

Santa Ana River Regional Monitoring Program

May 2022 Update

Steven Wolosoff
Paul Caswell

05/23/22



**CDM
Smith**

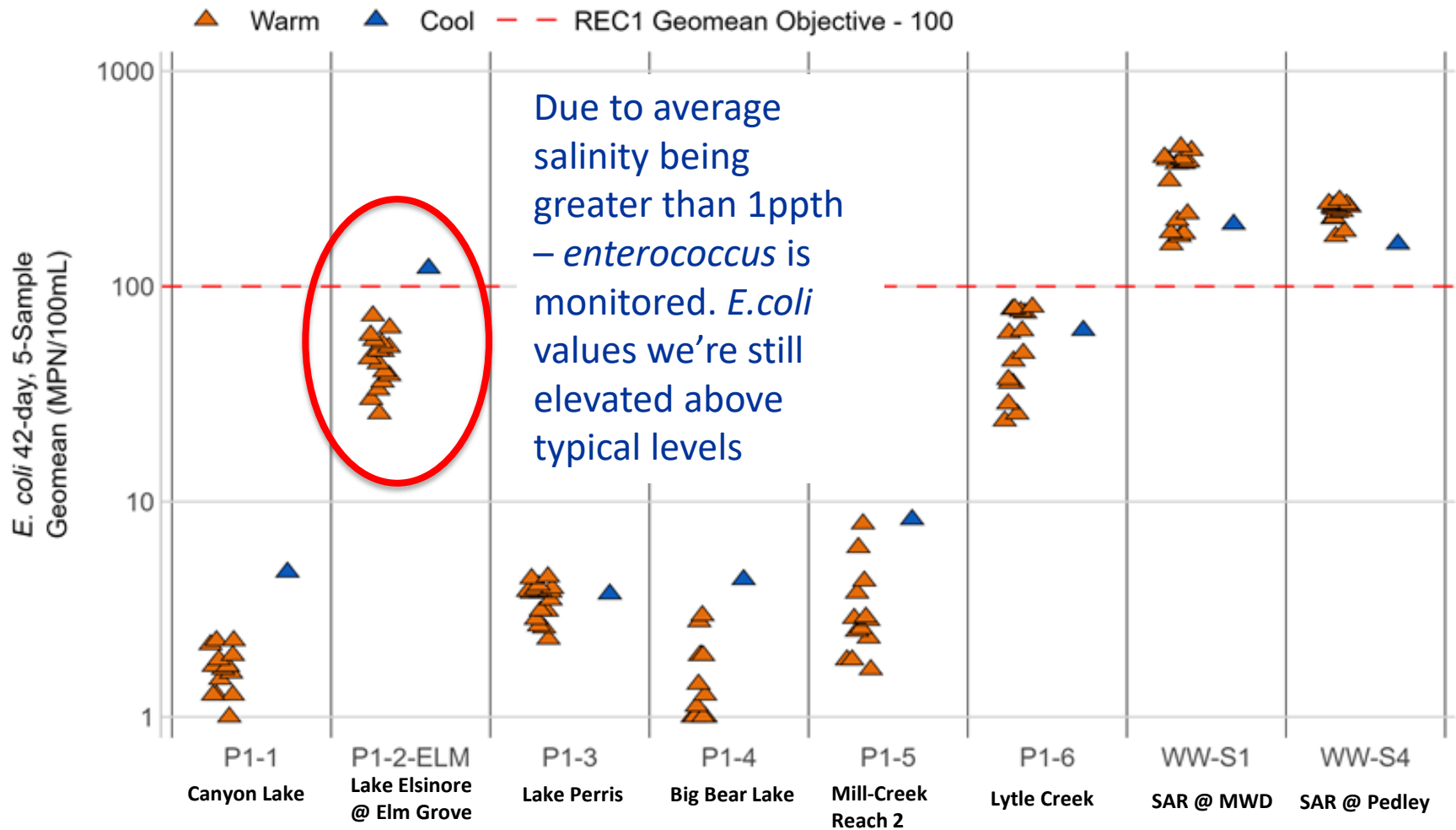
Outline

- Overview of 2021-2022 Sampling Year
 - Priority 1 – Waterbodies with Greatest Risk of Exposure
 - Lake Elsinore story
 - Priority 2 – TMDL Waterbodies
 - Priority 3 – Bacteria Impaired Waterbodies w/out TMDL
 - Priority 4 – Waters Designated as REC2 Only
- Things to look forward to in the 2022-2023 sampling year
 - Continued Lake Elsinore support
 - Pig2Bac



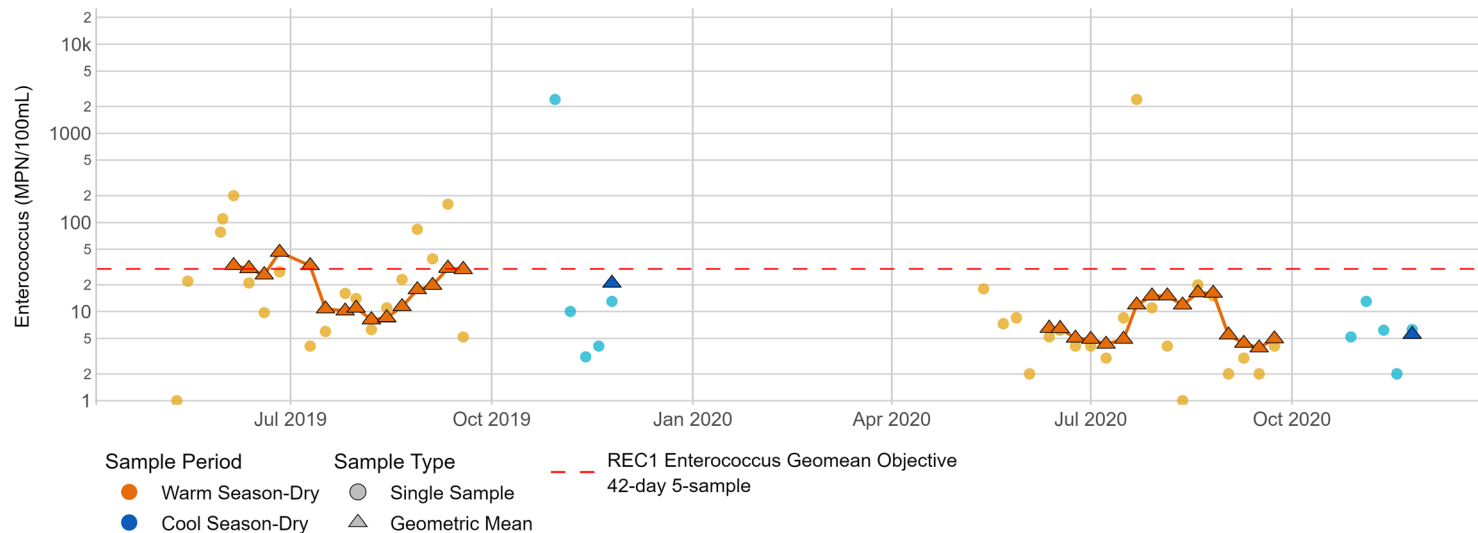
Overview of 2021-2022 Sampling Year

Priority 1 *E.coli* Geomean Results

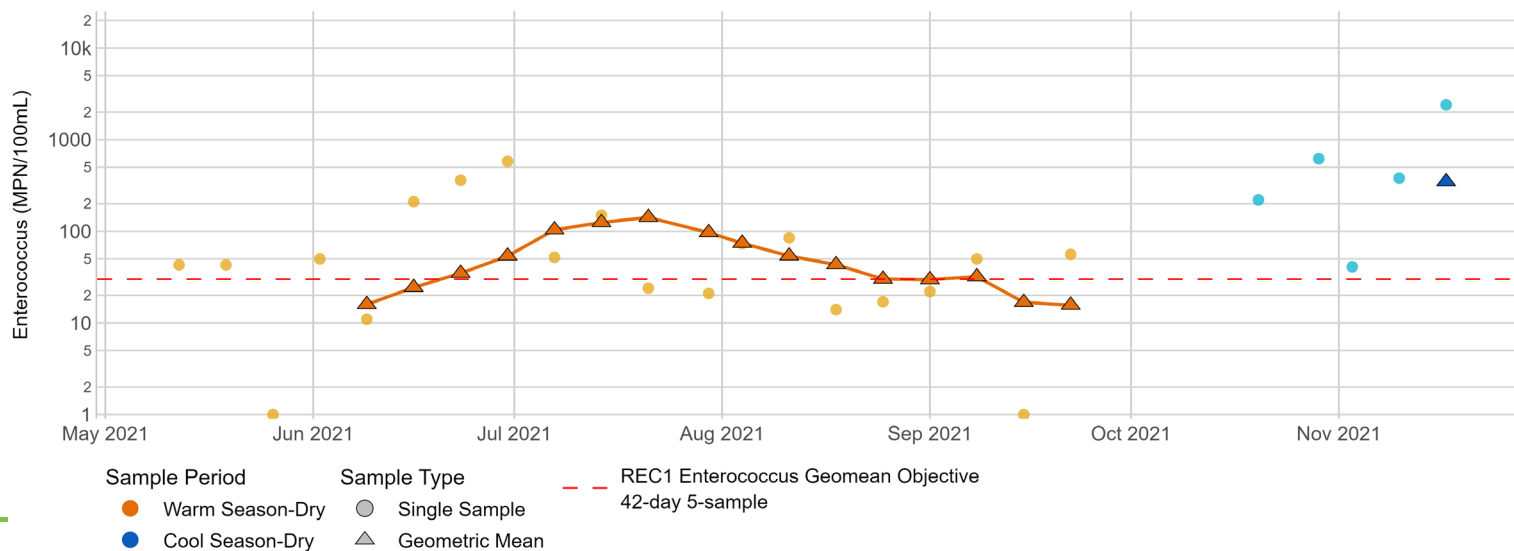


Lake Elsinore Enterococcus Results 2019-2021

P1-2 - Lake Elsinore (Enterococcus) for 2019 - 2020



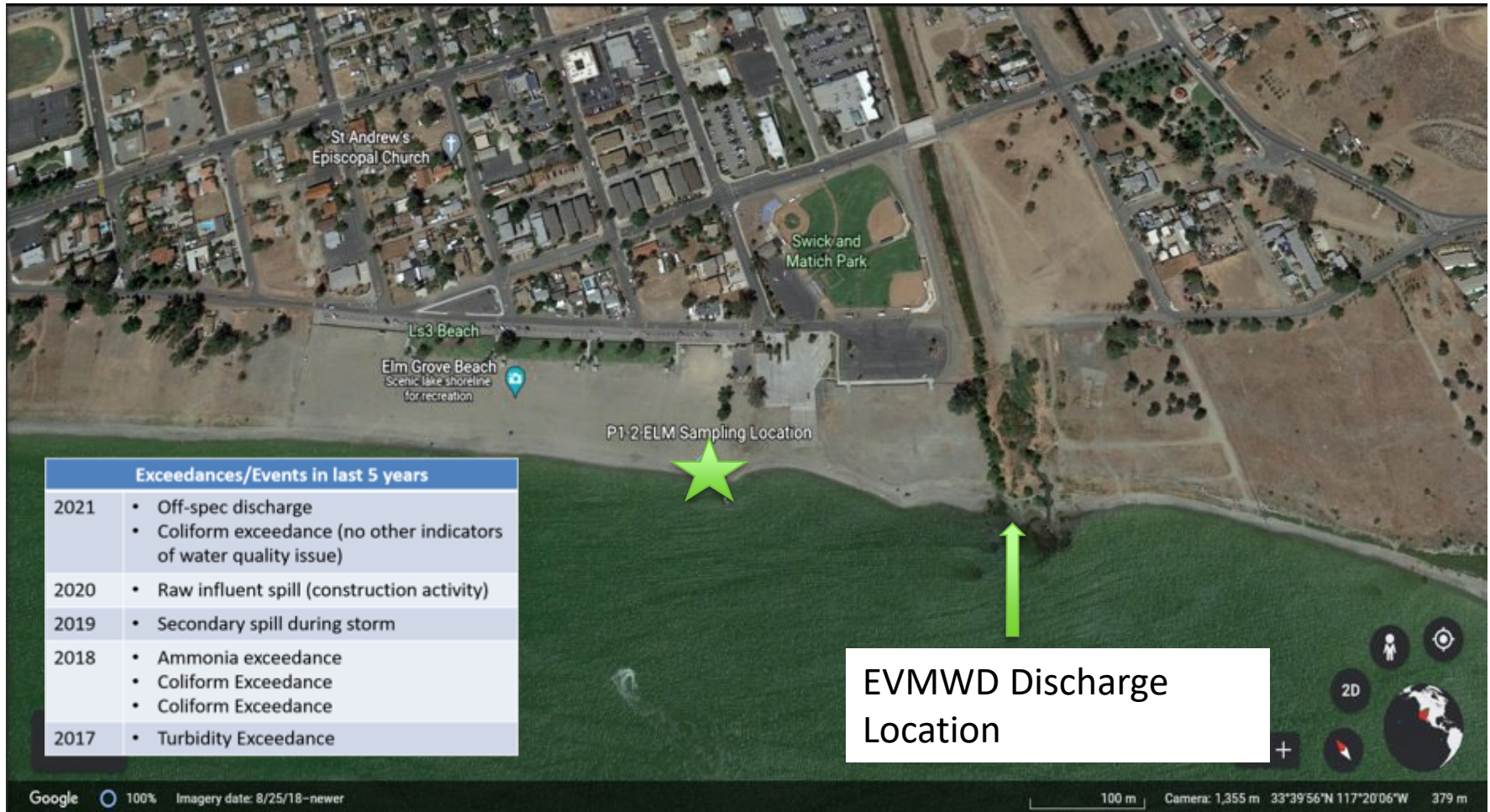
P1-2-ELM - Lake Elsinore (Enterococcus) for 2021 - 2021



Lake Elsinore Sampling Location



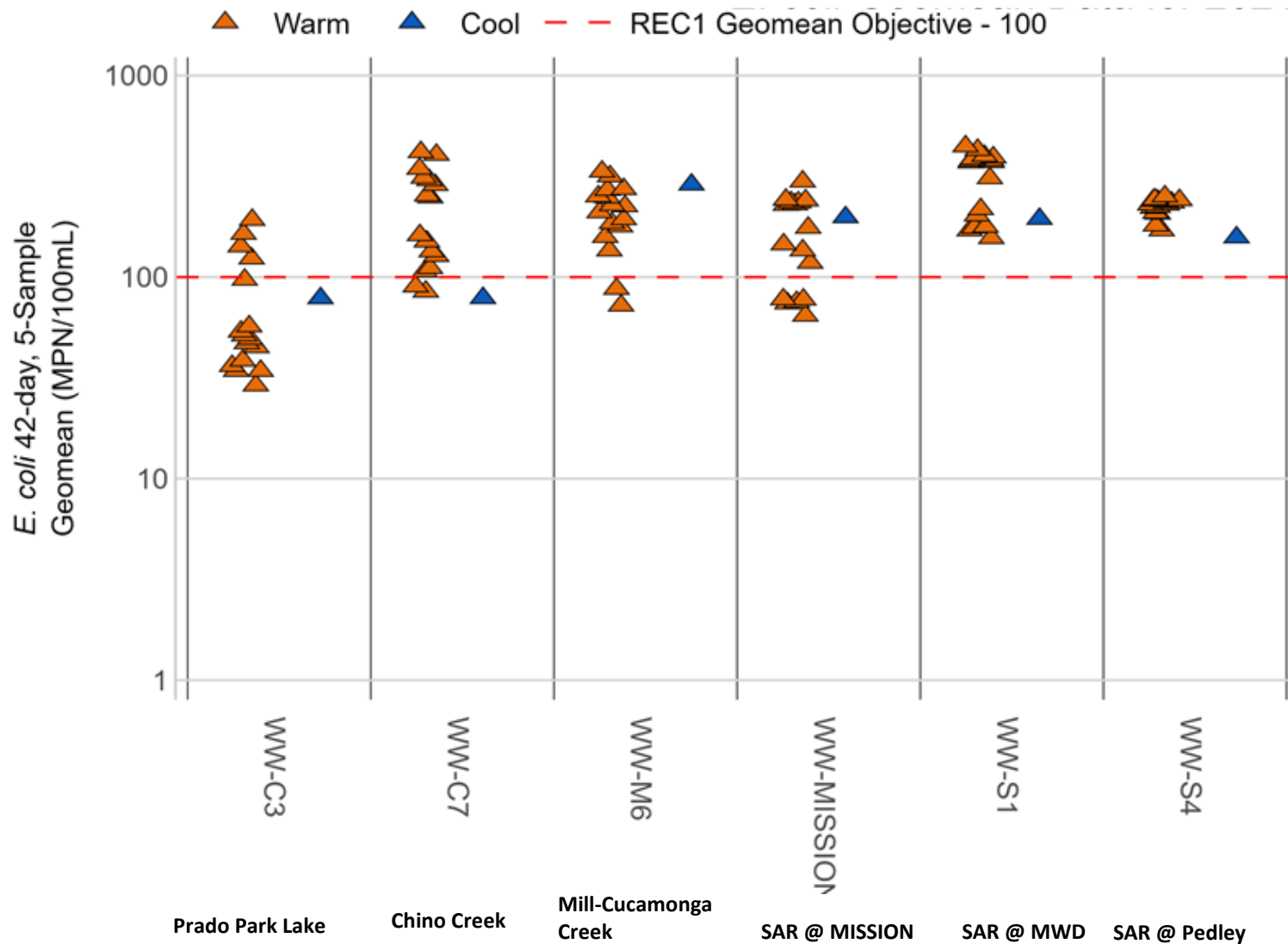
Elm Grove Beach Sampling Location



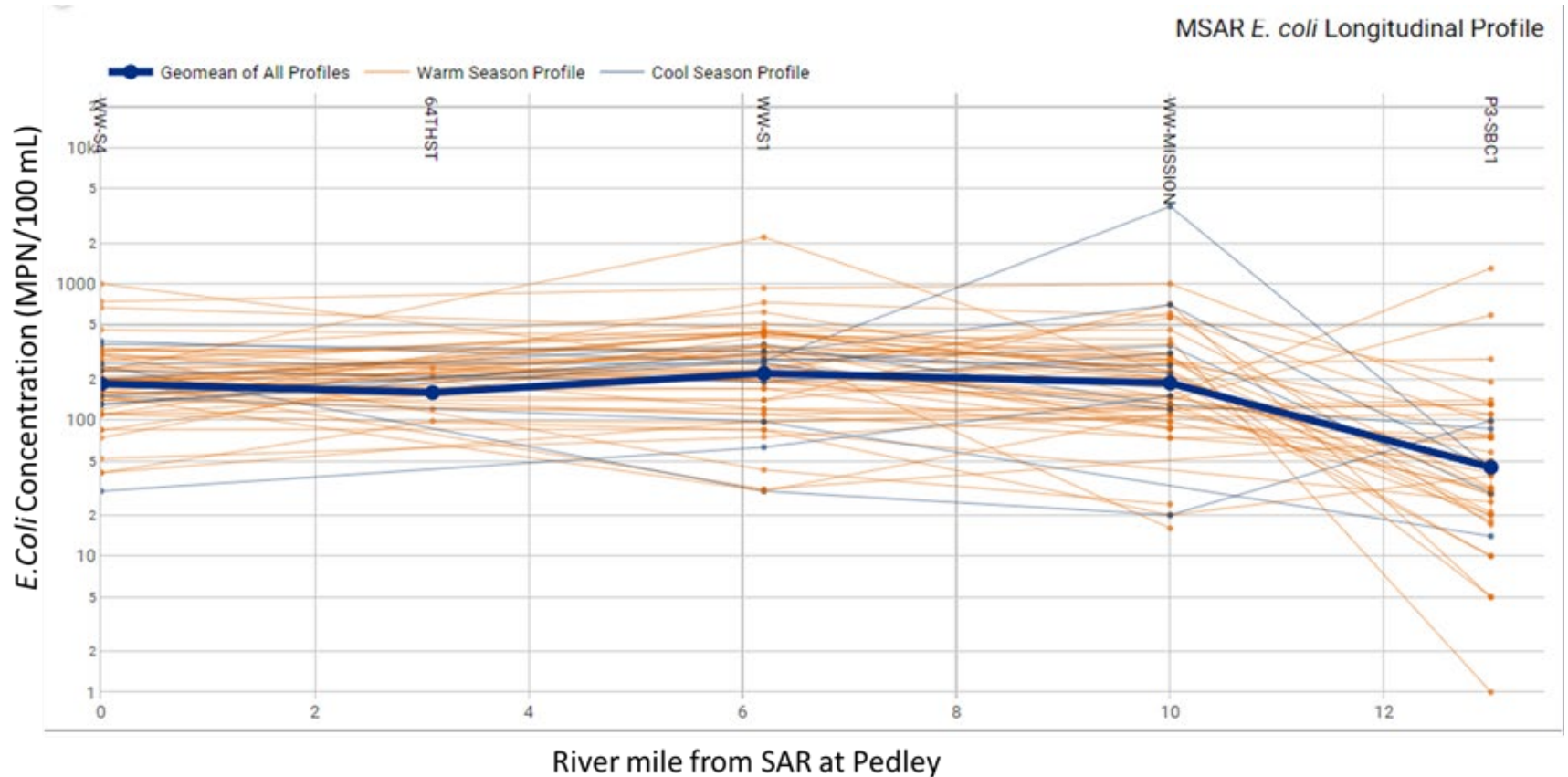
Actions to date

- Results were monitored and shared with the City of Lake Elsinore throughout the 2021 dry sampling season
- Sample results were compared against exceedances reported by EVMWD but no direct correlation was drawn
- City of Lake Elsinore is beginning source identification study and results will be shared with the Task Force upon completion

Priority 2 *E.coli* Geomean Results



Santa Ana River Longitudinal Plot

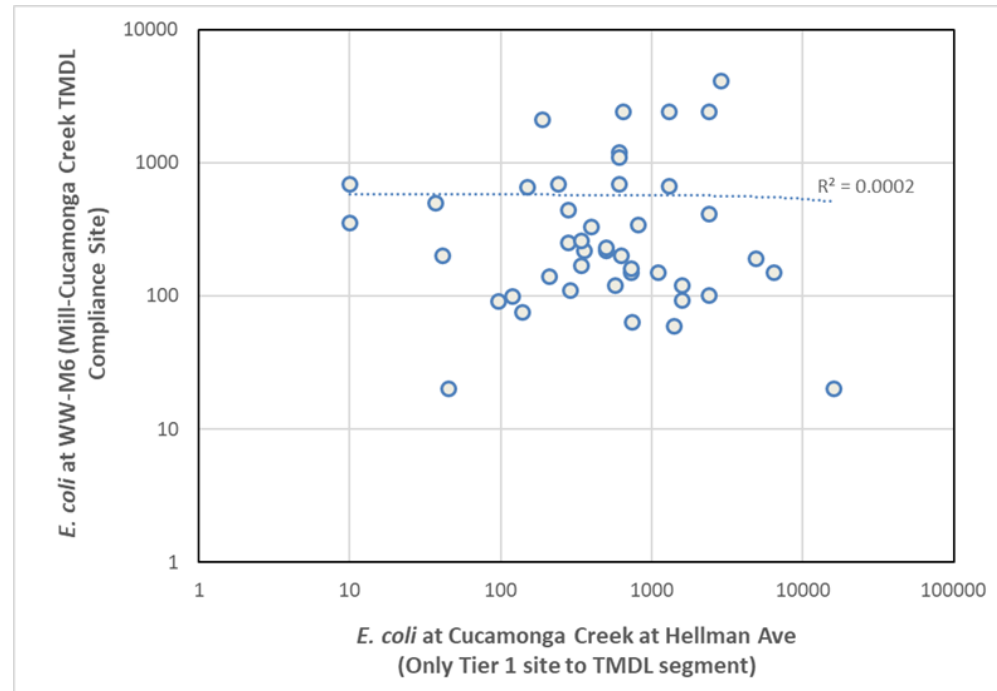


WW-M6 and P4-SBC1 Comparison



P4-SBC1 v. WW-M6

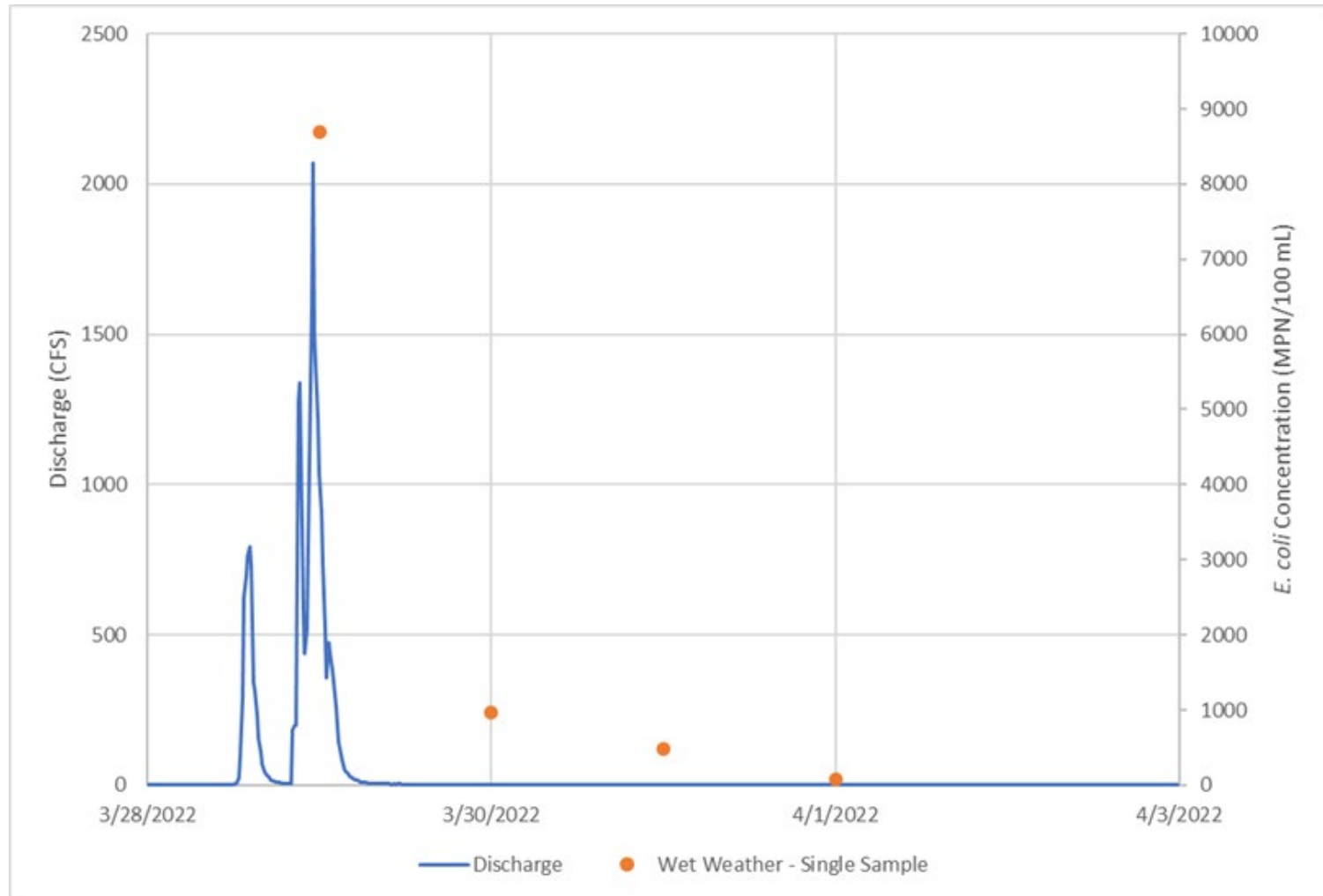
- Nearly all of the MS4 drainage area upstream of the Mill-Cucamonga Creek TMDL compliance monitoring location is upstream of Cucamonga Creek at Hellman Avenue, where the channel transitions from concrete lined to a natural watercourse. Thus, it would be reasonable to expect the bacteria load at P4-SBC1 would be closely related to the nearby downstream site WW-M6
- There is no evidence of any correlation
- This could indicate that fecal bacteria from collective inputs from all MS4s to Cucamonga Creek are not causing TMDL impairment in Mill-Cucamonga Creek. The Mill Creek Wetland stormwater BMP diverts a portion of the flow from the Hellman Avenue location for treatment and releases back to Mill-Cucamonga Creek just upstream of the TMDL compliance monitoring location



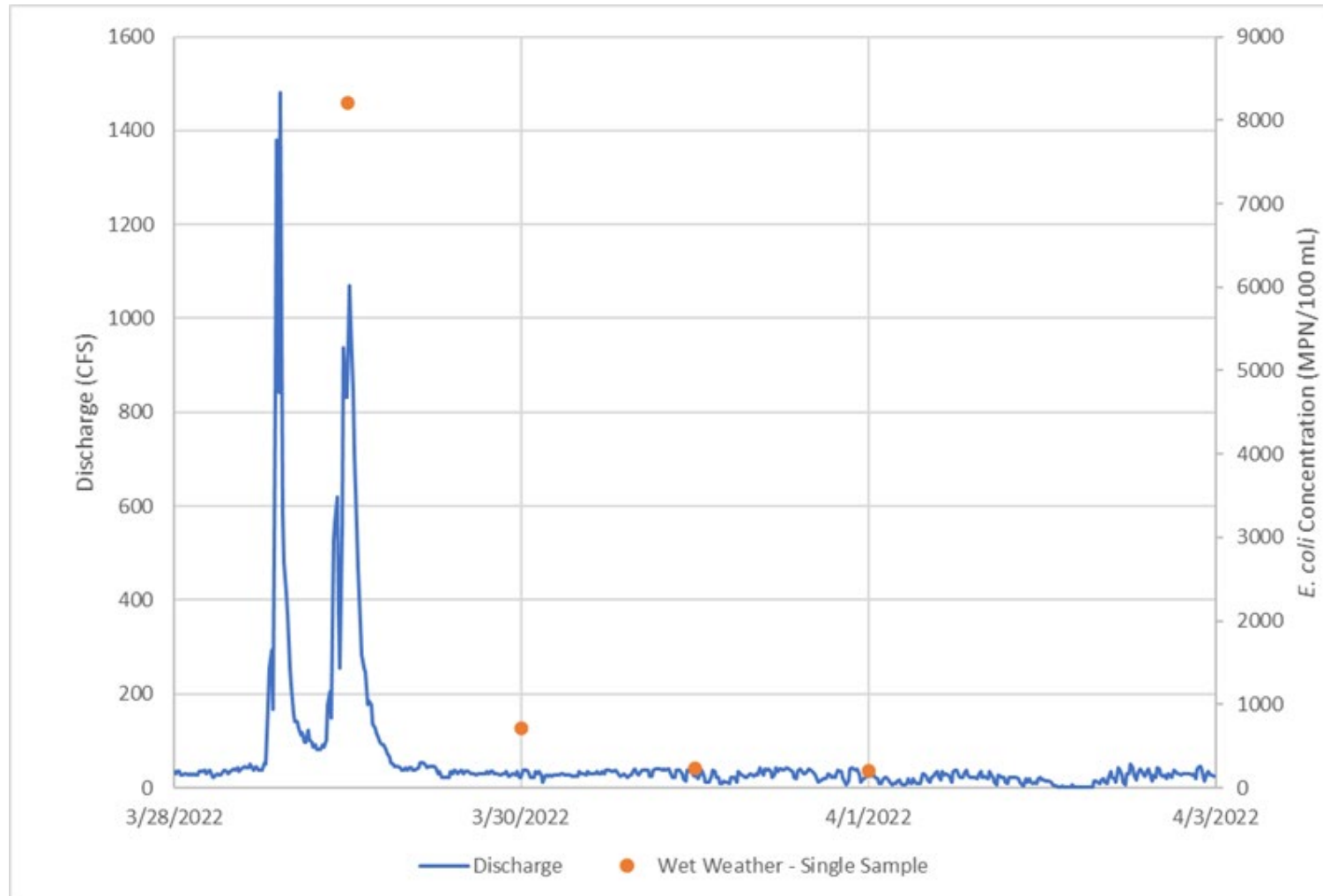
2022 Wet Weather Results

Site	3/29/2022 During Storm	3/30/2022 24 hours after storm start	3/31/2022 48 hours after storm start	4/01/2022 72 hours after storm start
Prado Park Lake (WW-C3)	41	41	62	150
Chino Creek at Central Avenue (WW-C7)	8700	960	490	74
Mill-Cucamonga Creek below Wetlands (WW-M6)	8200	710	230	200
SAR Reach 3 at MWD Crossing (WW-S1)	16000	420	280	130
SAR Reach 3 at Pedley Avenue (WW-S4)	16000	1000	260	140

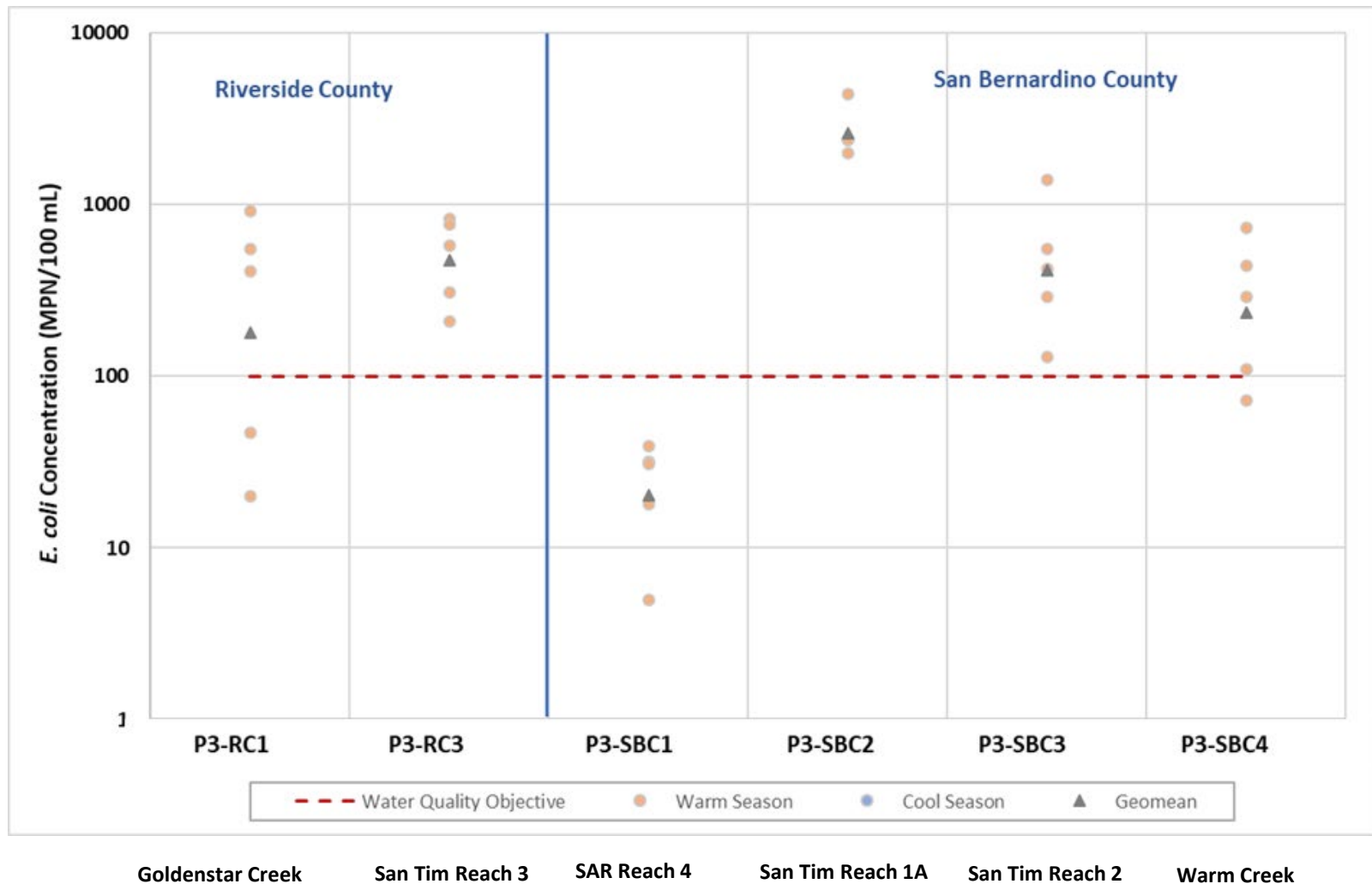
WW-C7 Wet Weather Plot



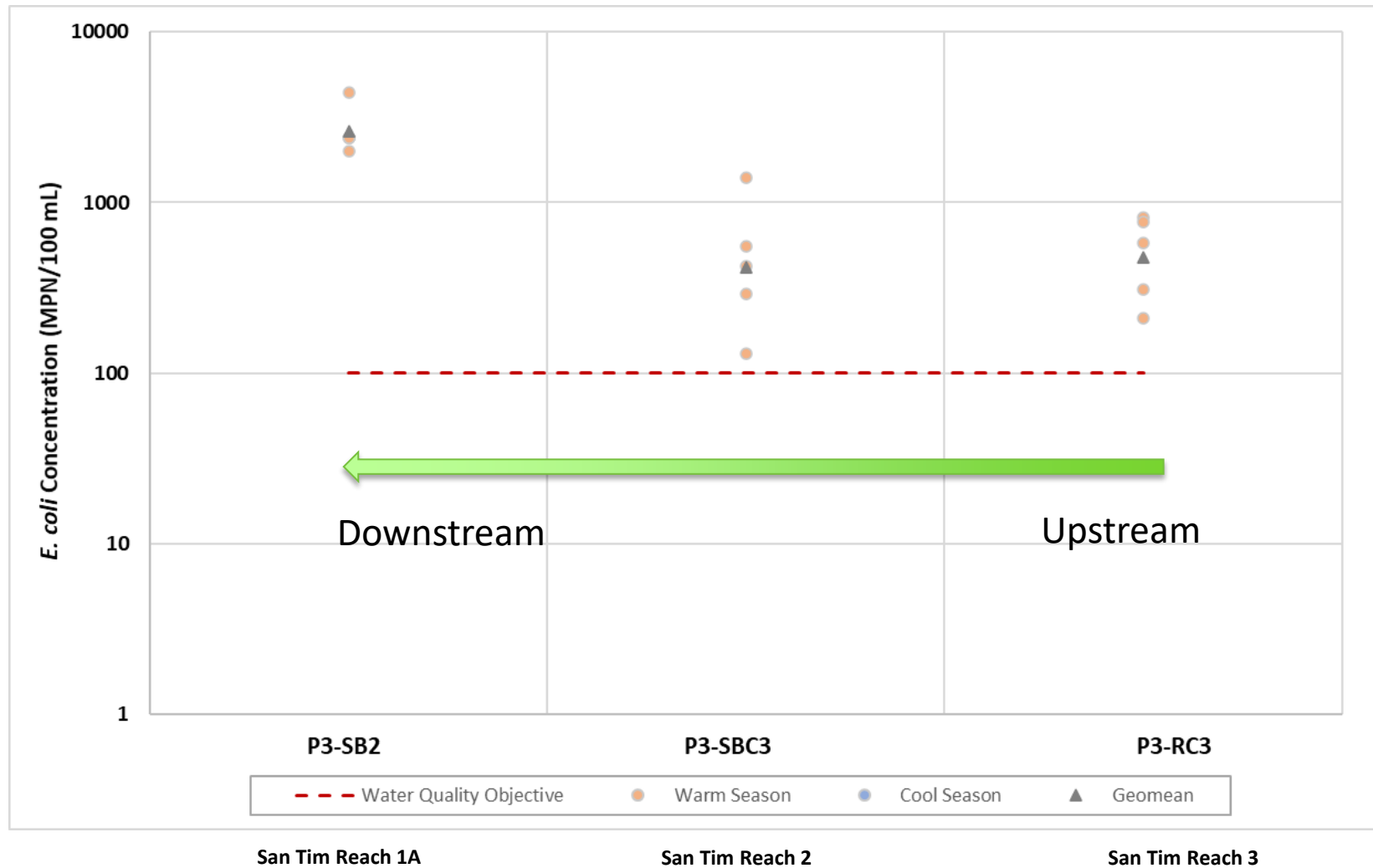
WW-M6 Wet Weather Plot



Priority 3 E.coli Geomean Results



San Timoteo Creek



Priority 3 Take-aways

- Three sites along San Timoteo Creek have been added to the RBMP, allowing for assessment of the water quality from the furthest upstream (P3-RC3) to the downstream end just prior to entry to the mainstem SAR (P3-SBC2)
- Bacteria concentrations rise sharply in Reach 1A, which may be attributed in part to the variation in flows, which are the highest in Reach 3 prior with inputs from agricultural/rural lands as well as the City of Beaumont's wastewater treatment plant. Reach 2 contains the San Timoteo groundwater recharge basin which reduces the flows prior to reaching San Timoteo Creek Reach 2 sampling point (P3-SBC3). The results indicate the potential sources of the bacteria impairment are both upstream of San Timoteo Reach 3 and from urban flows to Reach 1A.

Priority 4 Single Sample Results

Site ID	Site Description	Single Sample Antidegradation Target (MPN/100 mL)	E.coli Sample Result	Enterococcus Sample Result	Sample Date
P4-OC1	Santa Ana Delhi Channel Upstream of Irvine Avenue	1067	122		8/19/2021
P4-OC2	Santa Ana Delhi Channel in Tidal Prism	464		109	8/19/2021
P4-OC3	Greenville-Banning Channel in Tidal Prism	64		98	8/19/2021
P4-RC2	Temescal Creek at Lincoln Avenue	725	7.48		7/23/2021
P4-SBC1	Cucamonga Creek at Hellman Avenue	1385	1500		7/23/2021

Priority 4 Follow-Up Sampling

P4-OC3

Sample Requirement	Sample Date	Enterococcus Concentration (MPN/100 mL)
Original Annual Sample	8/19/2021	98
Required Monthly Follow-up Samples	09/21/2021	132
	10/28/2021	882
	11/29/2021	20

Orange County is continuing to collect monthly samples assess possible degradation

P4-SBC1

Sample Requirement	Sample Date	E. Coli Concentration (MPN/100 mL)
Original Annual Sample	7/23/2021	1,500
Required Monthly Follow-up Samples	8/25/2021	500
	9/22/2021	16,000
	10/20/2021	6,500

Follow up sampling effort was combined with SBCFD's 10-week study which occurred concurrently. Samples were collected along entire reach including at Hellman Avenue. Combined datasets are being used as beginning of source identification study

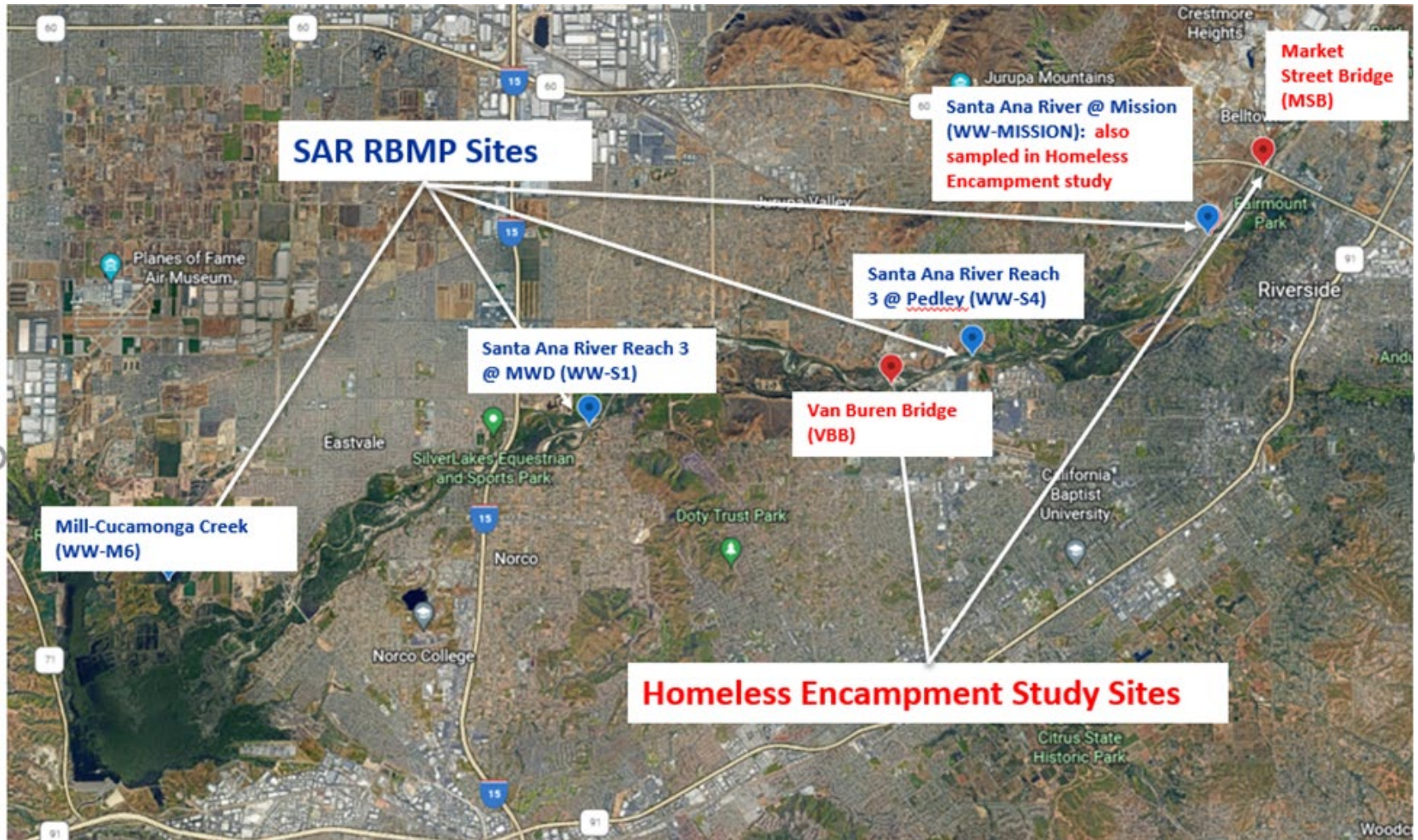


Things to look forward to in
2022-2023 sampling year

P1-2ELM Dry Weather Sampling

- Dry weather samples from P1-2ELM will be monitored closely to assess whether high bacteria levels still exist at Elm Grove Beach
- RMP will continue to coordinate with the City of Lake Elsinore on source identification study

Addition of Pig2Bac sampling to RMP



Pig2Bac Scope

- Collect additional water quality data during the 2022 dry season at four of the Priority 2 TMDL compliance monitoring locations (WW-M6, WW-MISSION WW-S1, and WW-S4)
- Reach out to California Fish and Game to obtain information about feral pigs in the Santa Ana River watershed
- Analyze the results of these samples in combination with those collected in the Phase 1A Homeless Encampment study, assess whether correlation exists between gene copy and general *E. coli* bacteria concentrations, and provide recommendations to the Task Force on next steps

Questions/Comments?