

STATE-BASED ENVIRONMENTALISM

HOW WATER MARKETS CAN END CONFLICTS

A GUIDE FOR POLICY MAKERS

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TO THE READER

Water has been an important concern in the West since the days of the Gold Rush. With today's rapidly growing populations, many western states are facing greater pressure than ever from ranchers, farmers, environmentalists and the residents of growing cities to divide water among competing interests. The century-old doctrine of prior appropriation provides the West with a useful way to allocate water through its principle of "first-in-time, first-in-right." Yet over the years a growing number of legal restrictions have prevented the prior appropriation doctrine from working as well as it might. In this booklet, Clay J. Landry explains how removing a series of cumbersome restrictions and regulations would allow markets to develop that could meet the water demands of western states and end the long conflicts over western water rights.

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This booklet is part of a PERC project on "State-Based Environmentalism," directed by Matthew Brown. The project aims to help state policy makers understand how local control and market incentives can be used to protect the environment and quality of life. The booklet was produced by Dianna Rienhart and is available from PERC in hard copy or electronically from the PERC Web site, www.perc.org.

HOW WATER MARKETS CAN END CONFLICTS

BY CLAY J. LANDRY

Rapid population growth in the West is making the region thirsty for water and posing dilemmas for state officials. City dwellers, farmers, and even environmentalists all want to have a voice in how water is allocated in the western states—and their clamorous demands aren't likely to quiet down any time soon.

The way to resolve these competing demands is through the marketplace, which allows water to move from one user to another as needs for water change. The West has a system in place—the century-old prior appropriation doctrine—that could satisfy the demand for water by fostering more trading. The guiding principle, “first-in-time, first-in-right,” clarifies who has the right to divert water (the right is based on the date of first use). This principle also rations water during times of shortage, as those who diverted the water first have priority. The clear definition of who has the right to water enables users (or appropriators) to trade with one another.

Unfortunately, a number of legal and institutional restrictions hinder the ability of water users to trade. These restrictions include beneficial use standards, no-injury rules, public interest reviews, use-it-or-lose-it requirements, and limitations on conserved water. By loosening or eliminating these restrictions, state governments could allow markets to provide an abundant supply of high quality water.

1**REMOVE BENEFICIAL USE STANDARDS.**

- ✓ BENEFICIAL USE STANDARDS ARE OUTDATED AND NO LONGER NECESSARY
- ✓ REMOVING SUCH STANDARDS WOULD ENCOURAGE INNOVATION

Beneficial use standards are perhaps the oldest form of water use restrictions. Dating back to English common law, they require appropriators to put water to a beneficial use. In the early mining camps of the West, miners based their claims on beneficial use, and the capacity of their diversion ditches was generally accepted as a measure of the amounts they needed. This policy eliminated the need to record rights formally and prevented individuals from staking a claim to the entire flow of a river.

Times have changed a great deal since the early days of the frontier. Computers have lowered the cost of recording and tracking water rights; monopoly control over vast quantities of a river's water is unlikely, given that most of the water in the western states' river basins is fully allocated to a large number of appropriators.

Today, beneficial use standards severely limit the way water can be used because states have narrowly defined the uses that are considered beneficial. They are now heavily biased in favor of historical uses, such as farming and ranching. Consequently, new and innovative water uses that are not classified as beneficial are not allowed. On rare occasions when state agencies approve transfers outside the traditional definition of beneficial use, such as an industrial application, they usually place numerous restrictions on the rights. This drives up the cost of wa-

ter, making transfers uneconomical for new uses.

Eliminating beneficial use standards is the most straightforward legislative fix to this problem. It would allow individuals to determine for themselves whether a use is beneficial—if someone is willing to pay for water, then the use is obviously beneficial to that person.

Some experts in water law, however, feel that the standards are necessary to protect the public's interest in water. For example, David Getches, a defender of beneficial use, argues that the standards screen out objectionable water uses, preventing them from "interfering with water quality or jeopardizing publicly important purposes like fishing and recreation." This belief is widely held among many water managers and environmentalists. Consequently, efforts to eliminate the beneficial use standards are likely to encounter stiff opposition.

Broadening beneficial use standards—rather than eliminating them entirely—offers a politically expedient alternative. The American Society of Civil Engineers, promulgator of the Model State Water Rights Code, advocates redefining beneficial use requirements to include virtually any useful or productive purpose. For example, the society's model code includes within the concept of beneficial use the goal of "maximizing social welfare by considering instream and offstream uses as well as broader societal interests like the environment and conservation."

Such a change could facilitate markets by lifting historical limitations on what uses are considered beneficial. It does not entirely eliminate politics from water allocation decisions, however. In fact, such expansions could foster more governmental involvement in water allocation decisions at the expense of private property rights and ultimately the success of water markets.

2**UPDATE THE NO-INJURY RULE.**

- ✓ BETTER RULES WOULD MAKE IT MORE DIFFICULT FOR THIRD PARTIES TO BLOCK INNOVATIVE WATER USES
- ✓ TIMELY AND FAIR ADMINISTRATIVE REVIEWS WOULD ENHANCE WATER MARKET ACTIVITY

As water rights are traded and moved from one location to another, the potential arises for injury to water right holders who are not involved in the transaction. This is a real problem that must be addressed when dealing with water right transfers. To prevent harm, states apply a no-injury rule to all water rights transfers. The no-injury rule guides administrative reviews that examine whether or not the transfer will affect other water claims. Typically, transfers are approved as long as the review shows that there is no injury to other water rights.

The no-injury rule, however, complicates a review process that is highly centralized and bureaucratic in nearly all western states. Transfer applications are filed with the state water management agency that reviews and administers the request. As the number of transfer applications mounts due to growing interest in water markets, the process bogs down. It was designed at a time when water right transfers were relatively few and far between. Today, backlogs of thousands of transfer applications are not uncommon. These backlogs translate into substantial time delays for transfer applicants—approvals have been reported to take as long as three to five years. An efficient water market simply cannot function under such delays and uncertainty.

The regulatory review process needs to be fixed. Administrators must develop a process that can deal with third-party concerns in a timely and equitable manner. One option is to follow the lead of Washington state, which has empowered local conservancy boards to review and approve water right transfers. The boards provide a way to speed up reviews, bring regulatory decision closer to the point of impact, and give local citizens more opportunity to participate in resource allocation decisions.

The process for establishing a board is flexible, but it is driven by local initiative. Washington's boards are comprised of local citizens who volunteer their time and who are selected by the county legislative authority. This approach has been criticized on the grounds that board members are not well trained compared to state agency water right technicians. Board members, however, are required to complete a 32-hour training course provided by the Department of Ecology. In addition, most members appointed to the boards already have some background in water management. In many instances, board members have more experience and knowledge of local water management issues than their state counterparts.

Another factor hampering trades is the increasing number of parties who can claim injury from transfers. Historically, third party interests were limited to those who held water rights. These interests, however, are being stretched by legislatures and administrators to include environmental impacts, local economies and culture, and the general public interest. Such expansion of the definition of third parties makes it easier for individuals and groups to oppose voluntary water transfers that, if approved, could ultimately improve water efficiency. To ensure that efficiency enhancing water transfers are not blocked by seemingly unrelated parties, no-injury rules should be limited to those individuals who hold actual water rights.

3**ELIMINATE THE
USE-IT-OR-LOSE-IT RULE.**

- ✓ THE RULE DISCOURAGES WATER CONSERVATION
- ✓ ELIMINATING IT WOULD FOSTER INNOVATIVE CONSERVATION MEASURES

Under the prior appropriation system, water rights can be lost if they are not put to use. This requirement, sometimes called the “use-it-or-lose-it rule,” requires water right holders to use their entire water right or risk losing it through forfeiture. Once a water right is deemed by the state to be forfeited, the water is available for appropriation by other water users.

The use-it-or-lose-it rule stifles water markets in several ways. First, with a temporary transfer such as a lease, a failure by the lessee to use the water may result in the lessor losing the right. Second, administrative agencies examine historical water use—the amount actually used as opposed to the amount allowed by the water right—in deciding how much water can be transferred. If the historical use is less than the quantity specified by the right, the agency may limit the transfer to the amount of historical use, thus reducing the value of the right.

There was a legitimate reason for the use-it-or-lose-it rule at one time, but its time has passed. It was designed to discourage speculation by keeping appropriators from claiming large amounts of water and then selling them at high prices. Ironically, the restriction now encourages waste and discourages water right trades.

Today, water right holders commonly use water even when it is not necessary, simply to make sure they do not

lose it through forfeiture. Additionally, the risk of losing some of their water claim in the review process is enough to discourage right holders from selling or leasing their rights. Eliminating the outdated use-it-or-lose-it rule would go a long way toward encouraging water trading.

4**REMOVE LIMITATIONS ON
CONSERVED WATER.**

- ✓ CONSERVATION CAN FREE WATER FOR OTHER USES
- ✓ ADVANCES IN AGRICULTURE WILL MAKE MORE WATER AVAILABLE IF RESTRICTIONS ON CONSERVATION ARE RELAXED

Conservation is one of the most promising ways to meet western states' growing need for water. Saving water by reducing waste or by using more efficient methods and technologies could free up water for other valuable purposes. Water markets give users an incentive for conservation, but only if they are allowed to operate freely. The opportunity to sell unused water encourages appropriators to use water frugally. The water they save can then be sold for other purposes, including instream environmental uses.

A substantial amount of conserved water could come from agriculture, given that approximately 80 percent of western water is used by farms and ranches. Some change has already begun. The value of water has grown so much in the last few years that agricultural producers are finding ways to cultivate more land with less water. According to a 1998 U.S. Geological Survey report, irrigation use decreased by 3 percent between 1990 and 1995, while

the amount of irrigated farmland increased by nearly 19 percent. Better irrigation technologies and conservation efforts such as lining ditches and changing crops made these savings possible. Even more could be accomplished with legislation that allows water users to benefit from conserving and selling water.

Yet most western states have laws prohibiting water users from keeping or selling conserved water. The restrictions are based on the argument that any conserved water must have been previously wasted and not put to a beneficial use. Refusing to let water users benefit from conservation efforts eliminates any incentive to conserve water by curtailing wasteful practices.

Three western states, Oregon, Montana, and California, have laws that encourage water conservation. While each state has taken a slightly different approach, the basic elements of the conserved water laws are the same. First and foremost, water rights are created for water that is conserved. Second, the rights to the conserved water retain the priority date of the original right from which the water was saved. Finally, the conserved water rights are transferable by sale or lease.

So far, few water right holders are taking advantage of these programs, primarily because the programs remain highly bureaucratic. The states have taken a good idea and rendered it largely ineffective with layers of agency rules and procedures. Fortunately, some attempts are underway in Montana, Oregon, and California to streamline the programs. The challenges and experiences of these three pioneering states provide a valuable lesson for other states that are interested in encouraging conservation. States should avoid overly burdensome regulatory requirements that increase the costs of establishing conserved water rights and thus thwart conservation.

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EXPAND MARKETS FOR INSTREAM FLOWS.

- ✓ TRADING WATER RIGHTS CAN BENEFIT THE ENVIRONMENT
- ✓ PRIVATE OWNERSHIP OF INSTREAM WATER RIGHTS ENCOURAGES PROTECTION

A common criticism of the prior appropriation doctrine is that it does not provide adequate protection for the environment. Recent changes in western water law are creating opportunities for water markets to enhance the quality and quantity of stream flow to benefit fish, wildlife, and recreation and to reduce the impact of pollutants. These changes allow diversion rights to be purchased and converted to rights to instream flows.

Water markets for enhancing instream flows are growing. In 1997 farmers and ranchers throughout the western states received more than \$10 million for 490,000 acre-feet of agricultural water that was used to increase the flows in rivers and streams. In addition, agricultural producers donated more than 28,000 acre-feet of water to help protect fish and wildlife. State and federal agencies are responsible for most market transfers, but private conservation organizations such as the Nature Conservancy and the Oregon Water Trust are beginning to broker deals that offer environmental protection.

Long opposed to environmental water sales, the agricultural community deserves credit for many of the legal changes that now make transfers possible. The initial opposition stemmed from concern that water sales would result in farmland being taken out of production. However, agriculture interest groups such as the American Farm

Bureau Federation now recognize that markets are a favorable alternative to political pressures and regulations. In many states, political pressure is forcing reductions in irrigation through requirements for minimum stream flows to satisfy environmental, fishing, and recreational interests. Markets provide an alternative by which these interests can achieve environmental goals through willing buyer/willing seller transactions.

Despite recent legislative changes, water trading for environmental needs remains highly regulated. States continue to place restrictions on ownership, enforcement, and transferability. Restrictions on ownership pose the biggest impediment to the long-term success of environmental water trading. With few exceptions, western states require instream water rights be held by a public agency. Montana and Nevada are the only two states that allow private ownership of instream rights, and Montana limits private ownership to temporary leases.

Restrictions on private ownership of instream flows hamper environmental protection in several ways. First, mandatory public ownerships limits options for managing rivers and streams. Individuals and organizations acquiring water rights for environmental needs should be able to sell them if the stream is no longer in need of protection. The money could then be used to acquire water rights on a stream that needs more water. Such flexibility would reduce dependence on public funding and allow water to return to agricultural uses when that is the highest valued use.

Second, private ownership gives individuals acquiring water rights the clear legal authority to enforce those rights. In contrast, under public ownership, individuals purchasing water for instream needs must rely on the state to enforce the newly created instream water rights.

Finally, restrictions on private ownership limit the opportunity for creative agreements that would allow for limited consumptive uses. For example, an environmental

group that holds an instream water right could lease that right to a farmer for irrigation during periods of high flow. This provides a source of revenue for the environmental group and a source of water for the farmer.

Water rights trading and private ownership of instream rights provide a way of incorporating environmental protection into traditional western water law while respecting existing claims. Unfortunately, state institutional structures and laws have created numerous obstacles for private provision of instream rights. Until private rights to instream flows are allowed, property owners will have no incentive to maintain free-flowing water.

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ESTABLISH TRADABLE POLLUTION PERMIT MARKETS.

- ✓ MARKETS CAN IMPROVE WATER QUALITY AT LOWER COST
- ✓ THIS IS ACCOMPLISHED BY FOCUSING ON OUTCOMES, NOT ARBITRARY STANDARDS

Water quality is becoming an important policy issue throughout the western states. Growing concerns about the cleanliness of water have resulted in tighter state and federal regulations on effluent and pollution discharge. The regulations, however, give little consideration to the cost of compliance and to whether there are cheaper alternatives to meeting water quality standards. Many states have reached the limit of the improvements in water quality that can be accomplished through regulation. Tradable pollution rights or effluent trading permits are a new and cre-

ative approach for solving water quality problems that many states are starting to explore.

Pollution permit trading provides a lower-cost way of reducing the overall pollution levels in a watershed or river basin. This is achieved by allowing a wastewater treatment plant, factory, or any water user that discharges pollution into a river or lake to purchase water quality improvements or reductions in pollution discharge by others. Rather than installing additional costly controls themselves, dischargers can pay others to pollute less in order to achieve the same level of pollution reduction. In other words, dischargers with higher control costs can purchase additional permits from dischargers with lower control costs.

The success of pollution trading programs is highly dependent on their structure and design. Creating clearly defined, enforceable, and tradable rights is fundamental to any well functioning trading program. The U.S. Environmental Protection Agency has developed draft guidelines for pollution permit markets, but has left the final design to the states.

While a handful of western states (Idaho, Colorado, and Washington) have implemented pilot trading programs, eastern states have the most experience with pollution permit trading. North Carolina's Tar-Pamlico Basin provides a model for pollution permit trading programs for both eastern and western states.

In the mid-1980s, North Carolina's Tar-Pamlico Basin was suffering from a variety of water quality problems, mostly caused by nutrient runoff from farms and discharges from wastewater treatment plants. In 1989 a group of twelve wastewater plants voluntarily formed the Tar-Pamlico Basin Association. The association set a cap on overall pollution levels within the basin but gave its members flexibility in meeting these levels. With this flexibility, firms could choose the most efficient way of achieving water quality.

Association members could: 1) lower their own emissions; 2) purchase pollution permits from other association members, who would lower their emissions; or 3) pay a \$29-per-kilogram fee that funds abatement of nonpoint source pollution such as agricultural runoff.

Innovative approaches such as the Tar-Pamlico Basin Association are based on the recognition that the goal of pollution control is improvement in water quality, not simply a reduction in discharge levels. State governments that recognize this important distinction can make abundant progress towards the universal goal of clean water.

CONCLUSION

Water markets offer a great improvement in the way that water is managed and used. They can provide fair and efficient ways to reallocate water to meet constantly changing and growing needs. They also can create enormous potential financial gains that would spur much-needed investment from the private sector. But most importantly, markets can end conflict by providing a way for water users to reach agreements and engage in mutually beneficial trades.

Some improvements are already starting to take shape. But before the full potential of water markets is realized, state policy makers will have to eliminate a number of institutional and legal barriers. The success of water marketing and its ability to resolve water conflicts ultimately hinges on the willingness of state governments to remove impediments and unleash market forces.

REFERENCES

- Anderson, Terry L., and Pamela Snyder. 1997. *Water Markets: Priming the Invisible Pump*. Washington, DC: Cato Institute.
- Landry, Clay J. 1998. *Saving Our Streams through Water Markets: A Practical Guide*. Bozeman, MT: Political Economy Research Center. Available: <http://www.perc.org/sos.html>
- National Wildlife Federation. 1999. *A New Tool for Water Quality: Making Watershed-Based Trading Work for You*. Montpelier, VT.
- Solley, Wayne B., Robert R. Pierce, and Howard A. Perlman. 1998. *Estimated Use of Water in the United States in 1995*. U.S. Geological Survey Circular 1200. Washington, DC: U.S. Department of the Interior, U.S. Geological Survey.
- Sterne, Jack. 1997. Instream Rights and Invisible Hands: Prospects for Private Instream Water Rights in the Northwest. *Environmental Law* 27(1): 203–43.
- Wahl, Richard W. 1989. *Markets for Federal Water: Subsidies, Property Rights, and the Bureau of Reclamation*. Washington: Resources for the Future.