

The Effect of Prior Appropriation and Water Right Portfolios on Agricultural Land-Allocation Discussions

Kelly Cobourn
Assistant Professor
Department of Forest Resources and
Environmental Conservation
Virginia Tech

Abstract

The doctrine of prior appropriation, used throughout the western United States to administer water rights based on seniority, introduces heterogeneity in the risk of a water shortage among otherwise similar agricultural irrigators. This heterogeneity in risk may give rise to inefficiencies by constraining the land-allocation decisions of irrigators with less secure property rights. Using a parcel-scale dataset of spatially referenced surface water rights for the Eastern Snake River Plain in Idaho, we find empirical evidence that those farms with the most secure (senior) rights earn an annual profit premium of up to 2.7 percent, largely due to less extensive land fallowing than their junior counterparts. Ownership of a portfolio of rights that diversifies across seniority carries a small profit premium but does little to offset this seniority effect. However, access to correlative water rights, such as those held by irrigation districts, increases annual profit by up to 7 percent and offsets the seniority premium by 87 percent. This is likely due to several reasons, including access to informal water trading mechanisms within correlative rights systems.