



Smart Markets for Water Resources

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Commercial water users often want to trade water, but their trades can hurt other users and the environment. So government has to check every transaction. This checking process is slow and expensive. That's why "free market" water trading doesn't work, especially with trading between a single buyer and a single seller.

This talk will describe a water trading mechanism designed to solve these problems. The trading mechanism is called a "smart market". A smart market allows simultaneous many-to-many trades. It can reduce the transaction costs of water trading, while improving environmental outcomes.

The smart market depends on a combination of recent technologies: hydrology simulation, computer power, and the Internet. Our smart market design uses standard hydrological models, user bids from a web page, and computer optimization to maximize the economic value of water while meeting all environmental constraints.

Before the smart market can be implemented, however, users and the water agency must meet six critical prerequisites. These prerequisites may be viewed as simply good water management that should be done anyway. I will describe these prerequisites, and I will briefly discuss common arguments against water markets.

This talk will be an abstract of a forthcoming book, "Smart Markets for Water Resources: A Manual for Implementation," by John F. Raffensperger and Mark W. Milke, from Springer Publishing.