EMERGING FORCES IN WESTERN WATER LAW

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for the
Natural Resources Law Center
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Boulder, Colorado

1986

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There was a time when the sum of western water law could be expressed in that oft-quoted phrase, "first in time, first in right." As picks and plows began penetrating the lands of the arid West, the new courts generally adopted the local custom recognizing that those miners and settlers who first utilized a limited water supply had a continuing right to its use. This concept of prior appropriation was straightforward to administer, and consistent with a young nation's desire to open the West to new settlement.

Much has changed in the century since the doctrine of prior appropriation was adopted in the western United States--changes which have severely complicated the administration of water rights. Ground water came to play an important role in agricultural and municipal water supplies. Vast tracts of federal land reserves were withdrawn from the public domain, carrying with them significant reserved water rights. Streams that once harbored thriving fisheries dried up as their waters were overappropriated. Water quality degradation occurred as a result of growing populations, industries, and other activities. And, as competition grew intense for limited supplies, the 19th-century ethic of resource exploitation gave way to a recognition of the need for conservation and wise use.

These and other trends of the past decades have overlayed, if not subsumed, the simplistic notion of "first in time, first in right." In 1986, we are at a point where many of these currents in western water law are breaking to the surface with

broad ramifications. Although priority of appropriation remains a basic tenet, a thorough grasp of modern water law requires knowledge of recent developments emanating from courtrooms, administrative offices, and legislatures.

This article briefly discusses many of the forces that are shaping the future of western water law. These range from how states are grappling with ground water regulation to how the Public Trust Doctrine is beginning to impact the use of surface streams. The article concludes with a summary of the potential impact that these developments may assert on the course of water management and use in the West.

1. MINING OF ANCIENT AQUIFERS

One of the most significant developments in recent decades regarding western water resources has been the increased utilization of ground water. Underground supplies have been the key to the opening of new farmlands in areas where overappropriated streams were unable to fulfill growing demands. Wells also have been used to meet existing demands during the latter part of the irrigation season when surface flows typically wane.

The boom in ground water use followed the advent of improved pumping technology, advanced drilling techniques, and cheap electricity in the post-World War II era. For instance, in the Ogallala aquifer extending from the Dakotas to Texas, ground water irrigation tripled between 1950 and 1980. Currently, more than 20 million acre-feet are pumped from the Ogallala annually to irrigate 15 million acres of farmland. Similar trends, in

which the agricultural economy became dependent on ground water, occurred in the Southwest, California, and many other western states. Currently, ground water accounts for approximately approximately one-third of western irrigation and for half of household use.

Much of the ground water supply comes from ancient aquifers which accumulated over the centuries and which receive very little recharge. As a result, these aquifers, such as the Ogallala, are being rapidly depleted by overpumping. This results in a drop of the water table which in turn increases pumping costs and requires the deepening of wells. In these days in which many farmers are operating on the economic margin, the additional costs associated with declining aquifers can push them over the brink.

Only recently have state officials begun seriously wrestling with the many questions associated with ground water mining. Should the concepts of first in time, first in right apply to this finite resource? Do overlying landowners have a special right to the water, or is it a supply available for appropriation by any potential user? And to what extent, if any, should the needs of future generations be considered in regulating and preserving this precious supply?

In most states, the answers to many of these types of questions have yet to be finalized. A few legislatures, however, have begun addressing the problem. Several of the states overlying the Ogallala aquifer currently have laws regulating

well spacing, pumping rates, and other features designed to minimize interference between competing users. Also, in parts of Colorado, pumping from ancient aquifers has been restricted to a rate designed to ensure at least a one hundred year life to the supply. In addition, that state's supreme court has recently ruled that these supplies are not subject to general appropriation, but instead are tied to overlying land ownership. Colorado v. Southwest Colo. Water Cons. Dist., 671 P.2d 1294 (Colo. 1983). Such regulations and rulings, however, leave many issues unresolved.

Arizona is the only western state comprehensively to address the long-term problem of ground water overdraft. It is estimated that Arizona's users annually pump 2.5 million acre-feet more ground water than is replenished; a trend whose continuation, according to Arizona Department of Water Resources, "would be disastrous to the state's expanding population and economy."

In 1980, the Arizona legislature passed the Groundwater Management Act in order to control the overdraft problem. Under the Act, the state's management goal is to balance aquifer depletions with recharge within 45 years. This goal is pursued through requiring existing users to implement conservation methods, prohibiting new acreage from being irrigated with ground water, developing sources of augmentation, requiring detailed monitoring and reporting by pumpers, and purchasing and retiring existing irrigation rights. In addition, ground water users are charged a fee (currently one dollar per acre-foot) in order to

generate funds to support the activities of the Arizona Department of Water Resources.

2. CONJUNCTIVE ADMINISTRATION OF SURFACE AND GROUND WATER USE

The mining of the ancient aquifers is an issue which increasingly will face states in the West. The concerns created by the recent boom in ground water use, however, extend beyond impacts on nonrenewable underground supplies. In many areas, pumping of ground water results in increased depletions to surface streams. As a consequence, senior surface rights are frequently unable to obtain their full water entitlement due to the pumping by junior wells.

State officials have begun addressing this issue, but with limited success. Mitigation of this problem is frustrated by the complex interface between surface and ground water hydrology. Pumping from a tributary well typically takes many days or even decades before it begins depleting a nearby surface stream. Likewise, the residual impact on the stream will continue for a long period after the pumping is terminated. Consequently, curtailing junior wells when senior irrigators call for water during a late-season shortage will usually not be effective in making the additional supply available. The effect of past ground water pumping typically continues to deplete the stream until well after the irrigation season has ended.

Various strategies have been attempted in order to protect senior surface rights from depletions caused by junior well

pumping. In one region, a state enacted rules for prospectively curtailing well pumping in anticipation of a late season call by senior surface users. Another strategy involved shutting down wells for a specified number of days each week, thereby allowing the aquifer to recover to a degree. Neither of these approaches, however, proved effectual in protecting surface users and in eliminating the conflicts resulting from this problem.

Colorado officials have recently enacted rules that flatly prohibit pumping from a junior well unless its depletions to the stream are offset in some manner. Such offset may be pursued through buying and retiring senior water rights, storing excess spring runoff and releasing it during times of shortage, importing water from another basin, or some other manner of augmentation.

Ground water users in the South Platte basin of northeastern Colorado agreed to the enforcement of this program and focused their efforts on identifying sources of augmentation water. In the southern part of the state, however, well owners fought implementation of the rules, taking their case to the Colorado Supreme Court. They argued that the state engineer, in drafting the rules, had erred in assuming that the prior appropriation doctrine mandated that senior surface rights be protected from junior well pumping.

In the landmark case of Alamosa-La Jara Water Users Association v. Gould, 674 P.2d 914 (Colo. 1983), the court stated that "the prior appropriation doctrine is not a legal barrier to

the concurrent consideration by the state engineer of the various methods of implementing the state policy of maximum utilization." It agreed with the well owners that the state engineer had improperly assumed that he had to curtail their diversions that interfered with senior surface rights. The court recognized that it would be inefficient in some regions to prevent the use of vast ground water supplies simply to keep a ribbon of water flowing on top for use by senior surface appropriators. In such instances, surface appropriation could be deemed an unreasonable means of diversion, and senior rights holders would have to drill wells in order to obtain their lawful supply.

The court in Alamosa-La Jara did not actually mandate this radical result wherein senior appropriators would have to drill wells as junior pumping dried up the streams. Rather, it remanded the rules back to the state engineer to consider this approach as well as other means for maximizing the utilization of both surface and ground water resources in the basin.

3. MAXIMUM UTILIZATION AND EFFICIENCY

As demonstrated by the preceding case, the concept of maximum utilization promises to become a strong force in the future of western water law. States and water users are increasingly aware of the many problems associated with inefficient use of senior water rights that were established under 19th-century practices. Although most overapplied irrigation water

eventually returns to a stream or aquifer for reuse, in many instances, a large portion of the excessive diversion is irretrievably lost. Also, when the return flows do reach the stream or aquifer, their quality is often degraded and in some cases they return after the irrigation season and the need for water is over. Additional problems created by inefficient diversions can include erosion of valuable topsoil, diminishment of instream flow values, and the creation of marshy and saline soil conditions when excessive return flows exceed the local drainage capacity.

The volumes of state supreme court decisions are replete with language preaching against the problems of wasted water and inefficient use. Historically, however, very little has been done to actually implement a shift from 19th-century practices to the modern need for efficiency and conservation. State officials are only beginning to openly talk of reform and assess strategies for approaching this controversial issue. In the Imperial Valley of California, however, talk has finally been translated into action that promises to carry a significant impact.

The Imperial Irrigation District annually diverts 2.5 million acre-feet (maf) of the Colorado River to support a variety of agriculture. Roughly one maf of this total is not used by the crops, and drains into the Salton Sea, a saline lake with no outlet. These massive return flows not only raise the level of the Salton Sea to the detriment of adjacent landowners, but they also represent a significant loss of usable water in

this region where supplies are scarce.

In 1984, the California Water Resources Control Board deemed that the practices of the Imperial Irrigation District contravened the constitutional prohibition against the waste of water. After finding that "regulation to prevent waste and unreasonable use of water is a clearly established element of California water law," the Board ordered that the District submit a plan to reduce the amount of water lost through leakage, spills, and other inefficient practices. Calif. Water Res. Control Board, Decision 1600, June 1984. Currently, the District is in the midst of identifying potential sources for financing the necessary improvements.

4. WATER MARKETING AND TRANSFERS

In the Imperial Valley, state administrative actions were applied to require the water to be utilized more efficiently. State regulation, however, is only one of the forces that can be used to reduce excessive diversions. As water resources become more valuable in the arid West, the market system also can be a potent force in promoting water use efficiency. For instance, new appropriators may be willing to finance the modernizing of a senior irrigation system in order to apply the salvaged water to their own needs. Efficiency can be promoted as well through simply the buying out and transfer of senior water rights to fulfill modern demands.

In the western states, various impediments constrain the

marketing and transfer of water rights. Most significant is the tenet that a senior water right cannot be changed or transferred to the detriment of other users on the stream. Thus, return flows which have historically been reused by junior appropriators cannot be marketed or transferred by the senior rights holder. Consequently, there is little economic incentive for the senior to modernize and reduce return flows.

Disincentives and uncertainties also exist around the ability of senior rights holders to market and transfer the consumptive component of their right. Some jurisdictions follow the appurtenancy rule and prohibit any use of a water right except on the land to which it was originally applied. Others allow transfer of the right to alternative use, but variously constrain the amount transferable. In many jurisdictions, the law regarding the transfer and marketing of water rights is unclear, thereby creating uncertainty which inhibits investors from pursuing the transaction. Additional impediments to the market system are created by the high transactional costs (i.e., attorney and engineering fees) that are typical of water rights changes.

States are looking at ways to facilitate the workings of the market system in order to promote water use efficiency. State legislators have introduced bills to allow the salvage and marketing of the component of a water rights that historically had been irretrievably lost. Means for easing impediments to water rights transfer are also being considered, including ways

of reducing the transactional costs to both buyers and sellers. As the value of water continues to rise throughout the western states, additional attention can be expected to be focused on the issue of the free marketing of all or part of senior water rights.

5. STATE INSTREAM FLOW PROTECTIONS

The free market system holds much promise for improving the efficiency of western water use. It also, however, harbors potential problems. Of particular concern is how public interest values can be adequately accounted for in an unconstrained water market. Many feel that state laws must be applied in order to protect public values in water, including the numerous benefits derived from free flowing rivers and streams.

Several western states have recognized the importance of instream flows to their citizens and economy, and have implemented programs for maintaining necessary flow levels. These programs involve different strategies which have met with varying degrees of success. Some simply empower the state water administrator to consider instream flow needs when issuing and conditioning water use permits. Others operate to remove designated streams from further appropriation in order to protect their freeflowing values. Another strategy involves delegating the power to a state agency to establish water rights for instream flows in important stretches of rivers and streams.

The recognition of the many intangible and economic values

of freeflowing waters has grown in recent years and can be expected to significantly impact the future of western water law. Additional states are looking at instream flow legislation, while those with existing programs are assessing means for more effective enforcement.

Enforcement of instream flow rights creates a very complex administration problem due to their unique elements (i.e., instream flow rights are typically year round rather than seasonal; they extend for long stretches instead of being diverted at a single point; they require the construction and monitoring of stream gages in order to prevent depletion by junior users). These attributes of instream flow rights can also make them particularly constraining to subsequent water development. As a result, many future controversies can be expected over the establishment and extent of instream flow protections.

6. THE PUBLIC TRUST DOCTRINE

Some western state legislatures may be tempted to ignore instream flow needs and thereby avoid the constraints they place on other water uses. Such an approach, however, may prove implausible due to the recent reach of the Public Trust Doctrine into inland waters.

The Public Trust Doctrine is an ancient concept arising in England and carried by common law into American jurisprudence. It reflects the historical importance of coastal navigation and fishing to the general populace, and prohibits the sovereign from

alienating these public rights in the coastal zone. Starting in the 1800s, American courts have used the Doctrine to limit the extent to which states may allow private development to impinge upon the public interest in tidelands.

In 1976, the North Dakota Supreme Court raised the idea that the public trust duty on state sovereigns extends as well to considering the public interest in inland waters. United Plainsmen v. North Dakota State Water Cons. Comm., 247 N.W.2d 457 (1976). This concept took root in California and bloomed in 1983, in National Audubon Society v. Superior Court of Alpine County, 658 P.2d 709 (Cal. 1983). In this case, the California Supreme Court assessed the values of Mono Lake that were being adversely impacted by diversions for the City of Los Angeles. It determined that the Doctrine bars water diversions "once it becomes clear that such diversions harm the interests protected by the public trust." The court then remanded the case for a determination of the extent to which Los Angeles' water rights may need to be curtailed in order to protect the public interest in the Mono Lake environment.

The potential impact of the Public Trust Doctrine over existing and future water use in the West remains to be determined. No other state supreme court has dealt directly with a Mono Lake type claim, although the Idaho Supreme Court recently acknowledged that the Doctrine applies to that state's waters as well. Kootenai Environmental Alliance v. Panhandle Yacht Club, 671 P.2d 1085 (Idaho 1983). Many parties, however, are

considering how the Public Trust Doctrine could be innovatively asserted to further their positions. As a result, the Doctrine promises to be a factor in the future course of western water law.

7. THE INFLUENCE OF FEDERAL STATUTES

The Public Trust Doctrine represents the potential for impacting western water users and diminishing the control of state government over the allocation of water. Such control can be diminished as well by various federal statutes. Although the United States long ago deferred to state control over water allocation, the secondary impact of certain federal programs may alter the pattern of water use in the West. Foremost among these programs is the protection of endangered species.

The impact of the Endangered Species Act has already been felt by various water users. In eastern Colorado, a reservoir project has been delayed due to its potential effect on whooping crane habitat in Nebraska. Although the applicant is entitled to a conditional water right for the project under state law, federal approval of the necessary permits may be withheld if further studies show that the effect of the storage project on the cranes cannot be adequately mitigated. Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985). Similarly, water development in the upper Colorado River basin may be constrained due to the potential impact of additional depletions on endangered fish species. Further west, the Act has caused the

Bureau of Reclamation to regulate a reservoir in favor of endangered fish to the detriment of municipal and industrial supplies. Carson-Truckee Water Conservancy District v. Clark, 741 F.2d 257 (9th Cir. 1984).

A main objection of headwater states to the Endangered Species Act is that it is reallocating water between the states in contravention of existing interstate compacts. For example, Colorado users have the legal right to develop additional waters of the South Platte River under its compact with Wyoming and Nebraska. The Endangered Species Act will undermine compact allocation if it prevents further reservoir development upriver of the whooping crane habitat.

A similar fear of headwater states is fueled by the federal salinity control program for the upper Colorado River basin. In order to protect downstream water users from salts carried from the upper Colorado, the federal government is assessing various control measures, including reducing diversions from the high quality headwaters. Upstream states are concerned that the impact of this policy may eventually result in their being unable to utilize their lawful entitlements under the Colorado River Compact of 1928.

Further federal impact on the future of western water allocation can be found in the national programs for water quality control. In fact, as both natural and human-generated sources of contamination are found in an increasing number of water sources, the role of water quality in western water law and

administration will undoubtably become more complex.

8. FEDERAL RESERVED WATER RIGHTS

The impact of federal environmental statutes on water allocation is only one way in which state water users will be impacted by the federal interest in water. In 1963, the Supreme Court established that the United States held dormant, but potentially significant, water rights in its lands reserved from the public domain such as national forests, military bases, recreational areas, national parks, etc. Arizona v. California, 373 U.S. 546 (1963). Subsequent cases have established that the amount of water thus reserved is the quantity necessary to fulfill the primary purpose of the land reservation. The priority of the reserved water right corresponds with the date that the land reservation was established.

Since many national forests and other federal reservations were established early in the history of the West, reserved water rights often have a senior priority relative to many state water users. Only recently have attempts been made in court to quantify the extent of these rights and thereby establish precisely who has what right to various water sources.

The quantification of federal reserved water rights will be a pervasive factor in western water adjudication for many years. Also, major issues regarding the lawful extent of reserved rights remain unresolved. For instance, the Supreme Court has yet to determine whether ground water supplies are reserved under the

doctrine. Another unresolved issue with significant repercussions is the current claim for instream flows in the national forests. The Forest Service asserts that large instream flows are needed to maintain viable stream channels, which in turn are necessary to fulfill a primary purpose of the national forests of "securing favorable conditions of water flow." In the watersheds of Wyoming and Colorado where the United States has asserted these instream flow claims, they amount to more than half the total average annual runoff from the basin.

Controversy also exists over the extent of instream flow rights in Wilderness Areas. After the United States failed to claim any such rights, the Sierra Club filed suit to compel the government to do so. A federal district court recently gave Sierra Club a favorable ruling, but the controversy is far from over. Sierra Club v. Block, 622 F. Supp. 842 (1985).

9. INDIAN WATER RIGHTS AND JURISDICTION

The reserved water rights of Indian tribes will also play a significant role in the future of western water law. Not only do these reserved rights typically have very senior priority dates (i.e. the date that each reservation was established), but their quantity also can be significant. In many western states, assertion of reserved Indian water rights holds the potential of dislocating non-Indian users who have relied upon local water supplies for decades.

Various strategies are being pursued by tribes and states in

order to assimilate powerful Indian rights into the western water allocation picture. In southern Arizona, the Ak Chin and Papago have agreed to waive their legal claims to reserved water rights in exchange for a guaranteed delivery of water to them through the Central Arizona Project. In addition, each tribe will receive several million dollars of federal funds as part of their settlements. Another example of a negotiated solution occurred in early 1985 between the tribes of the Fort Peck Indian Reservation and the state of Montana. The major provision of this agreement was that the tribes receive a diversion entitlement of over one million acre-feet annually from the Missouri River, and in turn, will allow non-Indian junior irrigators to continue diverting from the Milk River.

The vast quantity of reserved water rights is only one aspect of future Indian water controversies. Jurisdictional conflicts are also beginning to arise over the administration and management of water flowing through reservation lands. Many tribal governments are currently developing administration strategies to assert control over the management of reservation waters. For instance, the Navajo Nation in 1983 created the Division of Water Resources which now employs more than 200 people to manage, administer, and develop water resources on its reservation. It also required that water users, both Indian and non-Indian, apply to the tribe for water use permits.

Not surprisingly, some states have challenged tribal jurisdiction over non-Indian water use. (See Colville

Confederated Tribes v. Walton, 647 F.2d 42 (9th Cir. 1981); United States v. Anderson, 736 F.2d (9th Cir. 1984.) Cooperation as an alternative approach, however, is also beginning to grow between state and tribal governments. Water knows no political boundaries, and in order to effectively manage this mobile resource, intergovernmental cooperation is needed. The state of Washington and the Colville tribes recognized this fact in entering a water quality agreement in August, 1985. Under the agreement, representatives from each government will work together to standardize existing tribal and state water quality standards. After completing this process, a single water quality administrator (jointly appointed, but employed by the tribes) will have the authority to enforce all water quality regulations over both Indian and non-Indian activities on the reservation.

10. MEETING THE CHALLENGE

The complicated framework of western water law promises to grow more complex in the future. Dormant reserved water rights, the Public Trust Doctrine, and the several other factors summarized in this article each make effective water management difficult. In addition, the landmark decision in Sporhase v. Nebraska, 458 U.S. 941 (1982), complicates state control of interstate exports since water was deemed a commodity that falls under the limitations of the Commerce Clause.

States are responding to the challenge of effective water management in a variety of ways. Many are considering innovative

methods of asserting authority over the use and control of unappropriated waters. For instance, Montana recently enacted legislation providing that any proposed appropriation greater than 4,000 acre-feet per year had to be leased from the state. Under this leasing requirement, the state can assert broad control over the proposed diversion and maintain long-term control of the water resource.

The current New Mexico legislature is also considering means of maintaining authority over valuable water resources. A recent, state-sponsored report indicated that more than 150 million acre-feet of unappropriated, retrievable groundwater exists under New Mexico lands, representing a potential value in the billions of dollars. The report recommends that the state lay claim to this water supply and enter the regional water market.

As water becomes more scarce and valuable in the arid West, additional innovative ideas undoubted will be proposed. Innovation, however, often is characterized by controversy. The ways in which water users, states, tribes, and the federal government respond to such controversy remains to be seen. With dialogue, knowledge, and cooperation, perhaps the cycle of conflict that has characterized the history of western water rights can finally be broken.

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