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**REMOTE SENSING OF CONSUMPTIVE USE IN THE WALKER RIVER BASIN, NEVADA**

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**ABSTRACT:** Walker Lake is a terminal lake in western Nevada whose surface elevation has steadily declined over the last century as inflow from the Walker River has been appropriated for upstream use. Beginning in 2010, upstream water rights have been purchased to increase flow to Walker Lake as part of the federal Desert Terminal Lakes Program (Public Law 110-234). The Nevada State Engineer's office is implementing new approaches to help manage these unconventional water right transfers, including the use of space borne remote sensing techniques to quantify agricultural consumptive use in the Walker River basin. Consumptive use through evapotranspiration (ET) is one of the most uncertain variables in Walker Basin hydrologic models. The Nevada State Engineer's office is using METRIC (Mapping Evapotranspiration at High Resolution with Internalized Calibration) to improve estimates of actual ET from agricultural lands. Resulting field-scale ET maps provide valuable hydrologic data to aid the process of water rights administration. Specific applications are to estimate ET by crop and by season, calibrate basin water budgets, and monitor impacts and effects of water right transfers from agricultural use to Walker Lake.

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