

UVRGA GSP Implementation Water Year 2024

Annual Data Memorandums

UVRGA Board Meeting February 2025



Annual Data Memorandums

- Groundwater Levels
- Visual Streamflow Monitoring
- Camino Cielo Flow Monitoring
- Riparian GDE Monitoring
- Aquatic GDE Monitoring
 - Presented at February '26 meeting

Available on UVRGA website at
<https://uvrgroundwater.org/sgma-overview/>



Groundwater Levels

Overview

Data Collected:

- Manual water levels
- Continuous pressure transducer data

Reason Collected:

- Chronic lowering of groundwater levels and groundwater storage SMC

Monitoring Network Updates:

- Two wells were added to the monitoring network during the 2025 Water Year
 - City of Ventura observation well OW-2
 - Casitas Mutual Water Company's state well no. 03N23W05H01S

Groundwater Level Monitoring Well Locations

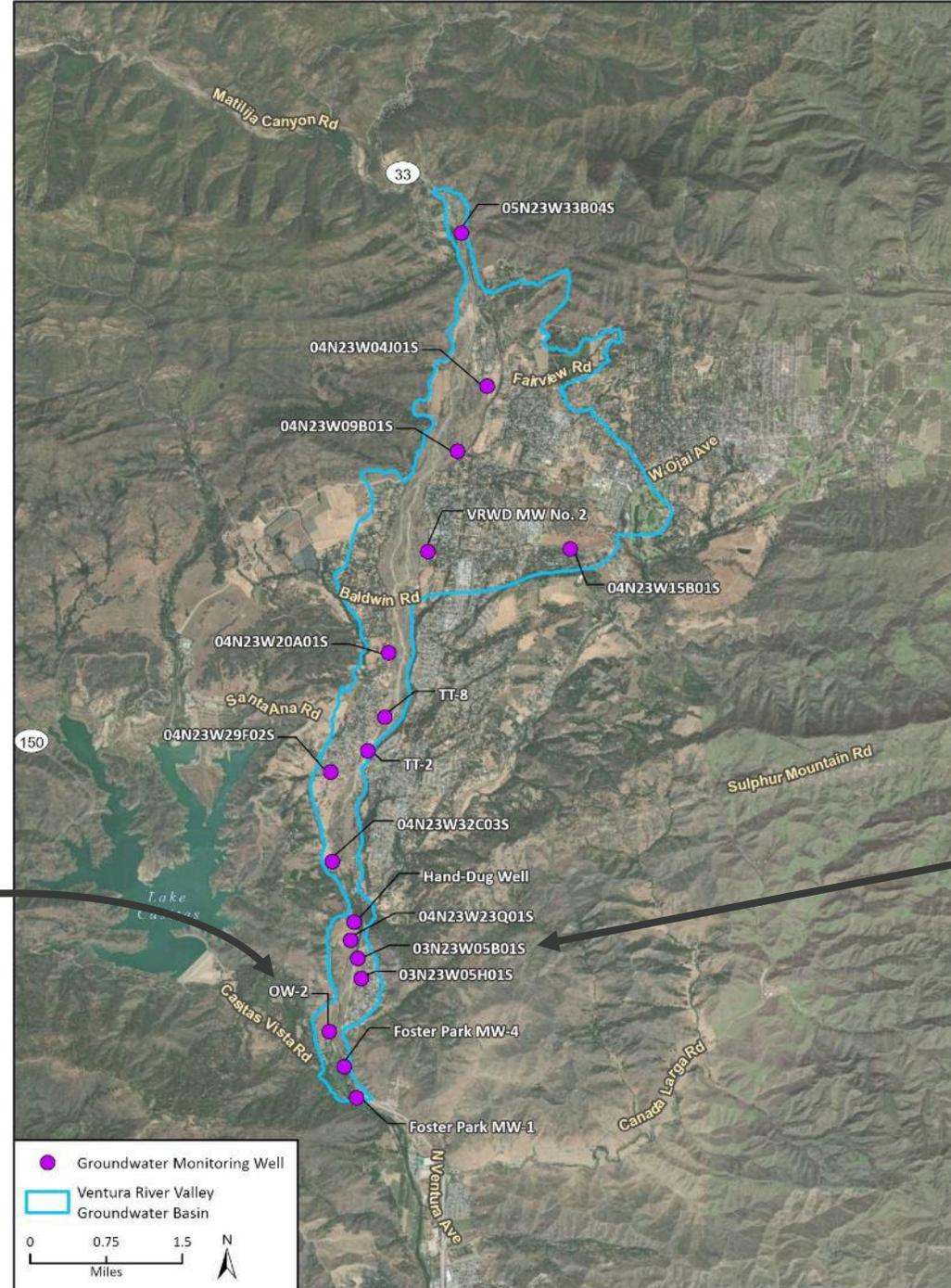
17 Locations

- 14 equipped by UVRGA
- 3 equipped by owner

*All GSP Data Gaps
Have Been Filled*

OW-2

Added November 2024



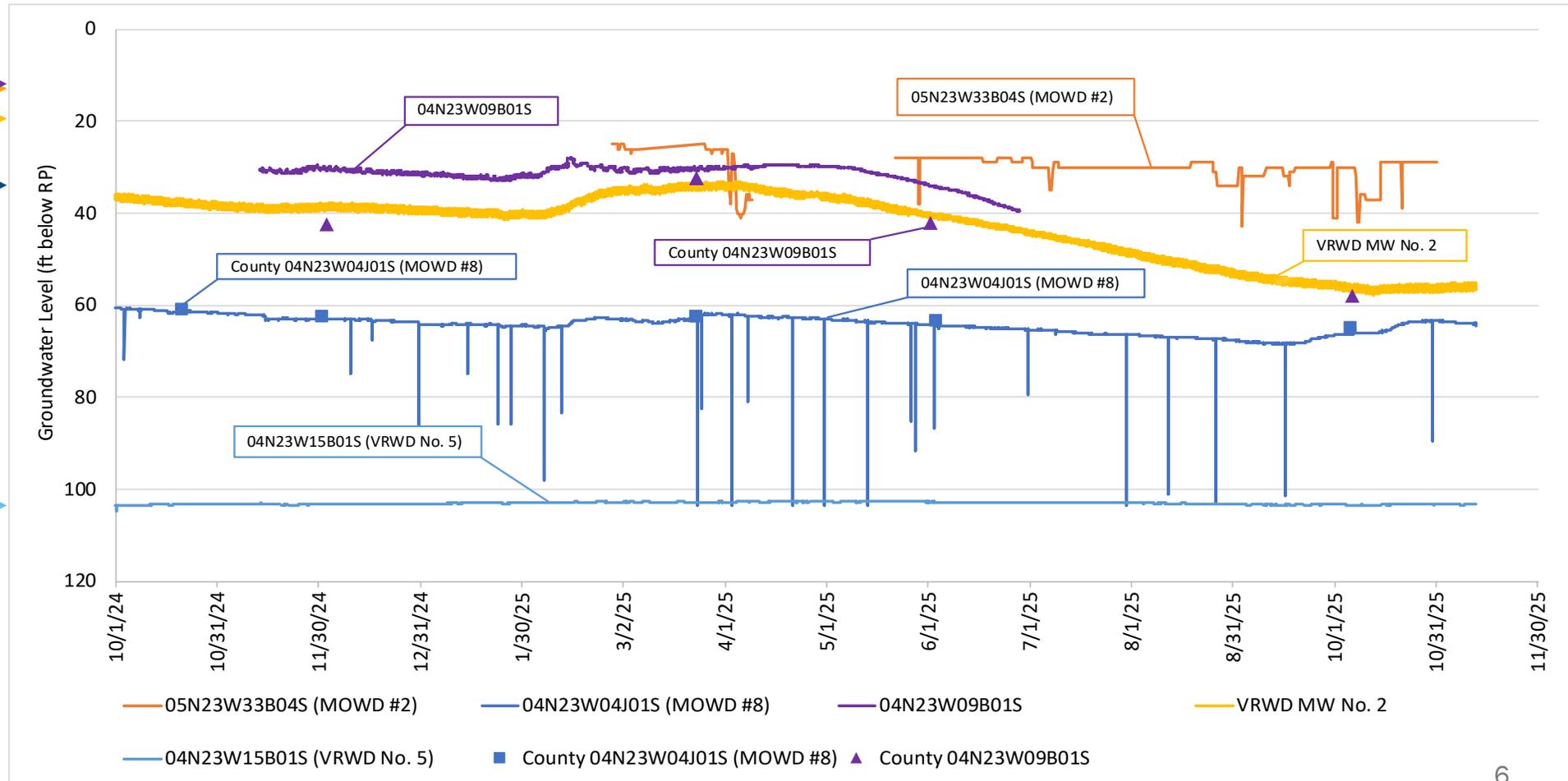
03N23W05B01
Added November 2025

Depth to Groundwater – Kennedy, Miramonte/Meiners Oaks, and Robles Hydrogeologic Areas

Full Basin Water Levels (for reference)



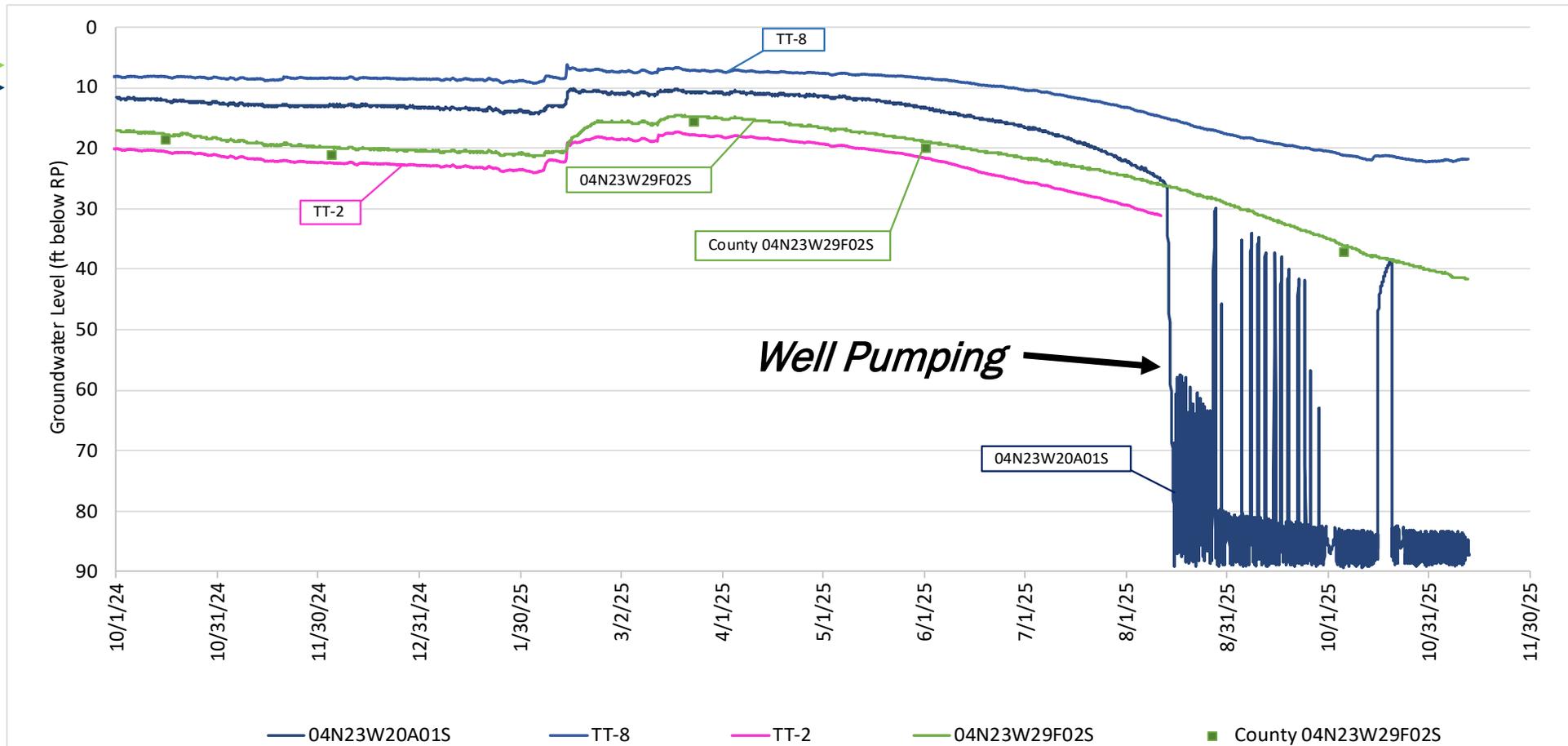
Note: VRWD No. 5 is not screened in river alluvium. Minimal response to river flow.



Reference values are approximate.

Depth to Groundwater – Santa Ana Hydrogeologic Area

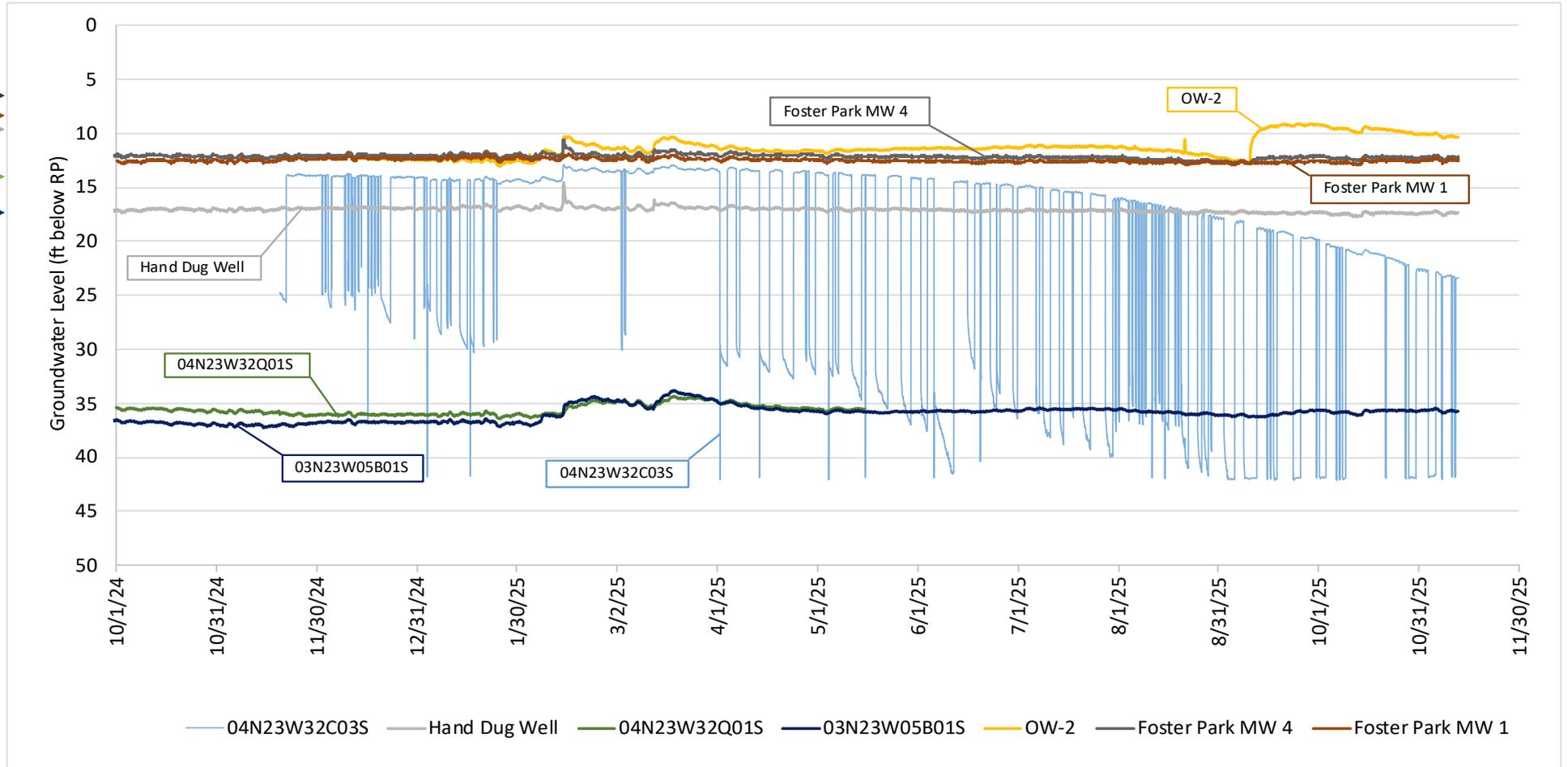
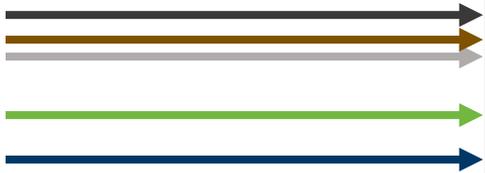
*Full Basin Water Levels
(for reference)*



Reference values are approximate.

Depth to Groundwater – Casitas Hydrogeologic Area

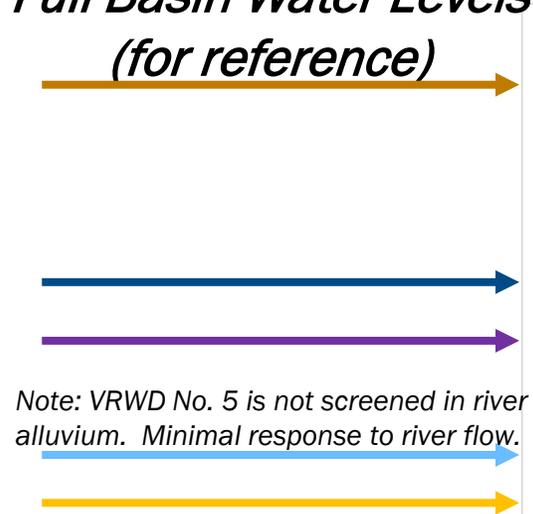
*Full Basin Water Levels
(for reference)*



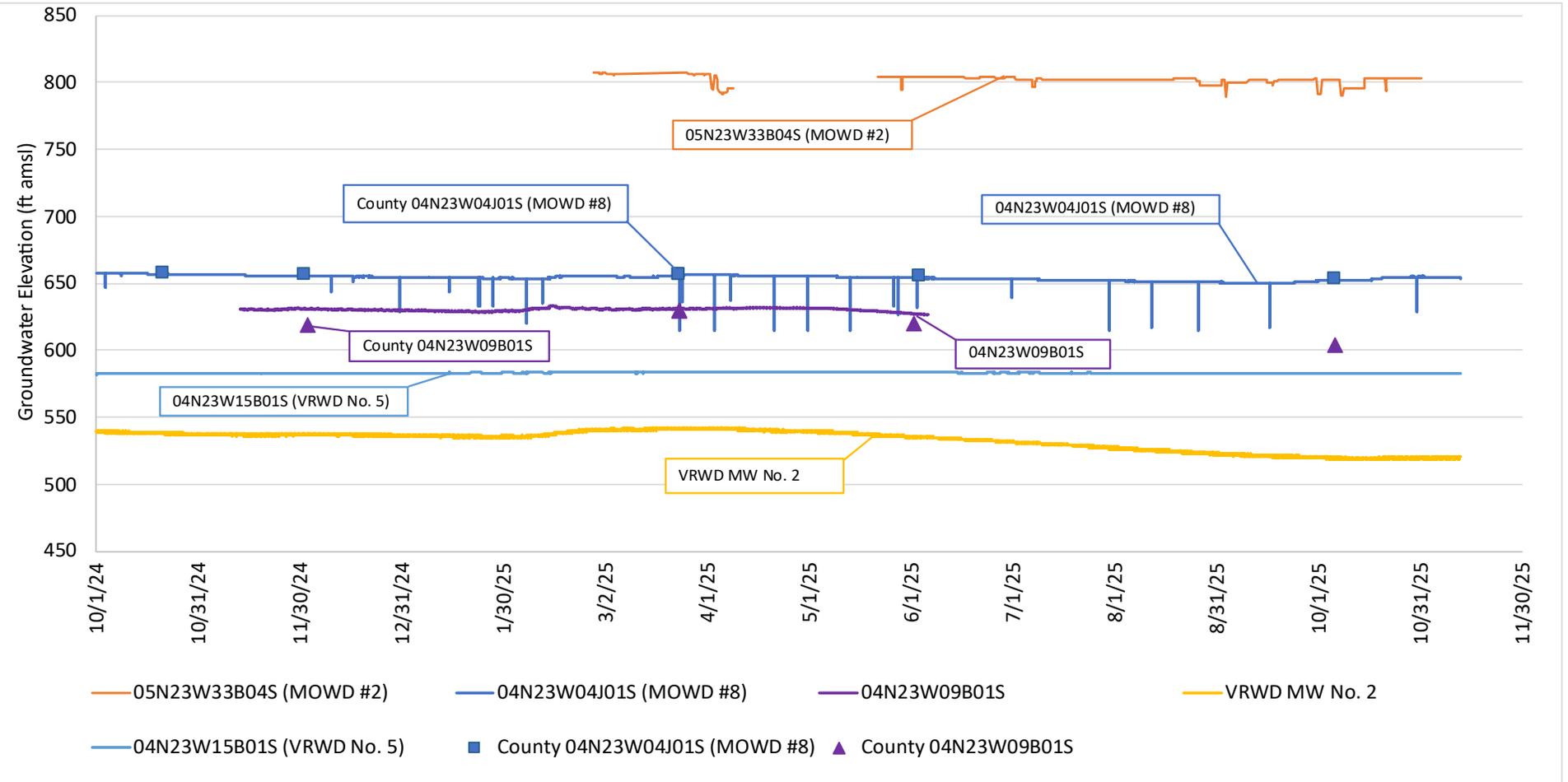
Reference values are approximate.

Groundwater Elevations – Kennedy, Mira Monte/Meiners Oaks, and Robles Hydrogeologic Areas

Full Basin Water Levels (for reference)



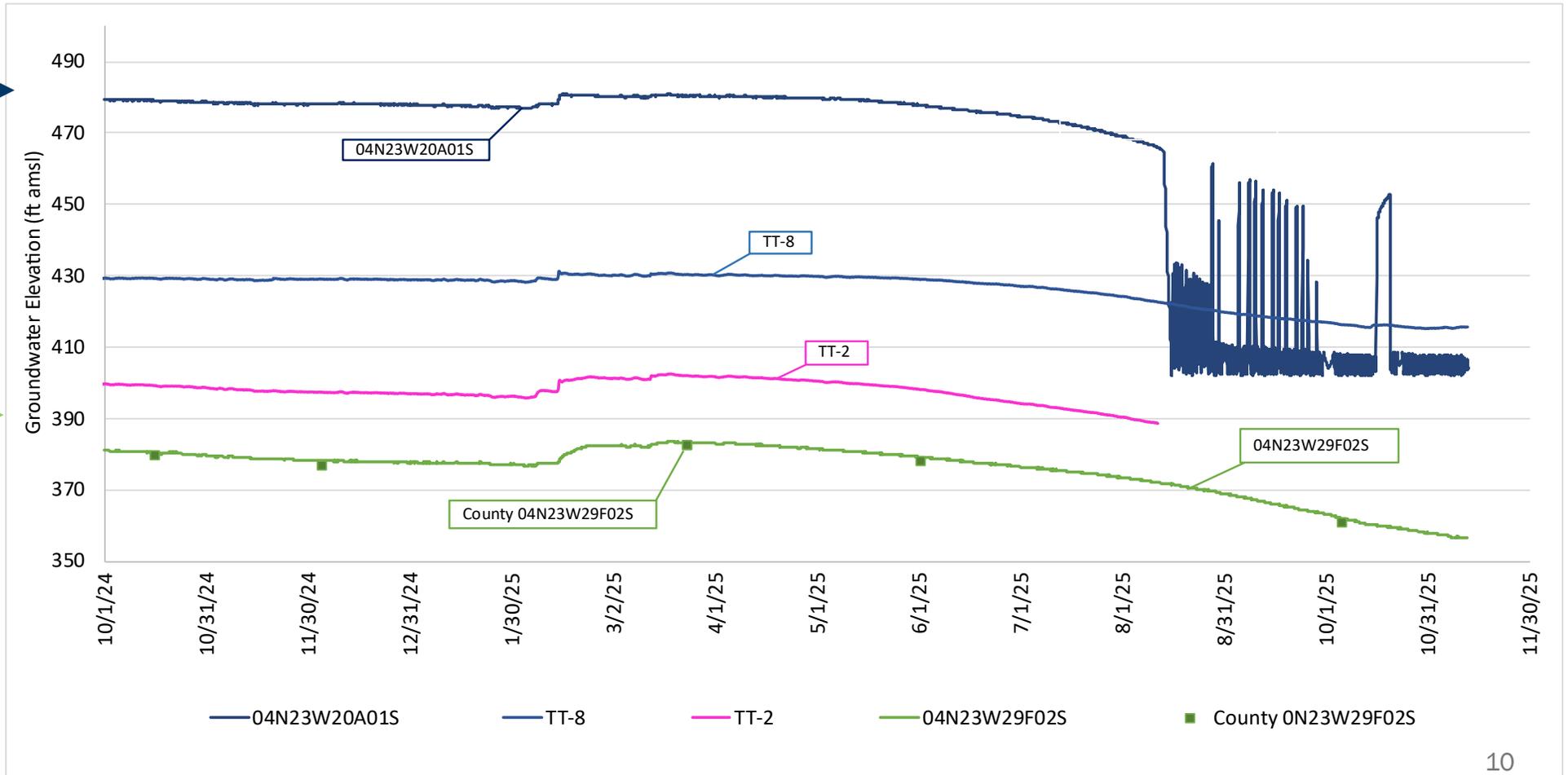
Note: VRWD No. 5 is not screened in river alluvium. Minimal response to river flow.



Reference values are approximate.

Groundwater Elevations – Santa Ana Hydrogeologic Area

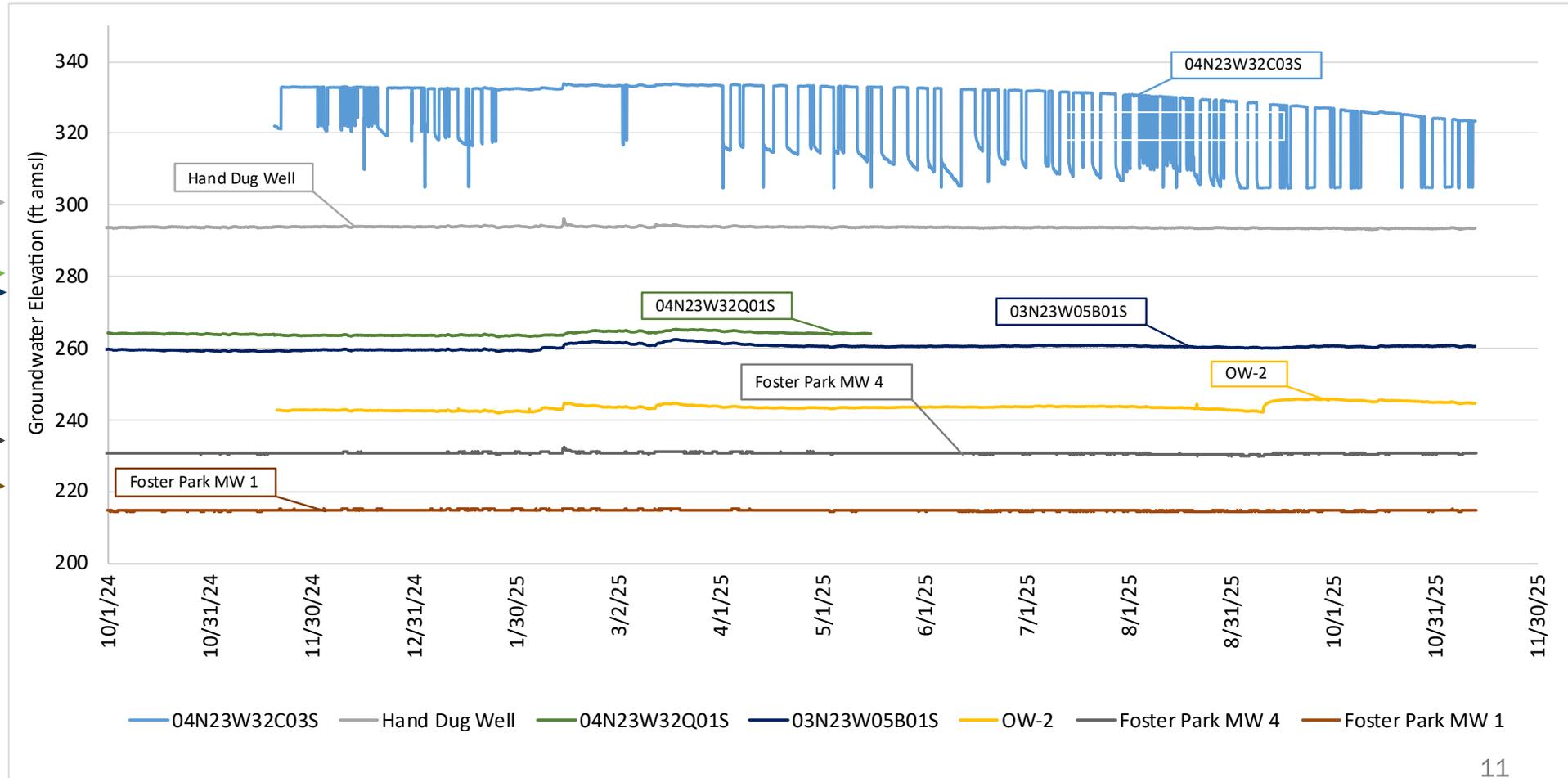
*Full Basin Water Levels
(for reference)*



Reference values are approximate.

Groundwater Elevations – Casitas Springs Hydrogeologic Area

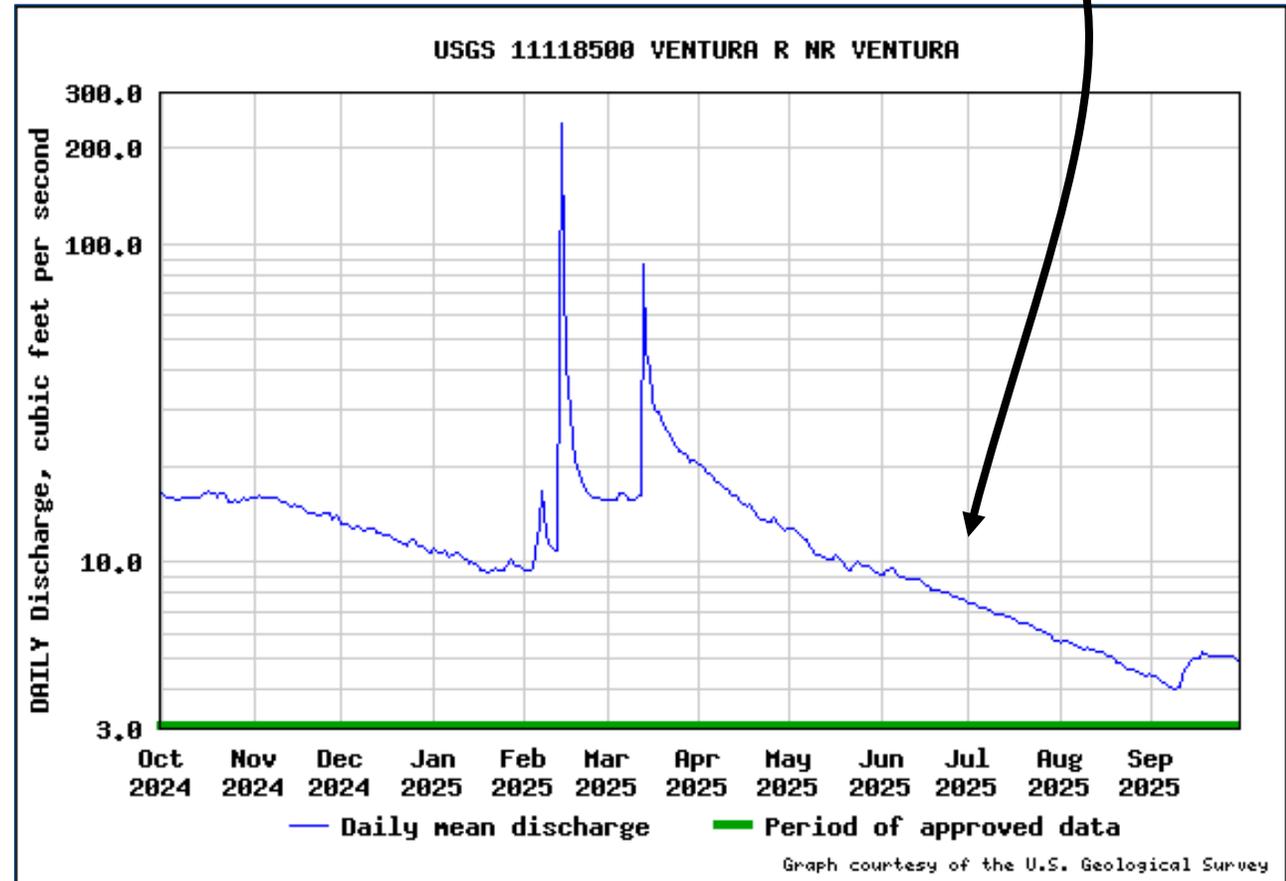
*Full Basin Water Levels
(for reference)*



Summary

- Basin did not fill up in WY 24/25, which contributed to baseflow recession.
- 2024 survey data (monitoring well location and reference point elevation) improved data processing
- Transducer hardware continued to be updated to improve data reliability
- Additional monitoring wells added to the network

*Water Year 24/25
USGS Stream Gage at Foster Park*



Visual Stream Monitoring

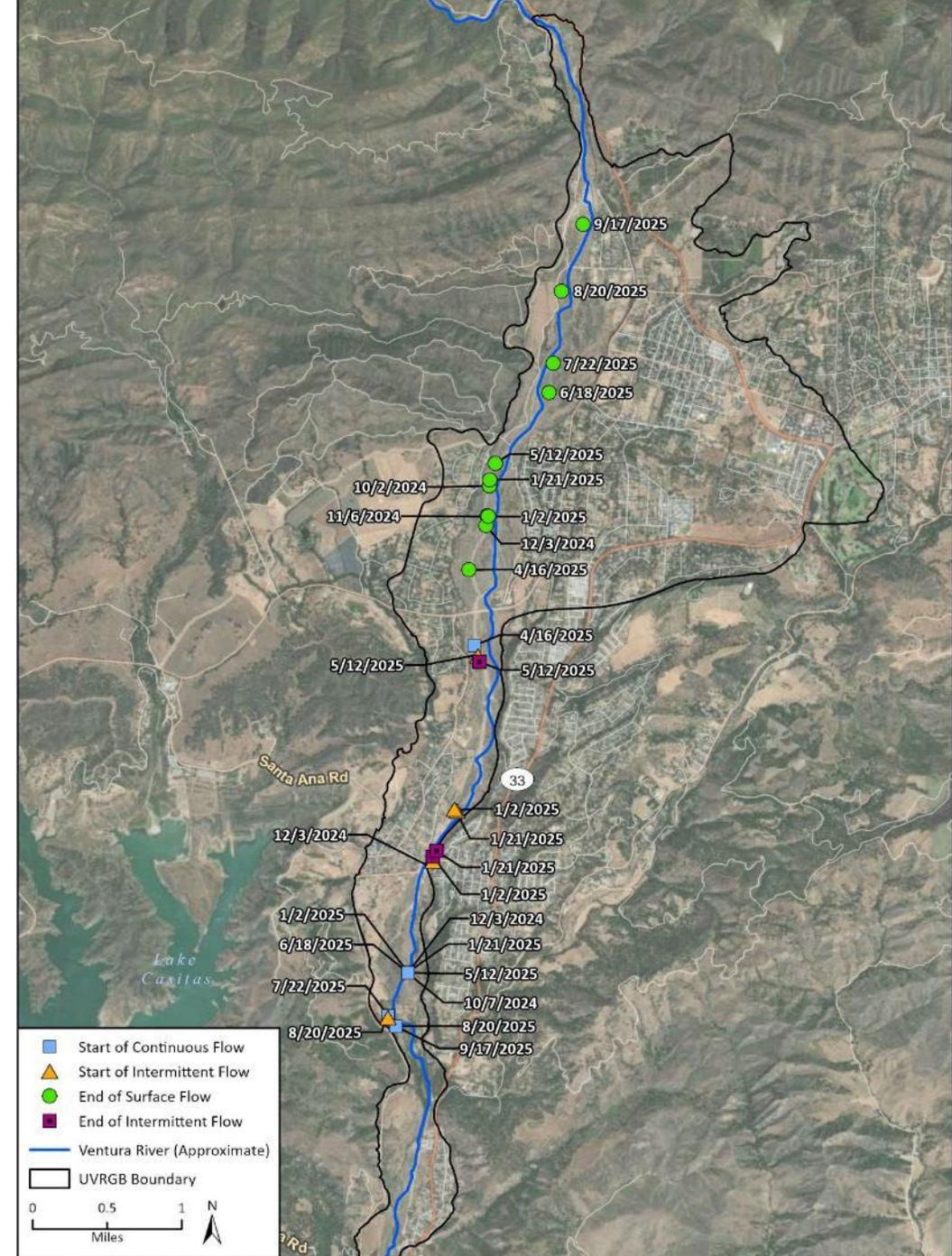
Overview

Data Collected:

- GPS locations of intermittent flow in the Ventura River

Reason Collected:

- Identify the timing/locations where intermittent flow ceases



Key Observations

- Following storms in February and March 2025, the Ventura River sustained continuous surface water flow across the entire Basin through March 2025 and became disconnected in April 2025



Ventura River Downstream of Santa Ana Bridge, October 2024

Camino Cielo Flow Monitoring

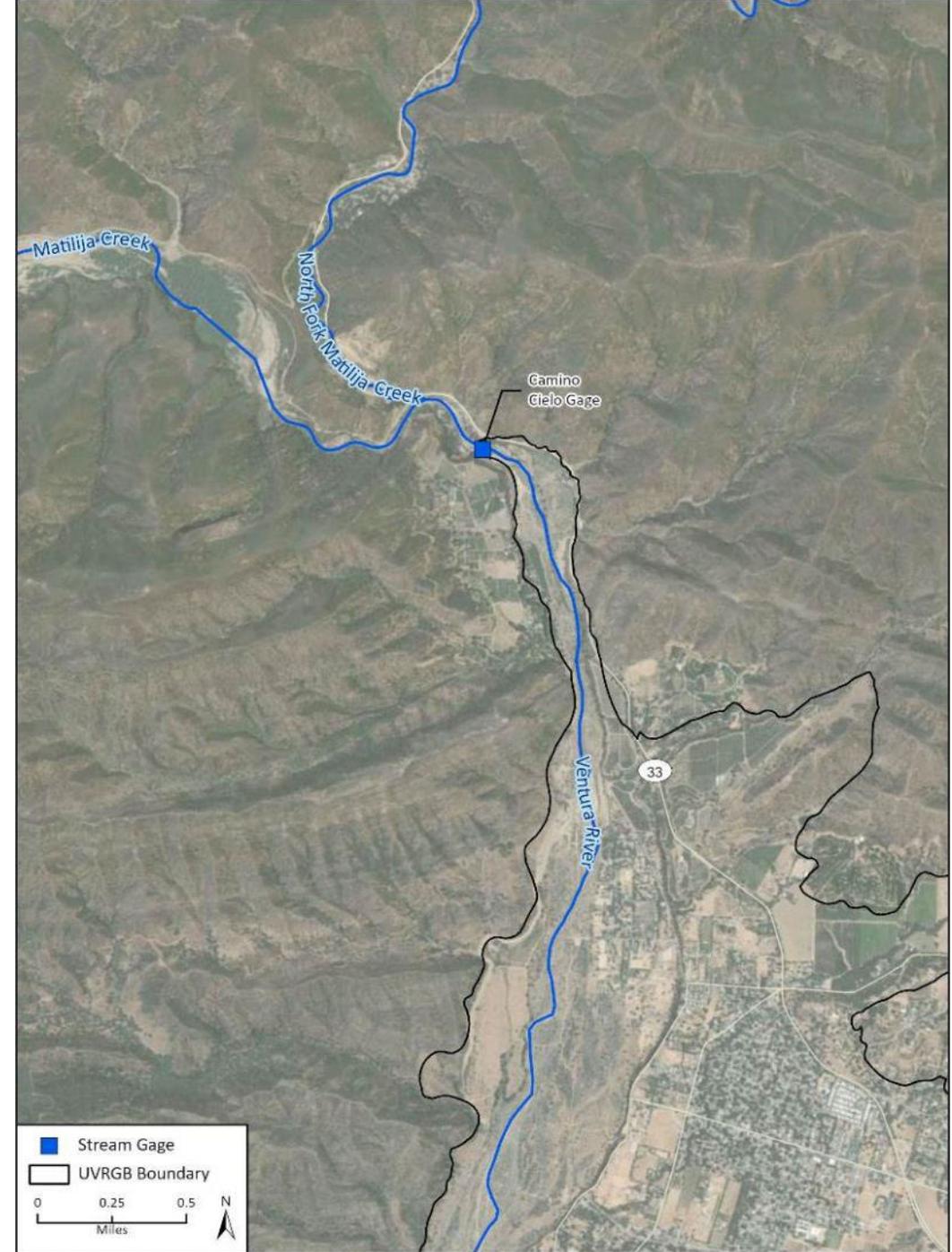
Overview

Data Collected:

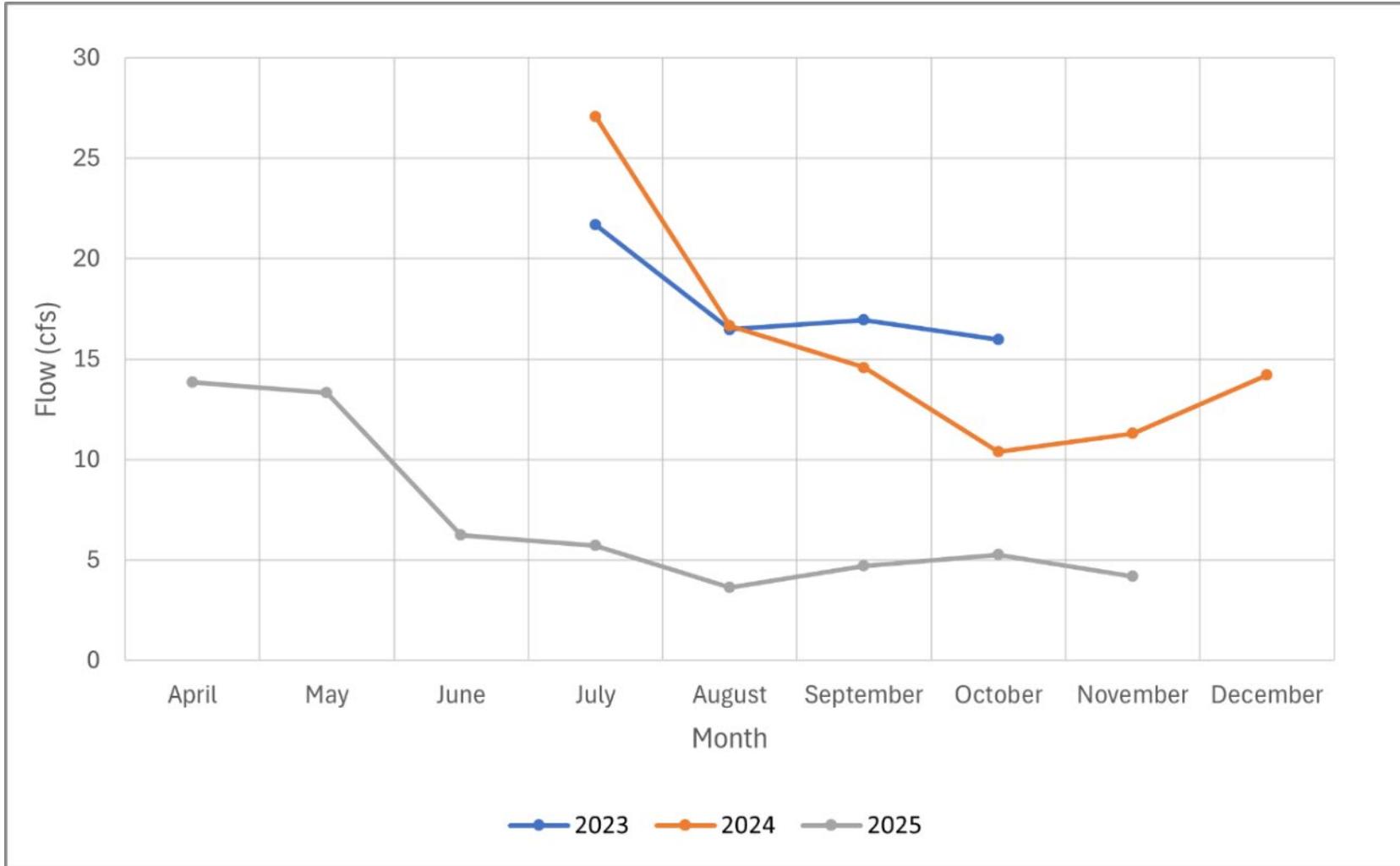
- Cross section survey
- Channel slope survey
- High frequency pressure transducer data
- Monthly instantaneous flow measurements

Reason Collected:

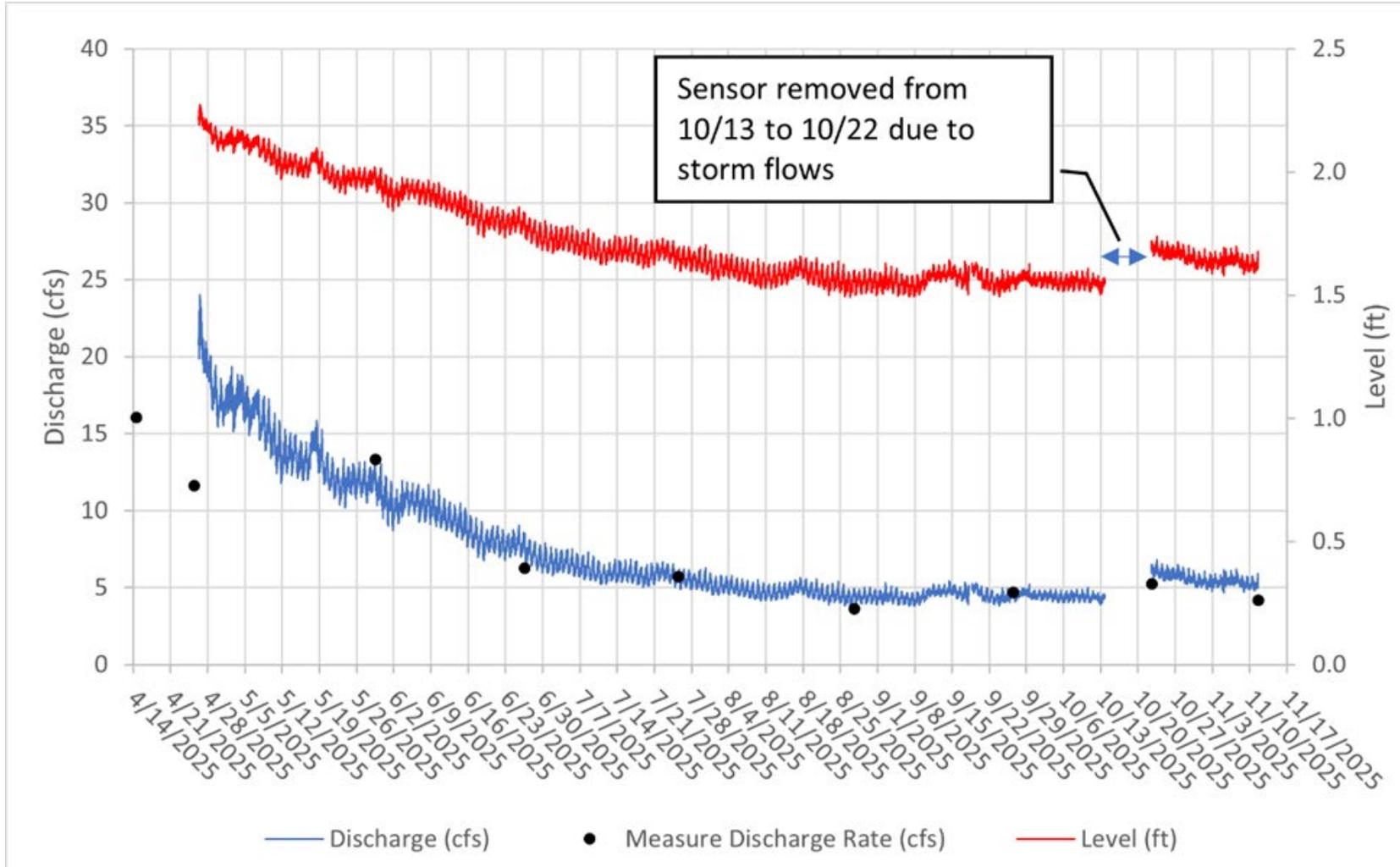
- Quantification of surface flow entering the basin



Camino Cielo Instantaneous Flows

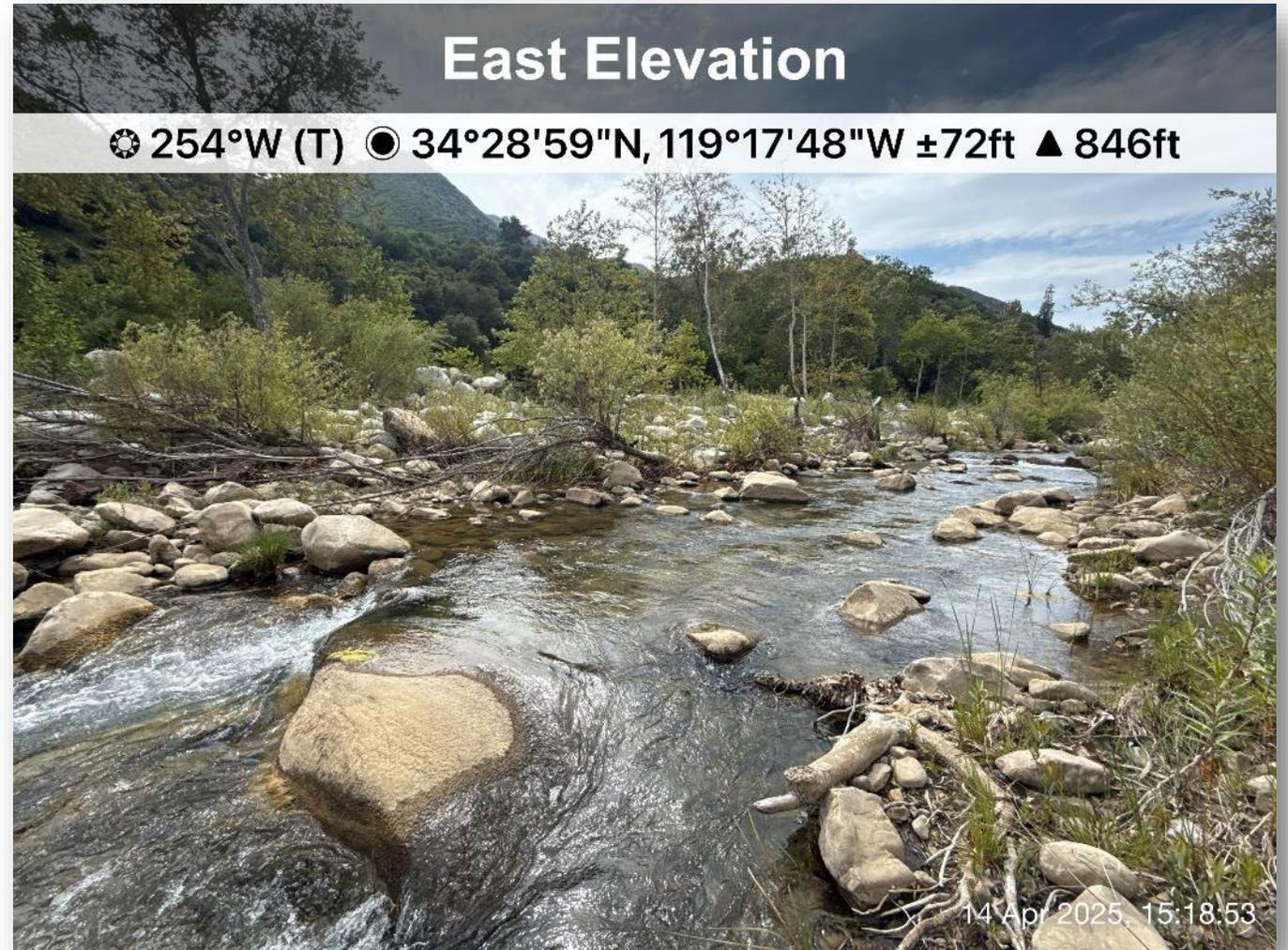


Camino Cielo Hydrograph



Key Observations

- Lowest flow measurements since WY 2023
- Relocation of transducer resulted in reliable data during low flow calibration range



Camino Cielo Transducer Location, April 2025

Riparian GDE Monitoring

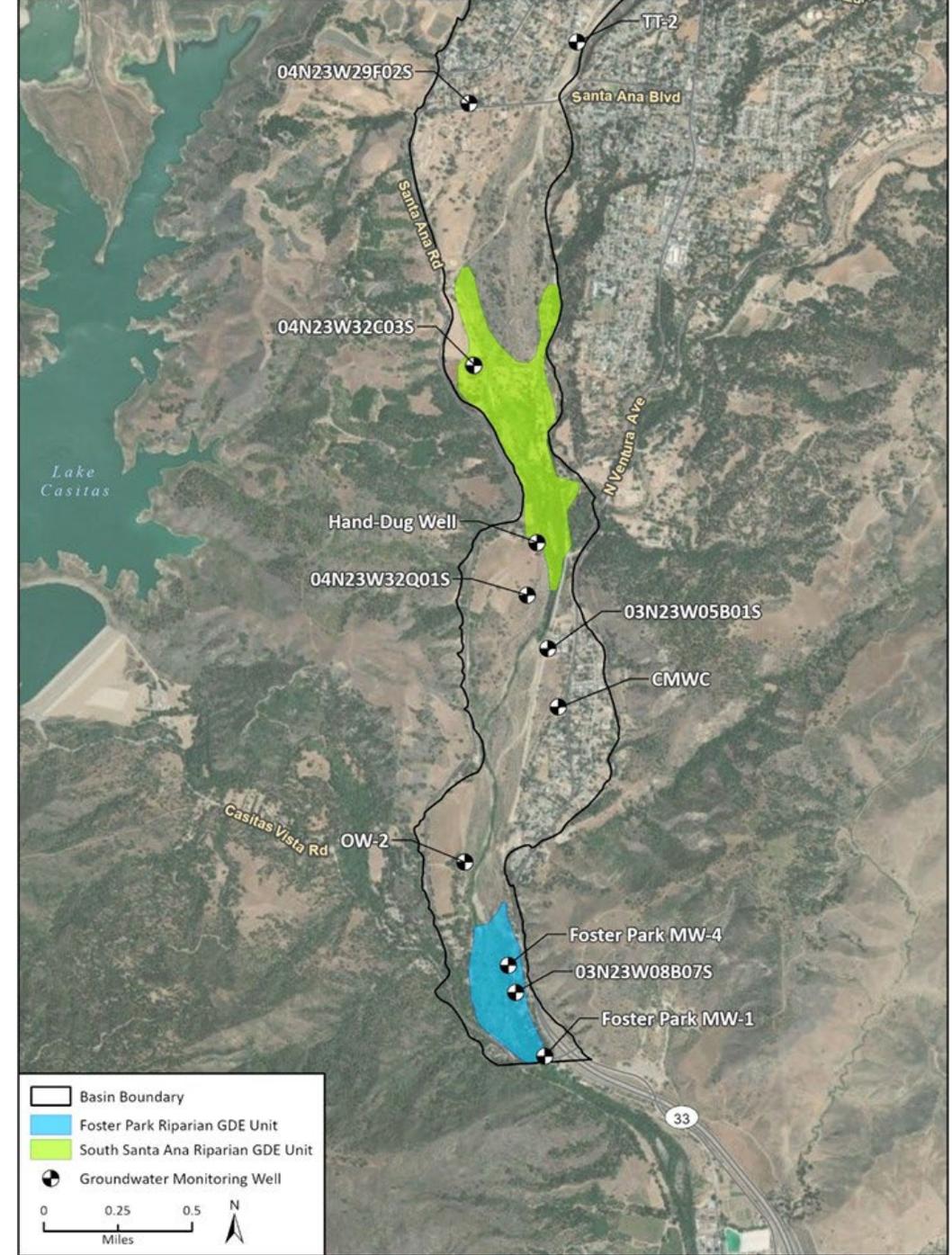
Overview

Data Collected:

- Remote Satellite Data: NDVI and NDMI
- Aerial orthoimagery via drone
- Vegetation community and land cover survey and mapping (completed in WY 2024)
- Groundwater levels
- Precipitation

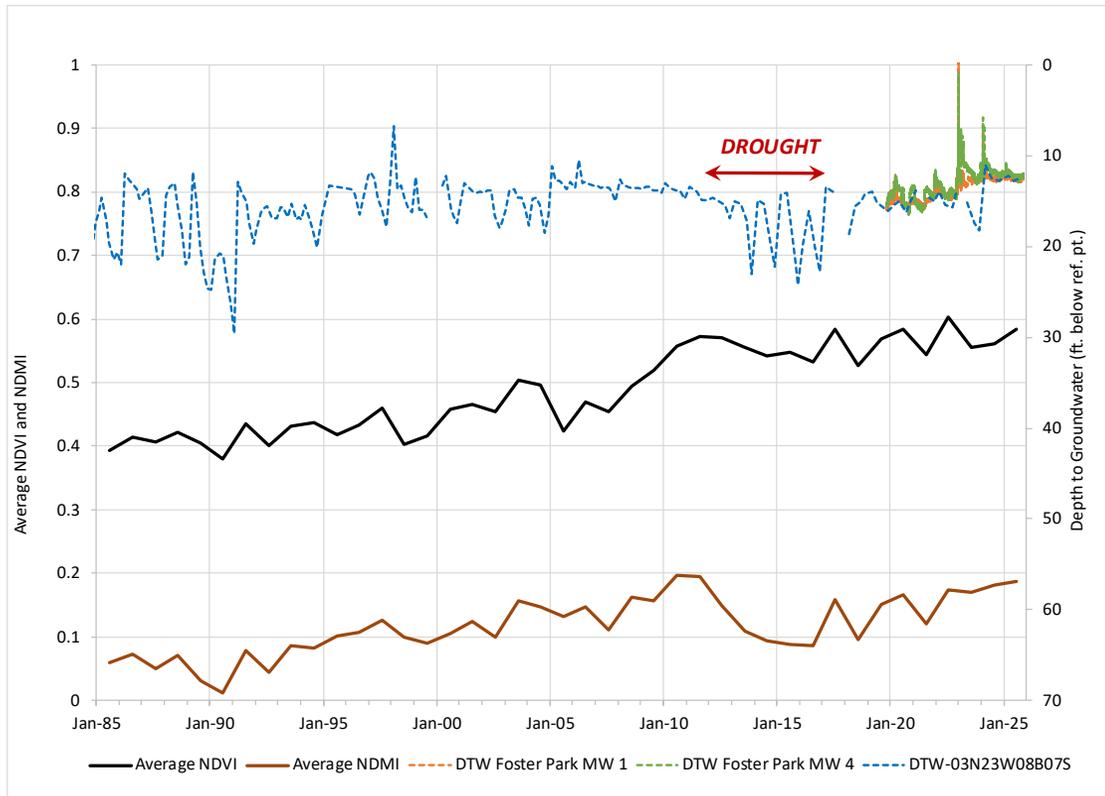
Reason Collected:

- Assess vegetation health related to groundwater levels
- 2024 Surveys coincided with peak vegetation development to provide a baseline for future comparison of vegetation community composition and distribution
 - Documenting Arundo (Giant Reed) distribution benefits eradication efforts

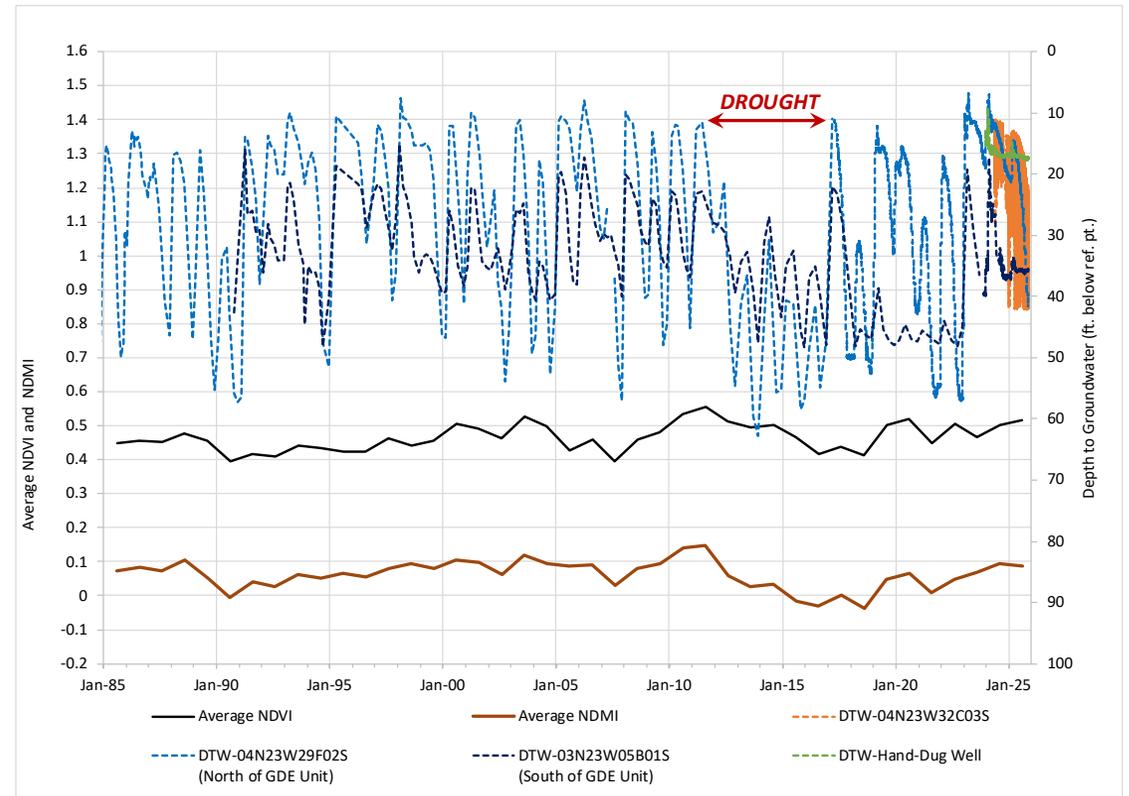


NDVI, NDMI, and Groundwater Levels

Foster Park Riparian GDE



South Santa Ana Riparian GDE



Vegetation and Land Cover Types



- Foster Park Riparian GDE Unit**
- Vegetation Communities**
- Black Locust Groves (0.6 ac.)
 - California Sycamore - Coast Live Oak Riparian Woodland (18.5 ac.)
 - California Sycamore - Coast Live Oak Riparian Woodland (Disturbed) (8.4 ac.)
 - Coast Live Oak Forest and Woodland (2 ac.)
 - Coyote Brush Scrub (0.9 ac.)
 - Eucalyptus Groves (3.1 ac.)
 - Fremont Cottonwood Forest and Woodland (2.7 ac.)
 - Giant Reed Breaks (17.3 ac.)
 - Goodding's Willow - Red Willow Riparian Woodland and Forest (25.6 ac.)
 - Scale Broom Scrub (15 ac.)
 - Smartweed - Cocklebur Patches (10.3 ac.)
 - Spanish Broom Patches (0.3 ac.)
 - Upland Mustards or Star Thistle Fields (10.8 ac.)
- Land Cover Types**
- Developed/Disturbed (13.5 ac.)
 - Open Water (8.9 ac.)
 - Riverwash (16.2 ac.)

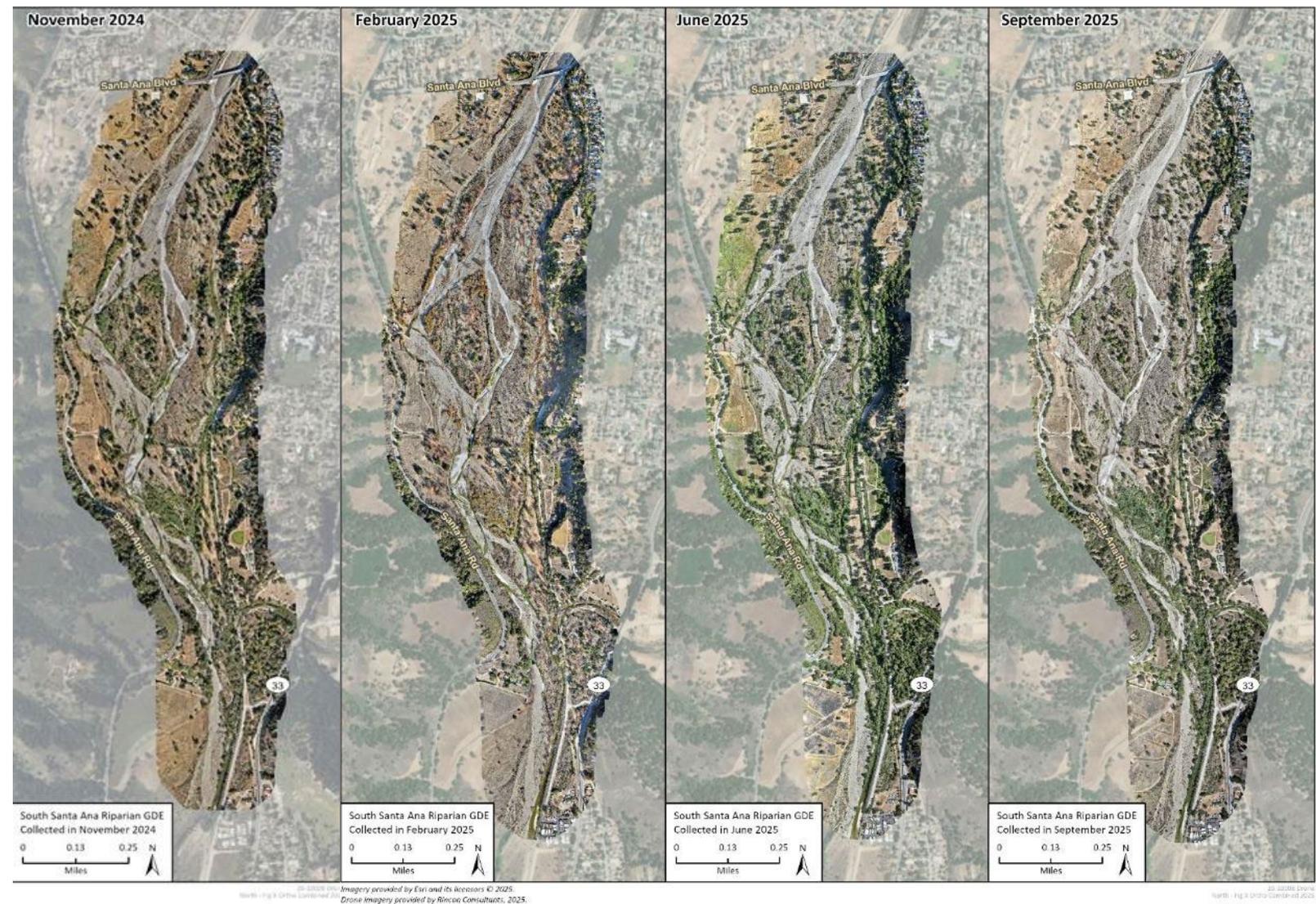


- South Santa Ana Riparian GDE Unit**
- Vegetation Communities**
- Arroyo Willow Thickets (5.5 ac.)
 - California Sycamore - Coast Live Oak Riparian Woodland (18.5 ac.)
 - California Sycamore - Coast Live Oak Riparian Woodland (Disturbed) (8.4 ac.)
 - Cattail Marshes (0.08 ac.)
 - Coast Live Oak Forest and Woodland (2 ac.)
 - Coyote Brush Scrub (0.9 ac.)
 - Eucalyptus Groves (3.1 ac.)
 - Fremont Cottonwood Forest and Woodland (2.7 ac.)
 - Giant Reed Breaks (17.3 ac.)
 - Goodding's Willow - Red Willow Riparian Woodland and Forest (25.6 ac.)
 - Scale Broom Scrub (15 ac.)
 - Smartweed - Cocklebur Patches (10.3 ac.)
 - Tamarisk Thickets (0.3 ac.)
 - Upland Mustards or Star Thistle Fields (10.8 ac.)
- Land Cover Types**
- Developed/Disturbed (13.5 ac.)
 - Open Water (8.9 ac.)
 - Riverwash (16.2 ac.)



Key Observations

- NDVI increased across both Riparian GDE units
- NDMI decreased at the South Santa Ana Riparian GDE Unit and increased at the Foster Park Riparian GDE Unit
- Decrease in NDMI at the South Santa Ana Riparian GDE Unit is consistent with the decrease in overall precipitation
- Increase in NDMI at Foster Park are likely due to continued revegetation since 2023 scouring



Orthoimagery Timeseries for South Santa Ana Riparian GDE

