

2023 Report: Submitted by UC Davis to Siskiyou County, March 29, 2023 - differs from the 2022 report only in the numbers indicated in red

Water Year **2022** -----

A - Groundwater Level

Is water level data submitted to the CASGEM Program?	Yes
Does this watermaster collect or receive additional groundwater levels	No
Comments	A statistical summary of water level data from an extensive private monitoring program is available at http://groundwater.r.ucdavis.edu/Research/ScottValley/

B - Groundwater Use

Reporting year	From 10/1/2021 To 09/30/2022		
Total Groundwater Extraction (acre-feet)	30000		
Method used to determine extraction:	Volume	Explanation	Uncertainty
groundwater model	30000	Groundwater pumping in the range of 39,000 - 45,000 af represent the entire Scott Valley groundwater basin (DWR Basin 1-5). These values are based on the estimated average annual pumping in 1991-2011, including approximately 1,000 acft of groundwater pumping for urban/domestic water use. The latter was estimated based on the basin population reported by DWR (https://gis.water.ca.gov/app/bp-dashboard/final/) and assuming an average annual water use of 1 acre-foot per 3.5 persons. The lower number is based on the current soil water budget model used by the UC Davis Scott Valley Intergrated Hydrologic Model, and the high number is based on the soil water budget model published by Foglia et al., 2013a,b, available at http://groundwater.ucdavis.edu/Research/ScottValley/ . In water year 2022, groundwater pumping was reduced by 30% relative to typical pumping (e.g., 2020), through Local Cooperative Solutions (LCS) developed under the SWRCB Drought Emergency Order for Scott Valley.	medium
other method			
Groundwater extraction by water use sector (if available)			
urban	1000	estimated based on population	medium
agricultural	29000	estimated based on model (see comment above)	medium

C- Surface Water Use

Reporting year	From 10/1/2021 to 09/30/2022		
Surface water supply (acre-feet)	Volume	Explanation / Methods used	Uncertainty
Method used to determine	26000	Surface water use of 24,000 - 28,000 af represent the entire Scott Valley groundwater basin (DWR Basin 1-5). These values are based on the estimated average annual surface water irrigation amount in 1991-2011. The range is based on the current calibration of the soil water budget model used by the UC Davis Scott Valley Intergrated Hydrologic Model, and includes the estimate from the soil water budget model published by Foglia et al., 2013a,b, available at http://groundwater.ucdavis.edu/Research/ScottValley/ . A drought emergency curtailment order was in effect for the entire water year. The reduction of surface water use relative to 2020 (another dry year) is currently not known and has not been included in the estimate at this time.	low
Water available for recharge or in-liey use by source type	Volume	Explanation / Methods used	Uncertainty
local surface deliveries	unknown		

D- Total Water Use

Reporting year	From 10/1/2021 To 09/30/2022
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Total water use (acre-feet)	56000	sum of groundwater use and surface water use described in B and C (above)	medium
Methods used to determine / explanation	sum of groundwater use and surface water use described in B and C (above)		

E - Change in GW Storage

Reporting year	From 10/1/2021 To 09/30/2022		
Change in storage (acre-feet)	Volume	Explanation / Methods used	Uncertainty
	0	In the private monitoring well network (13 wells), water levels measured in March of 2022 were, on average, 0.1 feet higher than during the same period in 2021 indicating an overall stability in groundwater storage (see water level report at http://groundwater.ucdavis.edu/Research/ScottValley/). In DWR's Water Data Library, two wells have water levels documented for both, spring 2021 and spring 2022. Between spring 2021 and spring 2022 water levels in these two wells decreased by 4.7 feet, on average (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels ; accessed February 9, 2022). These two wells were not considered to compute groundwater storage change between 2021 and 2022. The current UC Davis Scott Valley Integrated Hydrologic Model (https://doi.org/10.1029/2018WR024209) was used to determine the relationship between water levels at the original 32 locations of the private monitoring well network and total groundwater storage in the Scott Valley aquifer, which extends over approximately 50,000 acres of alluvium, for the period from 10/1/1990 to 9/30/2011. Based on simulated annual change in storage and simulated water levels at the location of the original 32 private monitoring wells, it was estimated that the average total annual groundwater storage change is between 3 thousand and 5 thousand acre-feet for each one foot change in average water levels in the monitoring well network during January through March. The statistical uncertainty of the estimated storage change of zero acft is +/-2.5 thousand acre-feet.	medium