

# Simplifying Western Water Rights to Facilitate Water Marketing

Olen Paul Matthews

*University of New Mexico*

**W**ater reallocation is one of the more contentious issues in the West today. Even though many people resist change, reallocation is a reality that must be faced. Increased urban water demands and environmental requirements have created a need to re-examine the ways we currently use water. To accommodate this need, Western water law has been in transition (Wilkinson 1985). However, the transition has not always been smooth, and reallocation has not always been the focus of reform. As a result, finding an equitable and efficient means for reallocation has become a critical issue. If they can be improved, water markets may offer a solution.

Much of the current water use in the West has been static for the past century. With over 80 percent of all water being used for agricultural purposes, irrigation dominates. Nevertheless, reallocation will substantially change the location and manner of water use, thus altering the West's water use map. In addition, the simplification of the reallocation process via improvements in water market will likely facilitate similar changes. Clearly, the geographic consequences of reallocation will be substantial.

A few years ago a project was funded to examine reallocating water in response to global climate change. Water markets were the study's focus. The project's premise was that water markets could be improved if better scientific models were made available. Currently, water markets are constrained by uncertain user and environmental impacts resulting from market transactions that require changing the place and nature of water use. According to the premise, better scientific models

(i.e. those based on geographic information systems) would provide a more accurate quantification of the impacts and therefore reduce this uncertainty (Matthews et al. 2001). This premise still has merit, but another perhaps better way to reduce market constraints exists. In short, the property rights that define the limits of water use need to be simplified so that better scientific models will not be needed. Accordingly, this article initially examines the nature of water rights, the need for water markets, and the nature of the market constraints. It then makes recommendations on how those constraints can be removed and examines the feasibility of doing so.

## **The Nature of Private Water Rights in the West**

As the Western United States began to develop, the water rights doctrine existing in the East proved inadequate because sufficient water for all potential uses was often absent. To allocate water during times of shortage, the appropriation doctrine was formulated. It created a preference right to use water based on temporal priority—first in time, first in right. This preference, which gives the first water user the highest possible “security of delivery” in times of shortage, is the cornerstone of the appropriation doctrine. The justification for the appropriation doctrine's temporal priorities is investment protection (Matthews 1984). After all, who would invest in an expensive diversion and delivery infrastructure unless the delivery of water was secure? Temporal priority prevents subsequent water users from interfering with established rights,

thereby protecting the investment. The central element of the property right is the priority date that establishes the preference.

Because water is a mobile resource, a water right cannot be an “exclusive” right as is the case with other property, such as land (Matthews 1991). Rather, water rights are usufructary (or use) rights. Applying the term “ownership” to these rights is a misconception because that term carries the connotation of exclusivity. Although Western states claim ownership of the water within their boundaries either in their own name or in trust for the people of the state, the Supreme Court of the United States has called their claims a legal fiction (*Sporhase v. Nebraska* 1982). If state ownership is a “legal fiction,” then states cannot give title to private individuals. A state cannot give away what it does not have. Therefore, water should not be thought of as an owned resource with exclusive use rights. Instead, it should be seen as a shared resource with multiple use rights (i.e. both public and private) existing in it at the same time. Even though these usufructary rights are shared and non-exclusive, Western states protect them from unconstitutional “takings” (Sax 1990). Thus, like private property rights, these rights have some degree of constitutional protection.

The private use rights established under state law traditionally require that water be “diverted” from its source and applied to a “beneficial use.” Today, a permit is generally mandatory. The right created under state law is limited. The location, time, volume, manner, and diversion point of the original use are fixed and any change in them requires a consideration of harm to other users and the “public interest.” This “no injury” rule limits the ability of water right holders to change uses or sell the right (Gould 1988). In addition, water uses are required to be “beneficial.” However, it is not always clear what constitutes a beneficial use. Even if “waste” itself is unacceptable, traditional uses that are inefficient from a conservation perspective may be viewed as beneficial (Tarlock 1987). A period of non-use may also lead to an abandonment or forfeiture of the right.

These various rules define the private rights to use water. Transfers through markets and other methods must take place according to these rules. The market constraints created by these property rules are substantial. Before these constraints are addressed, the need for markets will be considered.

### Why Markets?

I began my career with an aversion to water markets, but I have come to realize that markets themselves are not the problem. I merely oppose the way water markets operate within the traditional property rights structure of the West. Appropriately designed property rights structures can overcome some of the negative aspects historically associated with water markets. However, a question still remains: “Why consider markets at all?”

A growing body of literature from scientists, policy makers, and the press stresses the need for some form of reallocation (Kaiser and McFarland 1997). Reallocation is advocated because water is not being used where it is needed. Cites, farmers, and recreationists want more, and endangered species need more. However, there is little “more” water in the West. Without the ability to create “more” water through new water projects, the remaining choices are conservation and reallocation. Although conservation is an excellent method of making more water available, it has its own constraints within the property rights structure (though those are beyond the scope of this short article).

The other option, reallocation, can be accomplished through two basic methods: markets and regulation. Markets have been suggested as a means of moving water to uses with higher economic returns (Kaiser 1996). For example, if constraints on markets are removed, water would move from agricultural uses to urban uses. Markets have also been suggested as a way of reducing waste by improving efficiency (i.e. from a conservation perspective). Because market transactions involve willing buyers and sellers, markets also act equitably. Although these brief statements are oversimplifications, they are sufficient to illustrate some of the perceived advantages of markets. The major disadvantages under the traditional Western system are: 1) the uncertain impact transfers will have on third parties and 2) the failure to realistically consider the interests of the public (e.g. the maintenance of in-stream flows and protection of the environment).

The alternative to markets is regulation. Reallocation through regulation can protect the public’s interest in water. That, indeed, is the purpose of many regulations. Regulations can also push water use to higher value uses and toward better

efficiency. However, regulations are not always perceived as equitable. In many western states, water regulations are perceived as an inherent evil that somehow must be unconstitutional. Regulating water in any way is contrary to “God, Country and the American Way.” With this attitude toward regulations, the viability of markets as a means of achieving revised water policy goals, needs to be considered.

## Constraints on Water Markets

As suggested above, the main constraint on water markets is the inability to accurately and easily quantify the effects on others of changes in water use. Because water rights are not exclusive, third party effects need to be considered in any proposed transaction. The appropriation doctrine defines the property right, but it also requires that “no injury” be done to other private right holders as a result of a transaction. In addition, statutes require a consideration of the public interest before the state agency approves any transaction. In the past, a consideration of the public interest was perfunctory with any traditional beneficial use being in the public interest. Today, environmental concerns and other public interest uses are being considered (Grant 1987). The requirement to look at third part effects puts enormous constraints on water markets.

The traditional way to alleviate third party effects is to allow the sale of the consumptive use only. The consumptive amount is the volume of water removed from the system by the water user making it unavailable to other users or the environment. This volume is not quantified as part of the right. In general, the volumetric measure of the right is taken at the point of diversion where it can be easily measured. This diversionary right is not the same as the consumptive amount. Determining the consumptive amount requires a case-by-case determination. This means each potential transaction is unique.

Other constraints are built into the system. Even when a user has a permit, the use entitlements accruing in him or her are often uncertain. Many rights have yet to be adjudicated, meaning they do not have the force of law behind them. In addition, a permit does not insure the right has not been lost through abandonment. A period of non-use will result in the loss of a right regardless of permit possession.

No system currently exists to monitor abandonment, so a case-by-case determination must be made before water is sold. Private rights may also lack clarity because “new” public rights, which have an impact on private rights, are asserted. For example, minimum flow requirements to protect endangered species may interfere with private rights. Because the public interests are not always clear or known, the security of the title to private rights can be placed in doubt.

The last constraint to be considered is one that limits transfers spatially. This limit can result from two circumstances. An interstate compact may, on its surface, prevent the export of water. However, sound arguments can be made that only a few compacts permanently allocate water in ways that prevent marketing across state boundaries (Matthews and Pease 2002). Some irrigation districts also have restrictions on sales outside the district’s boundaries. Although the original reasons for these restrictions were sound policy, they artificially constrain markets in ways that are unnecessary today. Those irrigation districts formed under the Reclamation Act may be able to limit exports, but those without a federal umbrella are probably unconstitutional.

## Suggestions for Changing the Property Rights Structure

The first step toward removing the constraints on water markets is to eliminate the need for case-by-case determinations of consumptive amounts. Treating each right as something unique adds to the transaction costs of water transfers. To resolve this problem, the use entitlement of each right holder needs to be standardized. Some states have achieved a degree of standardization by setting a maximum volume allowable per acre. This volume is not the consumptive amount, however, which is the volume necessary to account for third party effects. To get around this problem, the water entitlement needs two volumes associated with it, a diversionary amount and a discount rate. From a practical point of view, the diversionary entitlement should be measured from the point of diversion. To account for third party effects, a standardized discount rate should also be established. This would replace the case-by-case determination of consumptive amount. The discount should be substantial enough to return

some portion of the water to the public sector any time there is a sale of water. This would be like a tax on the transaction. The water right holder would have a diversionary right to a specific volume and title to a discounted volume that would be subject to sale. An example will help clarify what is meant. A farmer irrigates 100 acres of land and has a right to divert 250 acre-feet of water (2.5 acre-feet per acre). The discount rate includes a standardized estimate of consumptive amount (1.25 acre-feet per acre for example) and a tax aimed at returning some water to the public sector (.25 acre-feet for example). The amount available for sale in this example would be 100 acre-feet (2.5 diversionary amount minus 1.25 consumption amount minus .25 tax = 1.0 acre-feet x 100 acres = 100 acre feet). Standardizing the diversionary entitlements and creating a standard discount rate, removes the uniqueness of each transaction. As with zoning, some people might have a more valuable right after standardization and others might have a less valuable right. The advantage is the right holder would know exactly what their right was and would know exactly what could be sold.

The second major change is to clarify what is considered a valid private right. Problems with unadjudicated rights, abandonment, and conflicts with newly asserted public rights could be removed by creating a title register. The title register would be a guarantee to the buyer and seller that a valid title would pass after a sale. A similar system has been developed for land transactions and is called a Torrens system. Use of such a system has been suggested in South Australia (Young and McColl 2002). The register would include a record of the diversionary amount, the discount rate, the season in which the right could be exercised, and the priority date. The concept of abandonment would be eliminated, meaning non-use would not affect the title. Although this could lead to some speculation, speculation is not an inherent evil as was assumed in the appropriation doctrine. The concept of abandonment and its “use it or lose it” philosophy leads to many wasteful practices. If a water right is on the register, it would be available for sale with the title guaranteed.

The last major constraint, spatial limitations on marketing water, is not really part of the property rights system, but it needs to be eliminated as well. This point has been discussed elsewhere, so additional space will not be devoted to it here (Matthews and Pease 2002).

## Issues Remaining

Two issues remain to be addressed. Is this an unconstitutional taking of property? Is it politically feasible? Any time the use of property is changed or restricted, the question arises as to whether a constitutionally protected property right has been taken requiring compensation. What is proposed here is a regulation of property not unlike the regulation of land under zoning ordinances. As with land, some reduction in property values attributable to regulation is acceptable. However, the exact line where regulation becomes a taking is not clear. With the revisions proposed, property values arguably would not decrease at all. Instead, there should be an increase in value as a result of the reduction in transaction costs and an increase in the marketability attributable to title guarantees. Good arguments can be made for the constitutional validity of the proposed changes.

Politically, such policy changes may also be possible. Water rights holders would have to be convinced they would be better off under this new system. If their rights are more valuable as a result of the changes, as suggested above, then opposition should disappear. A grass roots effort would be required to convince farmers and other water rights holders that they would not be harmed by such changes. Such an undertaking would be difficult but not impossible. One convincing argument is that markets may be more equitable to the rights holder than regulations restricting use. Whatever the policy choice, some form of reallocation is needed. Markets may be the most equitable way of achieving it.

## Conclusion

For much of the West, water is the controlling variable for economic development. Functioning water markets have the potential of making substantial changes in the nature and place of western water use. Because agriculture is the dominant water use, such changes will change the way agriculture is practiced. Reallocation will also allow favorably situated urban areas to expand and will potentially make possible improvements in the natural environment. As water allocation helped create the current geography of the West, water reallocation will help change it.

## Notes

\* This material is based on work supported in part by the United States Environmental Protection Agency's Science to Achieve Results (STAR) program and the National Science Foundation. Although this article has been funded in part by the United States Environmental Protection Agency through grant number R-82807001-0 (An Integrated GIS Framework for Water Reallocation and Decision Making in the Upper Rio Grande), it has not been subjected to the Agency's required peer and policy review and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred. Any opinions, findings, and conclusions expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation who supported this work through grant number BCS-9909140 (A Quantitative Assessment of the Economic and Institutional Impacts of Climate Change on the Upper Rio Grande Valley Using an Integrated Geographic Information System).

## Author Information

**OLEN PAUL MATTHEWS** is a geographer and a lawyer. He has spent the last several years thinking about property rights and transboundary issues. "Water" has proven to be a useful subject in trying to sort out the complexities involved in these issues. After 14 years in a variety of administrative positions, he is happy to be a Professor of Geography at the University of New Mexico.

## References:

- Gould, George A. 1988. Water Rights Transfers and Third Party Effects, *Land and Water Law Rev.* 23:1.
- Grant, Douglas. 1987. Public Interest Review of Water Right Allocation and Transfer in the West: Recognition of Public Values, *Arizona State Law Journal* 19: 681.
- Kaiser, Ronald A. & Michael McFarland, A Bibliographic Pathfinder on Water Marketing, *Natural Resources Journal* 37: 881 (1997).
- Kaiser, Ronald A. 1996. Texas Water Marketing in the Next Millennium: A Conceptual and Legal Analysis, *Texas Tech Law Rev.* 27: 181- 261.
- Matthews, Olen Paul. 1984. *Water Resources, Geography and Law*, Washington, D.C., Association of American Geographers.
- Matthews, Olen Paul. 1991. Water Is Not 'Real' Property, *Water Resources Update* 85: 19-21.
- Matthews, Olen Paul and Michael Pease. 2002. Interstate Water Compacts—Help or Hindrance in Marketing Water across State Lines, *Proceedings: Integrated Transboundary Management Conference*, UCOWR .

- Matthews, Olen Paul, Louis Scuderi, David Brookshire, Kirk Gregory, Seth Snell, Kate Krause, Janie Chermak, Bradley Cullen, and Michael Campana. 2001. Marketing Western Water: Can a Process Based Geographic Information System Improve Reallocation Decisions, *Natural Resources Journal* 41:329-371.
- Sporhase v. Nebraska, 458 US 941 (1982).
- Sax, Joseph. 1990. The Constitution, Property Rights, and the Future of Water Law, *University of Colorado Law Rev.* 61: 257.
- Tarlock, A. Dan. 1987. The Changing Meaning of Water Conservation in the West, *Nebraska Law Rev.* 63:145-174.
- Wilkinson, Charles F. 1985. Western Water Law in Transition, *U. Colo. L. Rev.* 56: 317.
- Young, M. D., and J.C. McColl. 2002. *Robust Separation: A Search for a generic framework to simplify registration and trading of interests in natural resources*, CSIRO Land and Water, Australia.