

# **Quantifying the Scope and Impact of Permanent Agricultural Dry-Up Due to Rural to Urban Water Transfers**

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## Abstract:

Water rights transfers from agriculture to municipal uses is a primary way urban areas meet growing water demand across the American West. These transfers typically result in the permanent dry-up of previously irrigated agricultural land and ultimately have a significant impact on the economic viability of rural communities as well as the ecological integrity of surrounding landscapes. Despite concerns about permanent agricultural dry-up, the scale of the issue has not been well documented and the underlying processes and resulting impacts are not well understood. This project seeks to develop an integrated, multidisciplinary approach for understanding the scale of permanent agricultural dry-up and how the land conversion process occurs over time. Specifically, the researchers will pilot an approach in the South Platte Basin that leverages remotely sensed data and an automated data processing method to identify farms that have experienced agricultural dry-up, track their land-use trajectories between 1972 and 2016, document the institutional processes (e.g., legal mechanisms and barriers, timing of rights being transferred and dry-up, municipal policies), and model the economic consequences of these changes at the basin scale.