

# Yuba Subbasins Water Management Plan: A GROUNDWATER SUSTAINABILITY PLAN ANNUAL REPORT

FACT SHEET FOR WATER YEAR 2021

## OVERVIEW AND PURPOSE

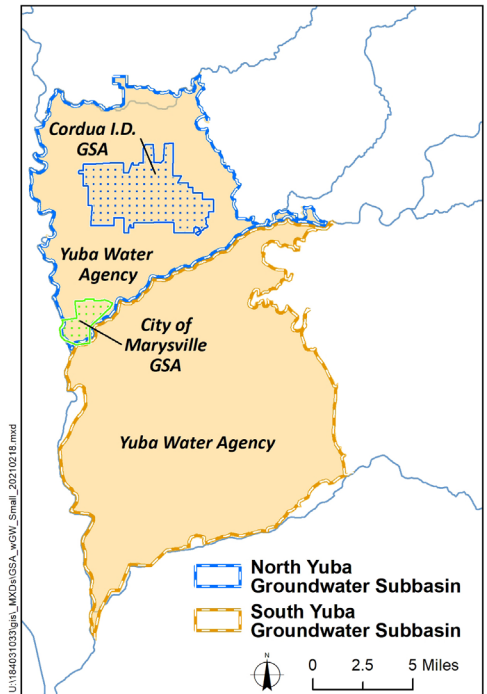
The Annual Report for Water Year (WY) 2021 evaluates groundwater conditions for the period October 2020 through September 2021. This evaluation is made relative to thresholds defined in the *Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan (GSP)*, adopted in 2020 by three Groundwater Sustainability Agencies (GSAs): Yuba Water Agency, Cordua Irrigation District, and City of Marysville. The Annual Report includes comparisons of WY 2021 groundwater conditions to the thresholds, termed sustainable management criteria, contained in the GSP. Water use data from WY 2021 and progress toward implementation of projects and management actions identified in the GSP are documented in the Annual Report.

The Annual Report satisfies the requirements for GSP annual reports under the Sustainable Groundwater Management Act (SGMA). In addition, it contains information beyond what is required by SGMA to meet local needs for continued sustainable management and to provide continuity with the annual monitoring and measuring report associated with the previous groundwater management plans.

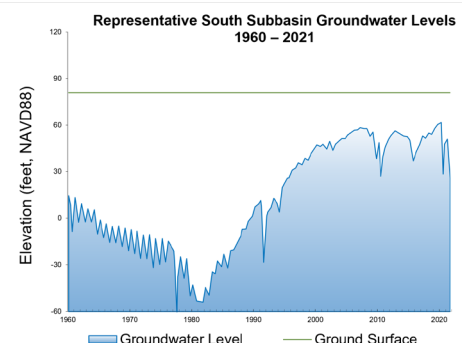
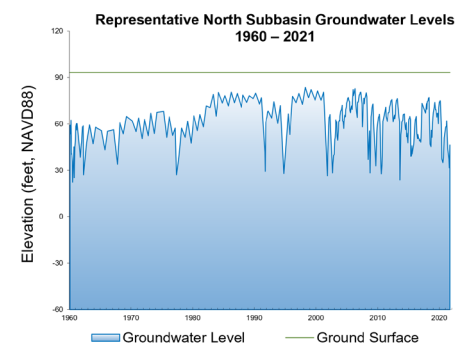
## HYDROLOGIC CONDITIONS, WATER USE, AND CHANGE IN GROUNDWATER STORAGE

During WY 2021, the recorded precipitation in Yuba County was 7.16 inches, representing 35.1% of long-term average precipitation (WY 1948 – 2021), as measured at Marysville. Yuba River flow at Smartsville for the same period was 600,000 acre-feet, representing about 24% of the long-term average flow (WY 1901 – 2021) at that location. WY 2021 is designated as a Critical year, according to DWR’s Sacramento River Water Year Index.

During WY 2021, groundwater use is estimated at 62,650 AF for the North Yuba Subbasin and 155,860 AF for the South Yuba Subbasin (110% and 146% of average since 2013, respectively). This compares to recent annual groundwater use (since 1990) in the North Yuba Subbasin between 39,000 (in 2012) and 90,000 AF (in 2001) and in the South Yuba Subbasin between 69,000 (in 2019) and 160,000 AF (in 1991). Surface water use during WY 2021 is estimated at 148,420 AF for the North Yuba Subbasin and 73,760 AF for the South Yuba Subbasin (120% and 78% of average since 2013, respectively).



*The Yuba Water Agency, Cordua Irrigation District, and City of Marysville GSAs work cooperatively to manage groundwater resources in the Yuba groundwater subbasins.*



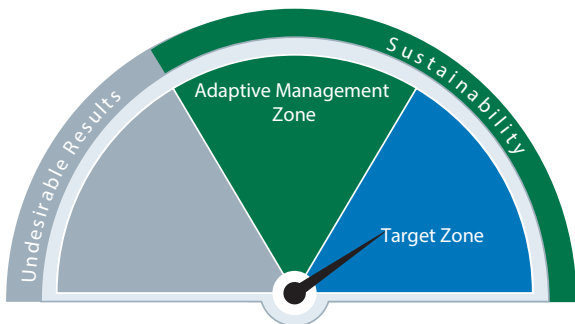
*Groundwater levels in Yuba County continue to remain at or near historically high levels. Notable periods of groundwater level decline include GWS transfer years (2008-10, 2013, 2014, 2018, and 2020) and periods of drought (1976-77, 1986-92, 2007-09, 2012-16, and 2020-21).*

In the North Yuba and South Yuba subbasins, surface water accounts for the majority of total water use except during groundwater substitution (GWS) transfer years and years with shortages in surface water supplies. A small GWS transfer was performed by Plumas Mutual Water Company totaling 2,371 AF during WY 2021. Additionally, deficiency pumping occurred in WY 2021 totaling approximately 79,300 AF across the Yuba Subbasins. Deficiency pumping occurs during select years due to shortages in surface water supplies, where Member Units pump groundwater to meet crop water demands.

Based on estimates using the Yuba Groundwater Model (YGM), from beginning to end of WY 2021, the North Yuba Subbasin saw a decrease of groundwater in storage of approximately 8,000 AF and the South Yuba Subbasin saw a decrease in storage of approximately 81,000 AF. Though groundwater in storage decreased in the Yuba Subbasins during WY 2021, cumulative change in storage since WY 1961 was approximately -19,000 AF and +151,000 AF by WY 2021 in the North Yuba and South Yuba Subbasins, respectively. This represents long-term sustainable conditions in the North Yuba Subbasin and long-term improvements in conditions in the South Yuba Subbasin.

### SUSTAINABLE MANAGEMENT CRITERIA AND WY 2021 CONDITIONS

The GSP defines sustainable management criteria for four relevant sustainability indicators: chronic lowering of groundwater levels, degraded water quality, land subsidence, and depletions of interconnected surface waters. WY 2021 conditions are compared to these criteria below.



#### GROUNDWATER LEVELS

Representative Sites Meeting Each Criteria

Criteria	North Yuba	South Yuba
Minimum Threshold	100%	100%
Local Management Level	92%	100%
Measurable Objective	69%	89%
Full Aquifer Level	15%*	33%*

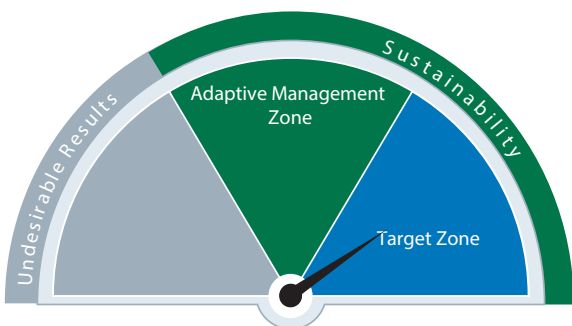
\*Groundwater levels are not expected to be at or above the Full Aquifer Level during each year.

#### CHRONIC LOWERING OF GROUNDWATER LEVELS AND DEPLETIONS OF INTERCONNECTED SURFACE WATER

Groundwater level data were collected at 13 representative monitoring wells in the North Yuba Subbasin and 18 representative monitoring wells in the South Yuba Subbasin during WY 2021. Comparing March 2021 measurements to established sustainable management criteria, groundwater levels were above the minimum threshold and local management level at all representative monitoring wells (higher levels are better for groundwater levels), with the exception of one well located in the North Yuba Subbasin below its local management level by 1 foot. Groundwater levels were above the measurable objective at 9 wells in the North Yuba Subbasin and 16 wells in the South Yuba Subbasin. Groundwater levels were at or above the historically full aquifer levels at 2 wells in the North Yuba Subbasin and 6 wells in the South Yuba Subbasin. **Conditions are within the target zone for sustainability for groundwater levels and for depletions of interconnected surface water, which are managed using groundwater levels as a proxy.**

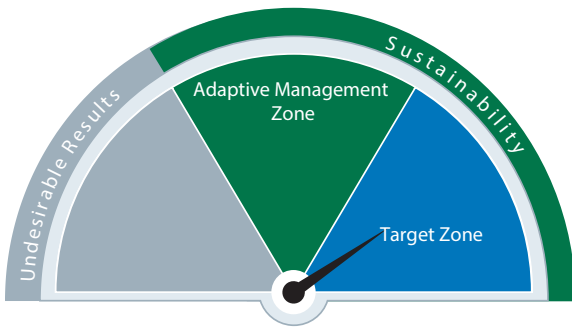
#### DEGRADED WATER QUALITY

Yuba Water has obtained access agreements for three of the nine wells in the representative water quality monitoring network historically monitored by DWR's North Central Region Office, as DWR is in the process of re-assessing its water quality monitoring program. Samples were collected to measure electrical conductivity in July 2020 at two wells (16N04E27F002M and 13N04E02A002M) and September 2020 at one well (16N04E34E001M). Results indicate electrical conductivity is below the minimum threshold and measurable objective at all three wells during WY 2020 (most recent data, samples collected on a biennial schedule and next planned for 2022). **Based on historical trends, conditions are within the target zone for sustainability.**



#### GROUNDWATER QUALITY

Work is continuing to consider revising the representative monitoring network, potentially using a subset of the wells currently monitored by Yuba Water Agency for groundwater levels.



### LAND SUBSIDENCE

#### Representative Sites Meeting Each Criteria

	North Yuba	South Yuba
Minimum Threshold	100%	100%
Measurable Objective	100%	100%

### LAND SUBSIDENCE

The land subsidence monitoring network uses 19 of the monuments that make up the Sacramento Valley Subsidence Network developed jointly by DWR and the U.S. Bureau of Reclamation, where eleven of the monuments lie within the Yuba Subbasins and eight lie just outside but still provide important data. The minimum threshold and measurable objective at each monument have been established as 0.5 and 0.25 feet of subsidence, respectively, per 5-year period. From 2008 to 2017, a minimum of 0.015 feet and a maximum of 0.160 feet of elevation decrease was observed at the monuments in and around the Yuba Subbasins over a 9-year period. **Thus, conditions relative to subsidence within the Yuba Subbasins continue to be sustainable.**

Based on communications with DWR, the next Sacramento Valley Subsidence Network survey will occur in 2022. Pending data availability, survey results will be included and compared against established sustainability management criteria in the WY 2022 Annual Report.

### IMPLEMENTATION PROGRESS

On November 18, 2021, DWR completed its evaluation of the Yuba Subbasins GSP and approved the GSP. Proposed recommended corrective actions were provided by DWR and the Yuba Subbasins will give DWR's recommended corrective actions due consideration for the next GSP assessment due to DWR in 2025.

As other Sacramento Valley subbasins developed and finalized their GSPs throughout WY 2021, Yuba Water Agency representatives met separately with representatives in the North American Subbasin in WY 2021 and representatives from the Sutter Subbasin in early WY 2022 to continue interbasin coordination activities and work collaboratively to ensure continued sustainable water management in the Sacramento Valley.

The Yuba Subbasins are sustainably managed under current conditions. During GSP implementation, the GSAs will continue with annual reporting and monitoring. Projects, management actions, and adaptive management activities identified in the GSP will be implemented on an as needed basis. Several technical studies and field efforts are scheduled to be completed prior to the end of WY 2022 supported by grant funding and cooperative efforts with DWR.