

Water Use, Sharing, and Willingness to Pay: A Survey of Western Households

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Abstract. Municipal water demand is increasing in the West due to rapid population growth and urbanization. Agricultural water is a preferred source for meeting these growing demands, yet permanent rural-to-urban transfers can have devastating effects on the community of origin. Thus, alternative reallocation mechanisms are sought. The goals of this study are to 1) gauge public preferences regarding water use, water-sharing alternatives, agriculture, and rural communities; 2) gauge public knowledge about these issues; and 3) estimate the public's willingness to pay (WTP) a water fee in support of one or more of eight programs related to water conservation and reallocation. This information will help stakeholders and decision-makers identify those water programs that would likely receive the most public support and funding, and identify which water topics would benefit most from an educational program.

Methods

An Internet survey was sent to a random sample of households in the western U.S., where water is a particularly important topic due to limited supplies and rapid population growth. A Likert scale was used to assess public knowledge and sentiment, while the dichotomous choice format was used to assess WTP. A binary logit identifies determinants of WTP, while Cameron's (1988) method is used to derive mean WTP for each program.

Some Results

Water Knowledge

Survey results reveal a lack of familiarity with several water terms and a discrepancy between perceived and actual water usage, pointing to a need for water education in the West.

Water Scarcity: Perceptions and Policy

A majority believe that water resources will be scarce in the next 25 years. The top-ranked strategies for increasing *short-term* water supplies were restricting the amount of water on lawns and landscapes (45% of respondents) and restricting the amount of water on public landscapes (36%). The top-ranked strategies for increasing *long-term* water supplies were building reservoirs (30%) and re-using waste water on lawns and landscapes (18%). The top-ranked funding options were increasing water rates for households that use more water (30%) and increasing fees on new homes and developments (15%).

Willingness to Pay a Water Fee during the Summer Months

Just over half of respondents were willing to pay a fee on their monthly water bill, with an overall mean WTP of \$19.15. WTP was highest for creation of a water re-use system for public landscapes (\$3.25), followed by keeping irrigated farms in production (\$3.10) and reducing household water consumption (\$3.02). Setting aside water for recreation garnered the least financial support (\$1.03).

References

Cameron, T., "A New Paradigm for Valuing Nonmarket Goods Using Referendum Data: Maximum Likelihood Estimation by Censored Logistic Regression." *Journal of Environmental Economics and Management*, 15: 355-379, 1988.