Geophysical Research Abstracts
Vol. 17, EGU2015-15507, 2015
EGU General Assembly 2015

Meeting multiple demands: Water transaction opportunities for environmental benefits promoting adaptation to climate change

Amy McCoy
Office of Arid Lands Studies, University of Arizona, Tucson, Arizona, U.S.A. (amccoy74@gmail.com)

In arid regions, the challenge of balancing water use among a diversity of sectors expands in lock step with conditions of water stress that are exacerbated by climate variability, prolonged drought, and growing water-use demands. The elusiveness of achieving a sustainable balance under conditions of environmental change in the southwestern United States is evidenced by reductions in both overall water availability and freshwater ecosystem health, as well as by recent projections of shortages on the Colorado River within the next five years. The water sustainability challenge in this region, as well as drylands throughout the world, can therefore be viewed through the lens of water stress, a condition wherein demands on land and water—including the needs of freshwater ecosystems—exceed reliable supplies, and the full range of water needs cannot be met without tradeoffs across multiple uses. Water stress influences not only ecosystems, but a region's economy, land management, quality of life, and cultural heritage—each of which requires water to thrive. With respect to promoting successful adaptation to climate change, achieving full water sustainability would allow for water to be successfully divided among water users—including municipalities, agriculture, and freshwater ecosystems—at a level that meets the goals of water users and the governing body. Over the last ten to fifteen years, the use of transactional approaches in the western U.S., Mexico, and Australia has proven to be a viable management tool for achieving stream flow and shallow aquifer restoration. By broad definition, environmental water transactions are an equitable and adaptable tool that brings diverse stakeholders to the table to facilitate a fair-market exchange of rights to use water in a manner that benefits both water users and the environment. This talk will present a basic framework of necessary stakeholder engagement, hydrologic conditions, enabling laws and policies, pertinent tools and techniques, and potential ecological outcomes that are essential components of environmental water transactions in the western United States. The overarching goal of the presentation seeks to explore ways in which environmental transactions can contribute to the protection and restoration of streams and shallow aquifers in arid and semi-arid regions across the globe.