

# THE IMPORTANCE OF PROPERTY RIGHTS IN WATER

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I began to study water economics when I arrived at Utah State University in 1962. A small water market in central Utah, where farmers in four irrigation companies exchanged water at free prices, intrigued me. The resulting increases in economic efficiency were so apparent that I wondered why water markets had not emerged over a much broader geographic area in the West. I also discovered tremendous differences in per capita use of urban water among communities in northern Utah, and this led me to explore elasticity of demand and other factors affecting water consumption. However, it was water institutions that interested me most, and it is that subject which I wish to explore in this note.

A significant erosion of private property rights in water has occurred in the past fifty years. I believe that the consequences for efficient water allocation have been far more serious than is commonly realized, although more empirical work needs to be done to test this hypothesis. This note will review the institutions that were important in the development of the western United States (U.S.), review the emergence of some water marketing, and discuss the increasing trend to allocate water by purely political criteria.

## **WATER INSTITUTIONS OF THE SETTLEMENT PERIOD**

During the settlement of the American west, in the main the legal institutions used to develop and allocate water were prior-appropriation law, administered at the state level, and compacts that divided the water of interstate rivers among states. These institutions provided the required security of tenure in water for farmers and miners, who were the primary instigators of economic progress, to develop this arid region.

To obtain a “right,” those who wished to appropriate water had to satisfy two requirements imposed by a state regulatory agency (in most states, a state engineer). The

first was that water had to be put to a “beneficial” use, generally restricted to uses that required diversions from the supply source. The second prerequisite for receiving a right was that no existing appropriator would be harmed if the proposed right were granted. Hence, prior-appropriation law protected senior (first-in-time) rights from more junior applicants. Applying these criteria for new appropriations by the regulator was a predictable, technical, and hydrologic exercise where the agency had little real discretionary authority. In receiving reliable rights, private owners could produce wealth by constructing economically feasible projects.

A major change occurred early in the 20<sup>th</sup> century. Under the authority and impetus of the Reclamation Act of 1902, the federal government built large multi-purpose water projects, and irrigation development in the region benefitted from significant subsidies from the nation’s taxpayers. But the states never relinquished regulatory control over the issuance of water rights. In the case of federal water projects, the federal government obtained rights from the states, just as private irrigators did, and federal water was then contracted to public districts and individual users.

As the population and the economy of the region grew, however, urban, recreational, industrial, and conservation demand for water increased. Since water prices were fixed by administrative fiat, this new demand could not be satisfied without additional water, since existing water supplies were generally already appropriated. Even with the large federal dams, pressures for water reallocation among uses and geographic regions became intense as large differences emerged in the use-value of water. Of particular importance were new instream demands for water that often were frustrated because the existing water allocation doctrines were designed to include only uses that required diversion. The upshot of the changing economic environment was that if wealth from water use was to be maximized, some way had to be found to accommodate water transfers to uses of higher value.

I would argue, however, that so long as the state agencies confined their regulatory purview of the allocation process to an appraisal of whether unappropriated water was available and made sure that other rights were not damaged, the prior-appropriation doctrine was reasonably effective in accommodating many water exchanges among uses. The exception was instream use. Many of the growing municipalities of the west bought appropriation rights from irrigators to the mutual benefit of both, although if these exchanges could be called markets, they were primitive at best. The state regulatory bodies had to approve any proposed changes in the place and quantity of use. But it was not the role of the regulatory authority to judge the economic feasibility or social desirability of the proposed transfer. These judgements were left to the existing owners of rights and those who wished to obtain them, both parties possessing the incentives to make these valuations.

Two institutional innovations arose to accommodate the changing demands for water. The first was the gradual emergence of more sophisticated markets where water could be moved to higher-valued uses, subject to state approval, of course. But water markets have always been viewed suspiciously in many quarters of society that argued that the assessments of private parties participating in market decisions would not give adequate attention to “public” or “community” interests that were left out of the private market calculations. This omission led to the second innovation: legislative and judicial measures that would ostensibly regulate water allocations in the “public” interest. Even the state regulatory agencies have departed from their traditional role of facilitating water transfers and have assumed a position of a social arbiter where the principal goal has become to promote the public interest. If economic efficiency and wealth maximization are to be achieved in water allocation, I regard the development of water markets as a strongly positive step, while water allocation by political and judicial agencies using a public-trust criterion is a huge step backwards. Let me attempt to defend this position.

## **THE EMERGENCE OF WATER MARKETS**

When I began to study water economics in the early 1960s, water markets that permitted free exchanges among willing buyers and sellers were very rare and were considered by many to be dangerous and antisocial. Why was this so, given the commonly accepted view that competitive markets efficiently convey resources to higher-valued uses? At least part of the answer is that water has been deemed different from other resources, such as land, that are traded in response to changing valuations. Water is a “social” resource, owned by the

people collectively, a point that is explicit in the constitutions of western states. Hence, the people, acting collectively through their political institutions, granted usufructuary rights to divert water and use it, but this was different than owning the corpus of the water so that market exchanges could be made.

Because water was “different,” complex rules and customs evolved that have been detrimental to the development of markets that are now needed to reallocate water. These rules are embedded in federal and state agencies as well as in private and quasi-private water agencies such as mutual irrigation companies and irrigation and conservancy districts. Some examples are area-of-origin laws that are designed to protect water users from political takings, statutory prohibitions against exporting water from one state to another, public-trust reservations of instream uses, and pricing rules that were embedded in federal reclamation law and copied by many state water development agencies. But public choice theory raises doubts as to whether these transfer impediments really arose in response to “legitimate” public concerns or were merely the rent-seeking efforts of entrenched special interests who wished to protect their wealth positions. Although my predilection is to favor the public choice hypothesis, I do not believe that a definitive answer to this question can be given without more empirical research.

Further, many obstacles to free transfers of federal water have been imposed by allocation and pricing rules imposed by Congress to achieve income redistribution (Gardner, 1996). Especially important are the differential repayments to the federal government imposed on different classes of water users, the huge subsidy given to irrigators that has mostly been capitalized into land values, and the 160-acre limitation meant to promote family farming on federal projects. The first meant that contracted water could not be transferred to M&I users without the federal government imposing a higher water charge, hence greatly discouraging what would have been economically feasible transfers. In the case of the 160-acre limitation, potential transfers have been burdened with a labyrinth of regulations that pertain to size of the farm, whether irrigated land was owned or rented, and what the values of raw and irrigated land were. However, even with these obstacles, some transfers of federal water have occurred, especially in recent years as regional droughts in the 1970s and 1990s have induced the federal government to relax transfer impediments.

Two legislative statutes at the federal level have been particularly important in changing the institutional environment: The Reclamation Reform Act of 1984 and the Central Valley Project Improvement Act of 1992

(CVPIA). The former relaxed some of the rigidities of the 160-acre limitation policy, and the latter explicitly recognized water transfers and instream uses as “beneficial” (Gardner and Warner). The CVPIA was watershed legislation in promoting water markets and water-use efficiency. All individuals or public and private districts who receive Central Valley Project (CVP) water under service or repayment contracts are authorized to transfer all or a portion of the water to any other California water use recognized as beneficial under applicable state law. Howitt (1994) has argued that the CVPIA itself reflects the policy influence of a recent coalition of urban and environmental interests, and a shift in California voter preferences away from agricultural development and cheap food towards urban water supplies and environmental quality. By allowing farmers to sell up to 20 percent of their water without approval of their local water district or agency, the CVPIA has, for the first time, vested the property right to the first 20 percent of contract water directly in the individual user. These conditions contrast sharply with the incentives facing potential water sellers in the Bureau of Reclamation (BR) districts before the passage of CVPIA.

Howitt reports data that are revealing. The absence of incentives for sales by individual users first came to the fore in California’s 1976-77 drought. The Bureau of Reclamation established an emergency water bank that purchased water from contractors and sold it to other users. Given the federal restrictions on pricing in 1977, however, the BR could offer only a small incentive price above the nominal water cost. Hence, purchases of water through the bank averaged \$39.60 per acre-foot with some as low as \$15. The 1977 bank attracted sales of only 38,000 acre-feet of water from farming. This contrasts sharply with drought sales under the 1991 water bank run by the California State Department of Water Resources, which offered the sellers of water \$125 per acre-foot. Even though the 1990s drought was similar in severity to the one in the 1970s, 820,000 acre-feet of water were offered in the two and half months before the department stopped purchases, and the quantity supplied exceeded the quantity demanded by two to one.

There can be little doubt that barriers to water markets are quickly crumbling in nearly all western states, and the frequency and magnitude of market transfers will increase sharply in the years ahead, contributing importantly to more efficient water allocation and the creation of wealth. Terry Anderson and Pamela Snyder (1997) have chronicled many of these markets developing throughout the region. Even though a water bank in Idaho has existed since 1928 and the Utah market referred to in the opening paragraph has been operating since the 1930s, the pace of new markets has been accelerating in the last decade. But

we should not be too sanguine that all is well because it is also evident that political allocations are also likely to increase under the banner of public trust, and these will not be generally favorable to wealth creation.

## **RENT-SEEKING AND STATE WATER REGULATION**

The case for government regulation of resource use in general as a “public trust” has been stated by Sax (1984: p.131) as follows:

The regulators believe that individual behavior in the market reveals only one species of preference and therefore is incomplete. There is, they [the regulators] say, a kind of preference that people hold solely in their capacity as members of collectivities, and for which only collectivities speak. One such collectivity is the political community or the government. When the government regulates or controls use as owner, it is expressing a collective preference.

Exercise of the public-trust doctrine allows the political community to trump the exercise of private property rights (Dana). Historically, however, the public trust in its purest form was used only to regulate commerce, navigation, and fishing on navigable waterbodies. It was developed under the common law of England, but has been utilized for more than 200 years in the United States as well (Washburn). Generally it is activated through judicial action, but not always. And because there are no constitutional or statutory guidelines for the judiciary to follow, courts in the United States have had considerable latitude in defining and interpreting public trust rights.

Washburn (1987) has noted some significant issues that have emerged. Frequently, more than one public trusts are simultaneously invoked in a specific situation, and no definitive standards exist to help courts or legislators prioritize these rights. In addition, determination of whether a public trust right in water even exists is highly subjective and controversial because of conflicting interests in water use. And finally, the relationship between traditional private-property rights and expanding public-trust rights is not clear, and because of this ambiguity it has been relatively easy to “take” private rights. But with private rights in such jeopardy, the uncertainty created could be a major deterrent to management and investment planning requisite to economic efficiency.

The Mono Lake case from California is a perspicuous example of invocation of the public trust doctrine. More than forty years ago, the Los Angeles Department of Water and Power acquired land and water rights in the

Mono Basin, and according to appropriation law received permits from the California Department of Water Resources to appropriate water from the tributaries of Mono Lake. As a result of these lawful diversions, water levels in the lake dropped, increasing salinity and reducing shrimp populations, and one of the lake's islands became a peninsula, exposing many gull nests to land predators (Dana). Several environmental organizations joined in a suit to limit water diversions from the basin. The core of the plaintiffs' argument was that the State of California holds the environmental endowment of Mono Lake in a trust capacity for California citizens that can be neither ceded nor neglected by the California Department of Water Resources. The California Supreme Court ruled that the public-trust doctrine protects navigable waters from harm caused by diversion of nonnavigable tributaries; and that the public trust doctrine protects navigation, commerce, fishing, open space, scenic and wildlife preservation, and the changing public needs of ecological preservation (Rossmann).

Another example showing expanding public trust initiatives occurred in a case decided by the Montana Supreme Court in 1984. Both the Dearborn and Beaverhead Rivers were found to be federally navigable; therefore, it was argued that a clear public right to use the streams existed. If the waters are owned by the State and held in trust for the people by the State, no private party may bar the use of those waters by the people. It was ruled that the Montana Constitution and the public-trust doctrine do not permit a private party to interfere with the public's right to recreational use of the surface of the State's waters (Montana Coalition . . . vs. Curran).

Many other examples could be cited. It is safe to say that in almost every western state, the water-right regulatory authority is now expanding its view of water allocation to include a public trust dimension. The effects on private property rights and on economic efficiency are incalculable but must be large. This is because navigation, fishing, water supply, mineral extraction, wildlife preservation, and recreation have all been recognized in public trust litigation. However, monetary valuations of many of these uses are murky at best. Where the resource itself is unpriced, its relative scarcity and the value of alternative uses seem unlikely to find reflection in the decisions taken by legislatures and the courts. Therefore, whether the conflict is joined in a legislative or judicial forum, the decision essentially will be political in nature. And, if political, public choice theory tells us much about the eventual outcome. The configuration of competing uses in terms of numbers and concentration of interests will affect the eventual allocations. If the beneficiaries of one use are few and concentrated while those from another are more

numerous, unorganized, and dispersed, then the first will almost always dominate the political bargaining that occurs (Gardner 1995, Chapters 7-9).

Hence, in the final analysis, the conflict between the public trust doctrine and the existing system of appropriative water rights revolves around the question of how long any western state can continue to wear two hats: one as a public trustee and the other as an administrator of maximum beneficial use (Dana). This conflict is not trivial, and the rate of economic growth will be substantially affected by how it is resolved. It is my view that market exchanges offer the greatest opportunities for increasing economic efficiency in water allocation. Markets should be actively promoted at all levels and in all branches of government, and in the quasi-private water and irrigation districts where transfer impediments continue to restrict water movement to higher-valued uses. Within-year trades and annual rentals, where the basic long-term property rights remain unchanged, should be encouraged, as should the permanent transfer of the water right itself, subject only to state approval that takes into account protecting the wealth positions of other water appropriators.

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