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Trading Water for Trout – An Environmental Market Story

Trout Unlimited is helping agricultural producers leave water instream to enhance fish habitat.

Environmental Concern

Nearly 4,000 miles of Montana streams are dewatered each year. This is not the result of drought, rather an inefficient method of allocation. Water allocation in the west is defined by prior appropriation where priority use was given to the first water users leaving what remained for subsequent claimants. The right is maintained by annually diverting the water for use. The right to any water left unused risks being lost. Sharing or transferring the water right was historically prohibited. While working with ranchers to enhance instream flow, Pat Byorth, a fisheries biologist turned lawyer with Trout Unlimited, began to understand the legal complexities of trout habitat. Farmers that left water instream risked losing the right and the economic value of it. To help the trout the law had to change.

Market Solution

Montana, among other states, now allows water trades and rights to instream flow. The right to transfer water through sale or lease encourages cooperation and consideration of alternative use values. Concern over lost habitat from low water on Wasson Creek in Montana, for example, led Trout Unlimited to partner with an adjacent ranch. Under the new law, rather than risk losing their water right, Mannix Brothers Ranch was able to skip late season irrigation and leave water instream. In return, the ranch was compensated to cover the lost pasture production which created a win-win deal for both fish and farmer. The emergence of environmental markets for water helps rewater the west.

Environmental Market Learning Principles

1. Environmental problems are the result of conflicting demands on scarce resources.
Resources are limited; therefore people must choose among various uses. A choice to do one thing is also a choice to not do something else.

- **What are the competing demands for the resource?**
  Western water rights emerged due to water scarcity and the competing demands for water; mostly mining, agriculture, and household uses.

2. People respond to incentives.
Incentives are the rewards and punishments defined by laws, cultural norms, regulations, property rights and other formal and informal rules of society.

- **What are the incentives driving resource use and management?**
  Historically, western water law recognized only diversion rights for industrial, agricultural, and household uses. Rights are maintained over time as long as use continues. The right to any water unused risks being lost. This use-it-or-lose-it system encourages continued diversion and discourages conservation.

3. Markets encourage mutual gains from trade.
If property rights are secure markets function well to allocate scarce resources directing them toward their highest valued use. Property rights are secure when they are well defined and enforced in a manner that allows exclusive but tradable rights and ensures accountability for impact on others.

- **What are the contractual or institutional arrangements? How do they facilitate or hinder trade? What are the potential gains from trade?**

Historic water law did not realize instream flow as a beneficial use, restricted transfer, and considered unused water rights abandoned. The system discouraged conservation and resulted in dewatered streams that devastated fish habitat. Water law has evolved to provide more secure property rights. Instream flow is now a recognized use in most states enabling agricultural users to choose to protect fish habitat without a risk of losing the water right. Allowing trade encourages cooperation among competing water users instead of the political battles that were historically necessary to change water use.

Classroom Questions

- Why is there conflict among water users under historic western water law?
  - *Historic western water law did not allow for water trades. Therefore, to move water from one use to another required a legal battle, rather than the cooperative transfers that can occur through markets.*
- What are the incentives for water use under the original prior appropriation doctrine?
  - *The original prior appropriation allocation encouraged maximum water use and discouraged conservation and instream flow. Use rights are defined as first in time first in right. The first users (and subsequent owners of that land) to divert water from the source, have priority use to the full claim. Any unused right to water risks being lost. It is a use right and historically could not be left instream or transferred.*
- What are the incentives for water conservation under the original prior appropriation doctrine?
  - *There was no incentive for water conservation. Any water right unused risked being lost. Water left in stream was considered unused.*
- What are the key characteristics of property rights and why are they important for water conservation and fish habitat?
  - *Property rights are secure when they are well defined and enforced in a manner that allows exclusive but tradable rights and ensures accountability for impact on others. Under historic western water law rights required use through diversion, which discouraged leaving water instream. Even water right holders that wanted to enhance water flow were subject to lose the right to water left instream. Because trade was not allowed, water did not move to alternative uses that became more valuable over time. Those uses include instream flow for fisheries, habitat, and recreation*
- How does water trading increase value?
  - *There are mutual gains from trade. Voluntary trade will not take place unless both parties involved in the trade perceive a positive value. Allowing for trade enables groups that see a higher valued use to negotiate with the right holder. A conservation group may buy hay for a rancher, for example, in exchange for reduced irrigation that leaves the water instream.*
- Why is there not more water trading?
  - *Water law has only recently allowed for trade in some states. Trades are complicated by the fact that the amount of water owned by many right holders has not been verified and adjudicated, so it is not well defined. Adjudicating water rights is time consuming and expensive. Furthermore, measuring water use and the impact of changing the quantity of use to other users is difficult. Transferring that information among interested parties is costly. New technologies are helping lower the costs of defining rights, measuring quantity, and the impact of changing uses. Water brokers have begun to emerge bringing legal knowledge and water quantity evaluation to the table, lowering the costs of trade.*

Supplemental Reading:

- Anderson, Terry L., Brandon Scarborough, and Reed Watson. 2012. "Tapping Water Markets." Routledge Press. New York, NY.
- Bennett, Alex, Lillian Burns, Adrial Leon, Martin Merz, and Patricia Song. "Factors Influencing the Expansion of Environmental Water Markets." Poster. http://www.esm.ucsb.edu/research/2016Group_Projects/documents/EnvMarketPoster_Final.pdf
- Donohew, Zachary. 2009. "Property rights and western United States water markets." *The Australian Journal of Agricultural and Resource Economics*, 53, pp. 85–103
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- Shaw, Jane. 2007. "Water Leasing in Montana Through Trout Unlimited Eye's." PERC Reports. Summer. https://www.perc.org/articles/water-leasing-montana-through-trout-unlimiteds-eyes