 41-3-1001 to -1014 (Supp. 1986); *Ritter v. Standal*, 566 P.2d 769 (Idaho 1977); *State Dep’t of Parks v. Idaho Dep’t of Water Admin.*, 530 P.2d 924 (Idaho 1974); *S. Idaho Fish & Game Ass’n v. Picabo Livestock, Inc.*, 528 P.2d 1295 (Idaho 1974).

Further changes will occur as a natural consequence of the shift in societal values and economic forces in the West. Changing economic forces will drive reform more quickly than any other influence. Agriculture, mining, livestock grazing, and the other extractive industries are losing ground to recreation and its servicing industries. This is what many environmentalists have urged for a long time, but the consequences of a recreation-based economy have been far reaching themselves and were never fully appreciated.

As an example, look at Park City, Aspen, Vail, or Jackson to name but a few areas where recreational development has driven the farmer from the land and increased land values beyond the reach of many in society. And rather than water being left in the stream due to the decline of agriculture, many streams are in trouble. Water is being diverted in even greater quantities not only from the surface but also from the ground water system to meet the ever-increasing municipal demand for water in these rapidly developing areas. The loss of irrigated agriculture has resulted in a loss of return flows that historically supported the stream flows late in the summer season.

Development is occurring in the seven Basin states as if an endless supply of water exists to sustain it. Utah, Colorado, Nevada, and Arizona are among the nation's fastest growing states with huge sprawling urban areas that need an ever-increasing supply of water. People are settling in the West because of the landscape and perceived quality of life, apparently not recognizing that their very migration to the area is eroding the quality of life they sought to achieve. Yet America must continue feeding its nation and providing drinking water; public sanitation, economic growth, and water is critical to these uses.

The lesson here is that it is difficult to determine how and where to reform established legal principles, and changes made do not always provide the desired end result. For that reason, reform should move slowly enough to allow the consequences to be fully understood because the resulting effects will last a lifetime or more.

IV. PROTECTION OF EXISTING RIGHTS THROUGH THE RULE AGAINST INTERFERENCE

One area needing attention is the no-injury rule. A water right acquired under the appropriation doctrine becomes a vested, perfected property interest.¹⁸ It is entitled to protection against unreasonable interference from other water users.¹⁹ An appropriator may change his or her place of use, nature of use, or point of diversion.²⁰ The right to change is held to be an inherent, but not absolute, right.²¹

¹⁸ *Hunter v. United States*, 388 F.2d 148, 153 (9th Cir. 1967).

¹⁹ COLO. REV. STAT. ANN. § 37-92-301 (1987); N.M. STAT. ANN. § 72-5-23 to -24 (1985); UTAH CODE ANN. § 73-3-3 (Supp. 1988); *East Bench Irrigation Co. v. Deseret Irrigation Co.*, 271 P.2d 449 (Utah 1954).

²⁰ *E.g.*, UTAH CODE ANN. § 73-3-3 (Supp. 1988).

²¹ *See Langenegger v. Carlsbad Irrigation Dist.*, 483 P.2d 297 (N.M. 1971); *White v. Wheatland Irrigation Dist.*, 413 P.2d 252 (Wyo. 1966).

It is a qualified right because a change of use may be made only so long as no other rights, whether junior or senior in priority, are impaired.²²

Under most change of use statutes, appropriators may reallocate their water to other beneficial uses any number of times without losing their original priority date.²³ This is important because it allows appropriators to reallocate their water to new uses while still having their priority protected and being protected against interference by others who may also change their manner of use. The requirement of non-interference, however, limits the nature and extent of any such change of use by the appropriator, because the proposed change of use may not interfere with the vested rights of others, nor may the water right be expanded by virtue of the change.²⁴

Interference means the denial of water. It may occur in any number of ways. An appropriator may seek to change his or her point of diversion along a stream or from a surface stream to the underground basin. The new point of diversion may enable the appropriator to intercept water that previously reached the points of diversion of others downstream, thereby depriving them of the water they need to satisfy their vested rights. The appropriator may change his or her place of use so that the return flow from this new use may return to another drainage basin, or the water may return at a point in time when the downstream appropriator may no longer need it or be able to use it. The point of return may also change so that water returns to the same watercourse, but at a point below where downstream users may gain access to the water. Any such disruption may entitle the injured water user to injunctive relief and even monetary damages.

Downstream water users generally acquire a vested right against all upstream water users to have stream conditions remain substantially as they were when they

²² See ALASKA STAT. § 46.15.160 (1987); ARIZ. REV. STAT. ANN. § 45-172 (1987); CAL. WATER CODE §§ 1700-1706 (West 1971); COLO. REV. STAT. § 37-92-302 (Supp. 1987); IDAHO CODE ANN. §§ 42-108-211 (Supp. 1988); KAN. STAT. ANN. § 82a-708b (1984); NEB. REV. STAT. § 46-250 (1984); NEV. REV. STAT. §§ 533.325, .345 (1986); N.M. STAT. ANN. § 72-5-24 (1985); N.D. CENT. CODE § 61-04-15.1 (1985); OKLA. STAT. ANN. tit. 82, §§ 105.4, 105.5 (West. Supp. 1989); OR. REV. STAT. § 540.510 (1987); S.D. CODIFIED LAWS § 46-5-31 (1987); UTAH CODE ANN. § 73-3-3 (Supp. 1988); WASH. REV. CODE ANN. §§ 90.03.380, .390 (Supp. 1987); WYO. STAT. ANN. §§ 41-4-404, -405 (1987); *Ackerman v. City of Walsenburg*, 467 P.2d 267 (Colo. 1970); *Zezi v. Lightfoot*, 68 P.2d 50 (Idaho 1937); *Thompson v. Harvey*, 519 P.2d 963 (Mont. 1974); *City of Roswell v. Reynolds*, 522 P.2d 796 (N.M. 1974); *Vandehey v. Wheeler*, 507 P.2d 831 (Or. Ct. App. 1973). Until 1965, Wyoming law did not provide for changes in the point of diversion. *White v. Wheatland Irrigation Dist.*, 413 P.2d 252 (Wyo. 1966); see also 1965 Wyo. Sess. Laws 374 (current version at WYO. STAT. ANN. § 41-3-104 (Supp. 1988)); Frank J. Trelease & Dallas W. Lee, *Priority and Progress—Case Studies in the Transfer of Water Rights*, 1 LAND & WATER L. REV. 1 (1966).

²³ E.g., UTAH CODE ANN. § 73-3-3 (Supp. 1988).

²⁴ See IDAHO CODE ANN. § 42-222 (Supp. 1988); *W. S. Ranch Co. v. Kaiser Steel Corp.*, 439 P.2d 714 (N.M. 1968); *Tanner v. Humphreys*, 48 P.2d 484 (Utah 1935).

made their appropriations.²⁵ This right to static stream conditions entitles them to the continued receipt of the historic return flows at their respective points of diversion, at the same time and without a reduction of quantity or quality.²⁶ Traditionally, any excessive disruption to the established return flow patterns by an upstream water user is not tolerated if these fluctuations unreasonably interfere with other vested rights. The law requires this result, and the rule has been strictly enforced.²⁷ The necessity of protecting vested rights against unreasonable interference is a deterrent to the reallocation of water to new uses. The difficulty exists because one farmer's waste is another farmer's return flow rights on which he depends to satisfy his vested water right. If the upstream user lines his canal or applies irrigation water more efficiently in an effort to reduce waste, the downstream water user may receive less water than he or she had historically and may be entitled to seek relief for interference with vested rights. The question for the future is whether return flows must be protected against any reduction—even at the expense of promoting conservation, greater efficiency, and reallocation of the conserved water to other valuable uses.

V. SAVED OR SALVAGED WATER

A water right cannot be enlarged by virtue of a change of use. The enlargement or increased consumption of water may cause interference with the rights of downstream appropriators. Thus, an appropriator who changes his or her point of diversion from one tributary to another cannot withdraw more water from the new point of diversion than would have been available to them at their historic point of diversion.²⁸ Similarly, an appropriator generally cannot use the water he or she saves through employing more efficient means of application to irrigate additional land,²⁹ as this increases depletion and decreases return flows to the detriment of those downstream. Since water rights are limited to that quantity beneficially used or actually needed for the purposes of the original appropriation, such an expansion is prohibited. Water lost through seepage or evaporation in open irrigation ditches and canals can be saved through a variety of conservation measures. Cement lining or piping an open ditch is expensive. Because the law is unsettled as to who actually owns the water salvaged through conservation efforts, the economic return is rarely worth the investment.³⁰ The Utah Supreme Court

²⁵ See *Orr v. Arapahoe Water & Sanitation Dist.*, 753 P.2d 1217 (Colo. 1988); *Piute Reservoir & Irrigation Co. v. W. Panguitch Irrigation & Reservoir Co.*, 367 P.2d 855 (Utah 1962); *E. Bench Irrigation Co. v. Deseret Irrigation Co.*, 271 P.2d 449 (Utah 1954).

²⁶ *E. Bench Irrigation Co. v. Utah*, 300 P.2d 603 (Utah 1956).

²⁷ See *United States v. Dist. Court*, 242 P.2d 774 (Utah 1952).

²⁸ See *Rocky Ford Irrigation Co. v. Kents Lake Reservoir Co.*, 135 P.2d 108 (1943).

²⁹ See *Salt River Valley Water Users Ass'n v. Kovacovich*, 411 P.2d 201 (Ariz. Ct. App. 1966).

³⁰ See *Reno v. Richards*, 178 P. 81 (Idaho 1918); *Howcroft v. Union & Jordan Irrigation Co.*, 71 P. 487 (Utah 1903).

held in *Brian v. Fremont Irrigation Co.*³¹ that the appropriator who no longer needed carrier water due to improvements to his conveyance facilities had a duty to return this water to the water system for use by others, giving the appropriator no return for his investment in conservation. If the appropriator cannot benefit from his investment in conservation, no incentive exists for them to try. This approach must also change.

The Utah Supreme Court took steps in that direction in the case of *Estate of Steed v. New Escalante Irrigation Co.*³² This case involved the water in a natural drainage known as Alvey Wash, which is situated south of the town of Escalante, Utah, just outside the Grandstaircase-Escalante National Monument. The wash is a horseshoe-shaped natural drainage that drains about a 102 square mile watershed area. New Escalante Irrigation Company diverts water from the Escalante River, and for over one hundred years its shareholders applied this water by flood irrigation to their lands. The irrigated lands were located south of the town within the inside bend of the horseshoe formed by Alvey Wash. The Escalante River flows generally in a west to east direction and is tributary to the Colorado River at Lake Powell. Water from the company's irrigated lands seeped into the Alvey Wash, and Steed appropriated it along with the natural waters of the wash, which Steed also used for irrigation. Alvey Wash empties into the Escalante River about twenty-five miles downstream from the irrigated lands of the Steeds and of the irrigation company. The Escalante River does not naturally contribute any water to the flows of Alvey Wash.

In 1982, the irrigation company improved its reservoir, converted to a pressurized sprinkler system, and closed its old open earthen canals. By applying its water more efficiently, the company significantly reduced the seepage water reaching Alvey Wash. Steed filed suit seeking an injunction to force the irrigation company to continue allowing the same amount of runoff and seepage to hit the wash, where it would be available for his use under his appropriation. The trial court held that since there was no natural contribution from the Escalante River to Alvey Wash, Steed had acquired no vested right against the irrigation company—either by appropriation, adverse use, or otherwise—under which he could compel the irrigation company to continue wasting water for his benefit. Steed appealed.

The Supreme Court upheld a long line of Utah cases supporting the general rule that appropriators may recapture and reuse their waste water before it escapes their control and make a beneficial use of it, even if the subsequent use deprives a downstream user who has used that water in the past. A re-appropriator of wastewater cannot obtain a vested right against the original appropriator to force the continued wasting of the water for their benefit.

The court noted two well-recognized exceptions to this rule: (a) The rule did not apply when the runoff or waste water returned to the stream from which it was diverted; and (b) it did not apply to ground water that had rejoined the natural

³¹ See 186 P.2d 588 (Utah 1947).

³² See 846 P.2d 1223 (Utah 1992).

underground water table.³³ In both instances, the water returning is considered return flow water that has lost its identity as the appropriator's property and becomes part of the public water supply that is available for appropriation and use by others. Neither exception applied in this case.

Steed argued for a change in the rule. He agreed that conservation was a valuable pursuit, but that it was unfair for him to suffer a loss of water at the hands of an upstream irrigator who made a more efficient use of his water. He thought the court should impose an equitable resolution and force the irrigation company to share the water saved by its installation of its sprinkler system. The court denied Steed's request, even though it was a harsh result. "The law simply favors the first user."³⁴ In holding for the irrigation company the court made a bold policy statement:

Because Utah is an arid state, efficient and beneficial use of water should be encouraged. In furtherance of that objective, an appropriator should be encouraged to apply water in the most efficient manner. Any technique which conserves water consumption and reduces waste is commendable. It is unfortunate that Steed lost some water which previously found its way to augment the water in Alvey Wash. However, absent a natural connection between the water in the wash and the water New Escalante diverted from the Escalante River, Steed acquired no vested right to compel New Escalante to allow the water applied to irrigation to run off their shareholders' lands.

Significant amounts of irrigation water can be lost through evaporation, seepage, or other means. We must encourage greater efficiency through water-saving techniques. As former Chief Justice Crockett so appropriately noted in *Wayman v. Murray City Corp.* some 23 years ago: "Because of the vital importance of water . . . both our statutory and decisional law have been fashioned in recognition of the desirability and of the necessity of insuring the highest possible development and of the most continuous beneficial use of all available water with as little waste as possible." 23 Utah 2d 97, 100, 458 P.2d 861, 863 (1969) (citations omitted).³⁵

This decision could have been a major victory for conservation and efficiency, as it appeared to enable the upstream water user to gain the benefit of its investment in efficiency. I represented the irrigation company in this litigation and have a different view. I saw the case as nothing more than upholding the arcane distinction between waste water and return flows of the past. Because of the geography of the area, the water from the Escalante River was considered

³³ *Id.* at 1226.

³⁴ *Id.* at 1228.

³⁵ *Id.* at 1229.

artificial water in Alvey Wash; therefore, downstream water users on the Wash could not gain vested rights as against the original appropriator in this waste or artificial water. Had Steed's farm been located below the confluence of Alvey Wash and the Escalante River, the water seeping from the upper lands of the company's shareholders would have become return flow to the river of origin. In that instance, Steed most likely would have been able to claim vested rights in the return flows and, under traditional rules of non-interference, probably enjoined the company and forced it to make water available to him. Therefore, Steed lost because of a fluke of geography rather than the court's adoption of a conservation ethic.

This case truly would have been a milestone for future conservation decisions had it been a return flow case and the court ignored Steed's rights and held that the right to return flow as a matter of public policy is not paramount to conservation. Instead, we must be content with the policy statement of the court that it will foster conservation efforts. It remains to be seen whether this is just rhetoric or if the court will actually protect conservation over return flows.

There is ample legal authority in the prior appropriation doctrine to reach that result. That authority stems from the fact that all appropriated water rights are established subject to the public interest. The courts and state legislatures are best suited to discern what uses are in the public interest and favor those uses that conserve water and use it most efficiently. A water user should have the right to retain water that he or she saved through personal efforts and investment, so long as it is done without unreasonably interfering with the vested rights of others or causing other legal injury. What is "unreasonable" probably requires judicial interpretation on a case-by-case basis as different situations are presented and analyzed.

The vested right to the continued receipt of return flows does not require an inefficient irrigator to continue inefficient irrigation practices. Professor Dan Tarlock suggest that the exercise of a water right is embodied in all its aspects with the requirement of beneficial use, and that beneficial use mandates that the water right be exercised in a reasonably efficient way to prevent unnecessary waste.³⁶ No downstream appropriator should be able to compel another to continue to waste water for the benefit of another.³⁷ The upper water user may quit

³⁶ See generally A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES 5-73 (1988 & Supp. 1989-1998); *Schodde v. Twin Falls Land & Water Co.*, 224 U.S. 107 (1912) (denying appropriator's claim to the full natural flow of the river to power a water wheel, which would have prevented construction of a dam downstream by junior appropriators); *Empire Water & Power Co. v. Cascade Town Co.*, 205 F. 123 (8th Cir. 1913) (rejecting use of an entire waterfall to support pleasure ground); *A-B Cattle Co. v. United States*, 196 Colo. 539, 589 P.2d 57 (1979) (rejecting claim to compensation for loss of silt-laden water used to seal leaky canal because it would prevent the construction of reservoirs).

³⁷ *Lasson v. Seeley*, 238 P.2d 418, 422-23 (Utah 1951); *Bower v. Big Horn Canal Ass'n*, 307 P.2d 593 (Wyo. 1957). The corollary is also true, that no downstream water user should be able to force an upstream appropriator who is using the usual and ordinary

irrigating altogether, or she may modify her irrigation practices to use the water more efficiently. So long as the initial appropriation is not expanded (bringing new acreage into production) through this process, no downstream appropriator should have any legal grounds for complaint if less return flow water is available at his point of diversion resulting from the elimination of waste upstream. The solution, if not an appropriator's obligation, is for all appropriators to maintain their own efficient means of effectuating their water right.³⁸ If that means they too must become efficient and the gain in efficiency is within their economic reach, why should they not be required to move in that direction? Such a rule could not be implemented in a ridged fashion, as there are stream systems such as the Sevier River in Utah where the water rights of downstream users are almost entirely comprised of return flows from upstream use. Greater efficiency upstream will deprive the lower users of the majority of their water supply, and no greater investment in efficiency will enable the lower water users to maintain viable operations. Therefore, the rule would need to be applied on a case by case basis to determine the levels of reasonable efficiency, and return flows would need to be maintained to avoid serious impairment of water rights.

Unless the law allows the party who saves water through conservation measures to benefit from that effort and investment, they have little incentive to do so. Economic incentives can be created to encourage conservation. One such effort is under discussion in the Imperial Irrigation District of California because of a 1984 decision of the California State Water Resources Control Board.³⁹ The board concluded that the Imperial Valley irrigators were wasting water in violation of Article X, Section 2 of the California Constitution. The district was ordered to eliminate its high-seepage loss and excessive return flow to the Salton Sea. The Metropolitan Water Board of Los Angeles and San Diego provided the economic incentive to try. The irrigation district and the water board are working to salvage water previously lost to seepage and evaporation. The Water Board offered about two hundred million dollars in financing for the water conservation activities. The economic incentive to the Water Board was the acquisition of approximately ninety to one-hundred thousand acre feet of water annually for municipal and industrial use in San Diego area. That is enough water for one hundred thousand new homes. This water has previously been lost to everyone—at least in the United States. However, this “wasted” water has found its way to the Mexicali Valley of Baja, Mexico some one hundred miles to the south where it has fostered a productive agricultural economy. Approximately five hundred

means of diverting and using his or her water to employ more efficient diversion and conveyance systems to make more water available to them downstream. *United States v. Gila Valley Irrigation Dist.* 31 F.3d 1428 (9th Cir. 1994).

³⁸ *City of Colo. Springs v. Bender*, 366 P.2d 552 (Colo. 1961); *Baker v. Ore-Ida Foods, Inc.*, 513 P.2d 627 (Idaho 1973); *Woodsum v. Twp. of Pemberton*, 412 A.2d 1064 (N.J. Super. Ct. Law Div. 1980); *Wayman v. Murray City Corp.*, 458 P.2d 861 (Utah 1969).

³⁹ *Imperial Irrigation Dist. v. State Water Res. Control Bd.*, 231 Cal. Rptr. 283 (Ct. App. 1986); *Elmore v. Imperial Irrigation Dist.*, 205 Cal. Rptr. 433 (Ct. App. 1984).

thousand acres are under irrigation and the area is home to about 3.1 million people. The gain in efficiency for California will result in a devastating loss of the farmers of the Mexicali region.⁴⁰ The incentive to the irrigators is the elimination of potential liability for flood damages to land adjacent to the Salton Sea and the prospect of selling this salvaged water to metropolitan areas of southern California. Thus, a liability has the potential of becoming a salable, valuable asset.

The Imperial Valley is essentially at the tail end of the Colorado River system in the United States. There are few downstream appropriators in the United States who could assert a prior claim to this salvaged water. Mexico's share of the Colorado River is protected by treaty.⁴¹ California has also adopted a statute that rewards the conserver of water with title to the salvaged water.⁴² This insures the appropriator the right to sell and obtain a return on the dollars invested in conservation.

Thus, this project may succeed where others may fail. Even so, legal uncertainties over title and the right to use or sell the salvaged water have not yet been resolved. These legal uncertainties impede conservation efforts because the risks and expenses simply outweigh the gains to make conservation worth the effort.

The law should reward those who conserve by giving them clear title to the water they salvage through conservation. Title alone may not be sufficient incentive to promote conservation. If the priority of the salvaged water is the most junior on the stream, the existence of a valid title provides little comfort during times of shortage.

In some states, state engineers could add additional incentives for conservation by defining the salvage practice to be in the "public interest." For example, in Utah, an application to appropriate salvaged water could be moved ahead of a prior pending application which the state engineer considers to be less in the public interest. A priority earlier than other applications waiting in line could afford a degree of protection for this conserved and appropriated water right, thus encouraging its development.

⁴⁰ Matt Jenkins, *The Efficiency Paradox*, HIGH COUNTRY NEWS, Feb. 5, 2007, available at http://www.hcn.org/servlets/hcn.Article?article_id=16808.

⁴¹ Treaty Between the United States of America and Mexico Respecting Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, U.S.-Mex., Feb. 3, 1944, 59 Stat. 1219.

⁴² CAL. WATER CODE §§ 1011, 1012, 1013 (1987); CAL. WATER CODE § 1010 (1978); *Pomona Land & Water Co. v. San Antonio Water Co.*, 93 P. 881 (Cal. 1908). See HAROLD E. ROGERS & ALAN H. NICHOLS, *WATER FOR CALIFORNIA* 375 (1967). See also OR. REV. STAT. § 537.470 (splitting the savings from an approved conservation plan between the waver and the state, with the state being allowed to allocate 25% of the saved water to instream flows).

VI. AREA OF ORIGIN CONCERNS—PUBLIC INTEREST

Because most water in use in the West is for irrigated agriculture, the purchasing and transferring of water rights from current users for use in often distant locations has the potential to cause harm to the area of origin beyond simply losing the water supply. The loss of productive farm ground has a ripple effect throughout the local economy, resulting in a general reduction in farm-related jobs. With fewer farmers active in an area, support industries tend to drop off as well and the economic effect can be profound on a small community. Further, if the water is stripped from the land and moved to another location, the area of origin may lose future economic opportunities for economic growth and development in other industries because the water that would have made it possible has been taken from them.

Most of the statutory schemes in place in the West have a public interest component to them. It is expressed in different ways. For example, Utah defines it as an application that will interfere with a more beneficial use of the water for other purposes or one that will prove detrimental to the public welfare or the natural stream environment.⁴³ Idaho's statute talks about the local public interest.⁴⁴ Wyoming authorizes its state engineer to deny an application that threatens to prove detrimental to the public interest.⁴⁵ These determinations are left to the state engineers, who are not necessarily the best judges of what is or is not in the public interest. However, someone must make the initial decision. State engineer decisions are subject to judicial review so that an appropriator whose application is denied on public interest grounds may seek redress if the state engineer has been too zealous in asserting his or her authority.

The extent of the public interest power of a state engineer is largely untested. If used properly, it could be a powerful tool to assist in encouraging conservation and the reallocation of water to new uses. For example, state engineers and their counterparts might use their public interest powers to require appropriators to abandon their wasteful and inefficient diversion and application practices as a condition to approval of a change application or a new application to appropriate. California has given its Water Resources Control Board authority to impose conservation measures designed to protect the public's interest in the state's water on existing vested rights.⁴⁶ Other states have vested their state engineers with

⁴³ UTAH CODE ANN. § 73-3-8 (Supp. 1988).

⁴⁴ IDAHO CODE ANN. § 42-203A(5)(e) (where the local public interest is defined as the affairs of the people in the area directly affected by the proposed use); *Shokal v. Dunn*, 707 P.2d 441 (Idaho 1985).

⁴⁵ WYO. STAT. ANN. § 41-203 (1977).

⁴⁶ *See United States v. State Water Res. Control Bd.*, 227 Cal. Rptr. 161 (Cal. Ct. App. 1986).

broad regulatory powers to protect their groundwater supplies from over-drafting.⁴⁷

The public interest standard has been asserted only sparingly in the past. It is not well defined either in statutes or in the cases that have employed it to defeat or promote a particular use or project over another. One of the early public interest decisions was decided by the Utah Supreme Court in 1943. In *Tanner v. Bacon*,⁴⁸ the court approved a junior multipurpose application over a senior single-purpose application in the same stream. While the court did not clearly articulate that the public interest should be controlling, it did hold that where a large multipurpose project was ready for construction, the project should be given preference over the other more speculative, competing power projects.

The storage project would have provided municipal water for numerous cities as well as irrigation water for thousands of acres of new farmland. It also had incidental public benefits, such as flood control, power generation, and recreation. The private power project would have taken the river flow out and above and returned it to the river below the dam site. Thus, the two projects could not co-exist. The court agreed that the multipurpose project should be approved with a priority ahead of the prior and competing power application. Other public interest decisions have reached similar results.⁴⁹

The public interest statutes generally lack specific guidelines for application. In the absence of express legislative policies, courts and administrative agencies have been reluctant to stray too far from traditional views regarding water appropriation, priorities, and development.

Individual appropriators could further this process by agreeing to the sequential use of the same water supply. The state engineer could approve the application in the public interest, knowing that the senior right that might have been impaired by the new appropriation is no longer an obstacle and need not be protected against interference. This arrangement could last indefinitely or for a period of years equal to the useful life of the favored use or project. Upon the end of the project's useful life, the deferred use could commence.

This process would allow a desired project or use to go forward with reduced fear that its water rights would be stripped from it through the assertion of priority by some earlier priority right. It also allows two water users to use the same water right, thereby reducing pressure to develop additional water supplies. The remaining undeveloped water could be left in the stream for in-stream uses or appropriated to some other beneficial use. The parties could negotiate the issue of

⁴⁷ ARIZ. REV. STAT. ANN. §§ 45-401-45-637 (West Supp. 1988); OR. REV. STAT. §§ 537.010, 537.515 to 537.745, 537.620 (1988); WYO. STAT. ANN. §§ 41-126, 41-127 to 41-131 (1977).

⁴⁸ See 136 P.2d 957 (Utah 1943).

⁴⁹ See *Johnson Rancho County Water Dist. v. State Water Rights Bd.* 45 Cal. Rptr. 589 (Dist. Ct. App. 1965); *E. Bay Mun. Util. Dist. v. Dep't of Pub. Works*, 35 P.2d 1027 (Cal. 1934); *Shokal v. Dunn*, 707 P.2d 441 (Idaho 1985); *Young & Norton v. Hinderlider*, 110 P. 1045 (N.M. 1910); *City of San Antonio v. Tex. Water Comm'n*, 407 S.W. 2d 752 (Tex. 1966); *Big Horn Power Co. v. State*, 148 P. 1110 (Wyo. 1915).

what constitutes adequate consideration for the deferral of the senior appropriator's use of water. If the junior user is willing to pay the senior user more for not using the water than the senior would gain by using it, chances are greater that the water will remain unused by the senior.

VII. INTERSTATE COMPACTS

The primary purpose of interstate compacts is to apportion equitably the waters of an interstate stream among the several states through which it flows. Additionally, compacts help facilitate planning and promote the settlement of present and future disputes among the Basin states. Interstate compacts may also help establish preferences between different beneficial uses on a system-wide basis and promote interstate comity. And some compacts create real or perceived barriers to interstate marketing of the interstate resource.

Equitable apportionment is accomplished in one of three ways.⁵⁰ The most common approach is through an interstate compact, a negotiated contractual apportionment ratified by the participating states' legislatures and by Congress. Equitable apportionment can also be achieved by judicial decree, although this is probably the least satisfactory method since the courts often lack the necessary hydrological and other expertise to resolve many of the issues.⁵¹ The final method of apportionment is by congressional action. The constitutional basis for such congressional allocation is questionable.⁵² Nevertheless, the Supreme Court in *Arizona v. California* held that Congress not only had but also exercised such authority.⁵³

Apportionment is primarily a quantification of the extent of each state's right to develop the water within an interstate river system, and to protect a slower developing state's ability to develop its allocated share against the demands of more rapidly developing state or states. This development right is always subordinate to the federal power to regulate navigation and commerce upon interstate streams.⁵⁴ Interstate compacts may place restraints on the place of water use and nearly always allocate the water which each state may use from the

⁵⁰See generally A SUMMARY-DIGEST OF STATE WATER LAWS, *supra* note 8.

⁵¹See generally *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92 (1938); *Arizona v. California* 298 U.S. 558 (1936); *Wyoming v. Colorado*, 298 U.S. 573 (1936); *Arizona v. California*, 292 U.S. 341 (1934); *Arizona v. California*, 283 U.S. 423 (1931); *Kansas v. Colorado*, 206 U.S. 46 (1907); Edward W. Clyde, *The Colorado River Decision—1963*, 8 UTAH L. REV. 299 (1963).

⁵²A SUMMARY-DIGEST OF STATE WATER LAWS, *supra* note 8.

⁵³*Arizona v. California*, 373 U.S. 546 (1963). See generally Clyde, *supra* note 51; Charles E. Corker, *Can a State Embargo the Export of Water by Transbasin Diversions?*, 12 IDAHO L. REV. 135 (1976).

⁵⁴A SUMMARY-DIGEST OF STATE WATER LAWS, *supra* note 8. See generally Clyde, *Legal and Institutional Barriers*, *supra* note 5 at 251–53. See also Upper Colorado River Basin Act of 1949, ch. 48, 63 Stat. 31 (1949); Yellowstone River Compact Act of 1949, ch. 166, 63 Stat. 152 (1949).

interstate source. Under the Colorado River Compact,⁵⁵ water from the Colorado River system was allocated between the Upper and Lower Basins. The Upper Colorado River Compact then apportioned the water allocated to the Upper Basin among the states of the Upper Basin.⁵⁶ The Supreme Court held in 1963 that Congress apportioned the water among the Lower Basin states.⁵⁷ However, that is all the compacts accomplished. Each state may then allocated its apportioned share pursuant to its own laws and regulations, and because all seven basin states apply the prior appropriation doctrine, priorities are enforceable across state lines.⁵⁸ Neither compact expressly prohibits the use of water allocated to one state by another. The Upper Basin Compact also contemplated the development of water in one state for use in another and provides a method for accounting or charging the water to the state of use, regardless of whether it is diverted, stored or otherwise developed in another state.

One example of how this would work might be a plan by the State of Colorado to construct a dam and storage reservoir on the White River in Utah for an end use in Colorado for oil shale development. The water so used would be stored and diverted in Utah but charged against Colorado's allocated share of the Colorado River system under the terms of the compact. The method of accounting for water use and development works well in this anticipated situation. The compact, however, does not address whether Utah could contract for the use of its undeveloped Colorado River water by an end user in Colorado. Since such an agreement is not expressly prohibited, Utah could arguably contract for use of some if its water for the life of a project in Colorado. At the end of the project life, the water would revert to Utah. Logically, the water would be charged against Utah's allocation in this instance, rather than in the state of use.

The Colorado River Compact is silent on the interstate sharing of resources. However, its silence has not impeded the banking of currently unused water allocated to Arizona in a ground water storage and recovery facilities for the later use by Southern Nevada Water Authority, a joint public agency in the state of Nevada. The project involved three separate agreements⁵⁹ and new federal regulations⁶⁰ under which the Secretary will release unused allocations of water and charge the stored water as if it had been consumptively used in Arizona. The stored water may be later withdrawn by Nevada and released to other users of Colorado River Water in Arizona, in exchange for which Nevada diverts water from Lake Mead for use in Las Vegas and the surrounding communities.

⁵⁵Act of Aug. 19, 1921, ch. 72, 42 Stat. 171 (1921).

⁵⁶Upper Colorado River Basin Act of 1949, Pub. L. No. 81-37, 63 Stat. 31 (1949).

⁵⁷See *Arizona v. California*, 298 U.S. 558 (1936).

⁵⁸See *Wyoming v. Colorado*, 259 U.S. 419 (1922).

⁵⁹ STORAGE AND INTERSTATE RELEASE AGREEMENT, Dep't of the Interior Contract No. 02-XX-30-W0406 (Dec. 18, 2002); AGREEMENT FOR DEVELOPMENT OF INTENTIONALLY CREATED UNUSED APPORTIONMENT (Dec. 18, 2002); AGREEMENT FOR INTERSTATE WATER BANKING (July 3, 2001), Contact the Southern Nevada Water Authority at <http://www.snwa.com/> for further information or copies of these agreements.

⁶⁰ 43 C.F.R. 414.2(1).

The banking arrangement will provide Nevada up to two-hundred thousand acre-feet of water per year for a total banked amount of 1.2 million acre-feet over the life of the project, for which Nevada is paying Arizona \$100 million dollars in 2005, and ten additional installments of \$23 million dollars each beginning in 2009. The Agreements “expire on June 1, 2050, or until termination of the Agreement for Interstate Water Bank, which ever is sooner.”⁶¹ The purpose is to provide Nevada an interim supply of water while it develops other non-Colorado River Basin water resources. The United States is involved because federally-owned Central Arizona Project Facilities are used to divert and carry the water to the ground water storage area, and because as a result of the allocation of water between Arizona and Nevada—accomplished by the Boulder Canyon Project Act⁶² and confirmed by the United States Supreme Court in *Arizona v. California*⁶³—the Secretary is the water master of the Lower Basin.

This interstate banking agreement appears to be working fine, and the Compact has not been an impediment to this sharing arrangement. However, this arrangement does not involve an interbasin transfer; only a temporary interstate sharing arrangement between states of the Lower Basin. The real test may be when Utah or some other Upper Basin State contracts for use of some of its undeveloped Colorado River water in Nevada or California. Utah has developed the easily developable Colorado River. What is left is in the high mountain tributaries, and constructing dams to capture this water would encroach into wilderness areas, adversely impacting endangered fish in the Colorado. For these reasons, it is unlikely that Utah will ever fully use its share of the Colorado River. Additionally, much of Utah’s undeveloped water belongs to the Ute Indians under their reserved water rights; and the tribe, with its small population and arid lands, has little use for the water. However, the tribe and its members could benefit from a revenue stream generated through the long-term supply of its water to a Lower Basin state. The Arizona–Nevada water banking arrangement demonstrates that the marketplace can work despite the “Law of the River.”

Some compacts, however, do contain express prohibitions on exportation of water out of the basin. Enforcement of the compact provisions obstructs the free flow of interstate commerce by prohibiting free market reallocation of the water interstate. Yet, by ratifying the compact, Congress has not surrendered any federal interests in the water. Congress, as a matter of constitutional law, cannot delegate away its supreme authority to regulate navigation and commerce.⁶⁴ It has been held that by ratifying a compact, Congress essentially turns the Compact into a federal law and “therefore, [it] cannot, by definition, be a state law impermissibly

⁶¹ STORAGE AND INTERSTATE RELEASE AGREEMENT, art. I, § 1.2.

⁶² Boulder Canyon Project Act, Pub. L. No. 642, 45 Stat. 1057 (1928).

⁶³ 376 U.S. 340 (1964).

⁶⁴ *Cooley v. Bd. of Wardens*, 53 U.S. 299 (1851); Frank J. Trelease, *Federal-State Problems in Packaging Water Rights*, ROCKY MTN. MIN. L. FOUND., Mar. 1978 9-1 (1978).

interfering with commerce but is instead a federal law, immune from [Commerce Clause] attack."⁶⁵

If parties conclude the compact provisions impede the interstate sharing of water, the compacts can be amended. They are, after all, just agreements; although they take on the force of federal law because of Congressional ratification. Amending a compact would require the consent of all parties and Congress, but there is no reason to believe an amendment could not be achieved if the parties were of a mind to do so. It is unlikely that the Colorado River Compact or the Upper Colorado River Compact will be amended, as growth in all of the Basin states is overwhelming supplies, and no state is likely to give any water away through some new allocation formula. Even so, agreements for sharing the resource in exchange for payments that would enable further development of non-Colorado River water and other economic development make sense, and the Compacts do not appear to prohibit the States from striking such agreements.

VIII. PUBLIC INTEREST IMPOSED UNDER VARIOUS FEDERAL LAWS AND REGULATIONS

The federal government acquiesced in the settlement of its western lands and the appropriation of its water under state law. However, these state-created water rights remained subject to the assertion of dominant federal interests. These federal interests have the potential to curtail and even displace state-created-appropriated rights. The disruption may result from the assertion of federal reserved rights, from its sovereign powers to regulate commerce and navigation, or through the imposition of federal regulatory controls. The United States Supreme Court rocked the West by holding that water and water rights were commodities capable of being bought and sold in the marketplace;⁶⁶ the Court further held that state-created water rights, as commodities, were subject to federal regulatory control in interstate commerce. The *Sporhase*⁶⁷ decision alerted those wishing to buy and sell water rights of water's inherent marketability and that state-created water rights remain subordinate to dominant national interests.

There are three major federal regulatory programs that give the federal government authority to disrupt, if not displace, vested state-created water rights: Section 404 of the Clean Water Act, The Federal Power Act, and the Endangered Species Act. Professor Tarlock suggests that these regulatory programs have in effect created a new class of federal water rights that differ from other Federal Reserve rights or state-created rights.⁶⁸ The principal difference is that they lack any definitive date of priority, which makes their integration into a priority-based state system of water rights administration almost impossible. Further, there is no

⁶⁵ *Intake Water Co. v. Yellowstone River Compact Comm'n*, 769 F.2d 568, 570 (9th Cir. 1985).

⁶⁶ *Sporhase v. Nebraska*, 458 U.S. 941, 949 (1982).

⁶⁷ *Id.* at 947 n. 7.

⁶⁸ See TARLOCK,, *supra* note 36, at 8-27.

requirement that these regulatory rights ever be beneficially used, and they are not subject to forfeiture.⁶⁹

While these regulatory rights have the potential to “take” state created rights, so far, that has not proven to be the case because all state-created water rights are appropriated subject to the public interest.⁷⁰ Therefore, water rights are subject to adjustment to meet the changing demands caused by competing interests for our water resources. Generally, vested rights should not be curtailed but merely reduced to protect other public interest values in the water resources. Reductions of use, as distinguished from outright curtailments, may not constitute a taking.⁷¹

IX. CONCLUSION

Water rights acquired by appropriation are inherently marketable, as they are interests in real property that may be sold with the land as an appurtenance or severed and sold separately. That has always been the case. However, the necessity to fully use a water right or risk forfeiture, the necessity to protect other vested rights from injury in any transfer process, and the disincentives to conservation that exist within the doctrine create legal barriers to transfer in the marketplace. Further, marketplace reallocation is by its very nature exclusionary, as there are many potential stakeholders who simply lack the financial resources to compete for water in the marketplace. Environmental, aesthetic, and other values and interests in water resources should not be precluded from the reallocation process. In the absence of state law reform, these interests are being asserted through federal regulatory controls that operate outside the appropriation doctrine and perhaps insulate these public interest values and uses from the marketplace, but they do so at the risk of eroding the very security an appropriated water right afforded; that of priority, protection against unreasonable interference, and the protection of quality as well as quantity.

Uncertainties in the law need to be resolved in favor of creating incentives to conserve and better use our existing appropriated water resources. When this occurs, water rights will more freely move in the marketplace to other uses. If the appropriators do not react to marketplace incentives, state engineers should use their public interest powers to provide additional incentives to investors and other water users to undertake conservation measures as an alternative to developing additional water supplies.

⁶⁹ *Id.*

⁷⁰ *See Sporhase v. Nebraska*, 458 U.S. 941 (1982); *Hughes v. Oklahoma*, 441 U.S. 322 (1979); Clyde, *Legal and Institutional Barriers*, *supra* note 5, at 243.

⁷¹ *United States v. State Water Res. Control Bd.*, 182 Cal. App. 3d 82, (Cal. Ct. App. 1986); *Nat’l Audubon Soc’y v. Superior Court*, 658 P.2d 709 (Cal. 1983), *cert. denied*, L. A. Dep’t of Water & Power v. *Nat’l Audubon Soc’y*, 464 U.S. 977 (1983); *See TARLOCK*, *supra* note 36, at 9–37 (“All water rights are subject to adjustment to meet the changing demands of competing users. In most cases regulatory water rights will not curtail an existing use but will merely reduce the margin of safety built into the right. These reductions are not *per se* taking.”).

We cannot lose sight of the fact that reallocation has a cost. Society must determine who should bear or who can best bear the cost of reallocation. If reallocation is forced through the application of the Public Trust Doctrine, federal regulatory controls, or overly-aggressive use of the state engineer's public interest powers, the costs of reallocation will likely be unfairly heaped on the agricultural water user. That user will be told that the property right he or she once had is reduced or gone because the courts have redefined the rules of the game. Society should be willing to pay the costs of retiring lands from irrigation or investing in greater irrigation efficiencies to make water available for both irrigation and environmental and aesthetic uses. It truly is unfair simply to take water away from those who have established vested rights through their considerable investment in their lands and irrigation equipment based on the assumed security of those vested rights. It is also necessary to maintain farms in this country not only to feed U.S. citizens but also to help feed a growing world population. Converting all our farms into condominiums is not in the public interest; but without creating some economic incentives for the farmers to keep their lands in production, they have little reason to not cash out and reap the benefits of land value appreciation in developing areas.

The prior appropriation doctrine is inherently flexible; it has adapted and will continue to adapt to the competing demands for water. While the system is far from perfect, the potential for constructive reform clearly exists; and in the face of the vested rights that exist in the West, it is not practical or really even possible to impose some entirely new system of water allocation.