

## Draft Delta Plan Performance Measure Fact Sheet

**Delta Plan Chapter:** Chapter 3 – A More Reliable Water Supply for California

**Performance Measure 3.33:** Recover and Manage Critically Overdrafted Basins

**Expectation:** A decrease in the overall rate of groundwater depletion in critically overdrafted basins.

**Rationale:** Groundwater utilization for water supply in the Central Valley varies year-to-year dependent on the availability of surface water. Drought years are periods of increased groundwater pumping and use, and wet years show decreased reliance on ground water. Decreasing the overall rate of groundwater depletion leads to a more reliable and sustainable groundwater resource.

**Metrics:** 1. Regional rates of groundwater depletion in the Central Valley can be estimated using gravimetric techniques using satellite-based sensors (Famiglietti et al. 2011, Richey 2015).  
2. Groundwater elevations in long-term monitoring wells can be monitored for individual catchments within the Sacramento and San Joaquin drainage basins (Faunt and Snead 2015).

**Baseline/Reference Conditions:** Regional groundwater estimates for California's Central Valley using satellite-based gravimetric sensors are available back to October of 2003 (Famiglietti et al. 2011). California Department of Water Resources has a network of long-term wells in the San Joaquin Valley (3124 wells) and Sacramento Valley (599 wells) that will be used to assess sub-basin groundwater trends.

**Methodology:** Both annual rates of change estimates for Central Valley aquifer depletion and long-term groundwater monitoring networks in specific catchments will be analyzed. Annual changes will be assessed and linked to water year type for comparison. Both large scale measurements of groundwater depletion and well networks in sub-basins will be used to assess the rates of groundwater use.

### References:

Famiglietti, J.S., M. Lo, S.L. Ho, J. Bethune, K.J. Anderson, T.H. Syed, S.C. Swenson, C.R. de Linage, and M. Rodell. 2011. Satellites measure recent changes of groundwater depletion in California's Central Valley. *Geophysical Research Letters* 38:L03403, doi: 10.1029/2010GL046442.

Richey, A.S. 2015. Moving from aquifer stress to sustainable management with remote sensing and local knowledge. *San Francisco Estuary and Watershed Science* 13(3): doi: <http://dx.doi.org/10.15447/sfews.v13iss3art3>.

Faunt, C.C. and M. Snead. 2015. Water availability and subsidence in California's Central Valley. *San Francisco Estuary and Watershed Science* 13(3): doi: <http://dx.doi.org/10.15447/sfews.v13iss3art4>.