CARCD 72nd Annual Conference
"Dynamic Partnership, Relevant Results"
November 2017 - Sacramento, CA

RESOURCE

CONSERVATION DISTRICTS

Solano RCD Partnership with Local Storm Water Discharge Programs

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Solano Resource Conservation District
November 16, 2017

Water Quality Monitoring

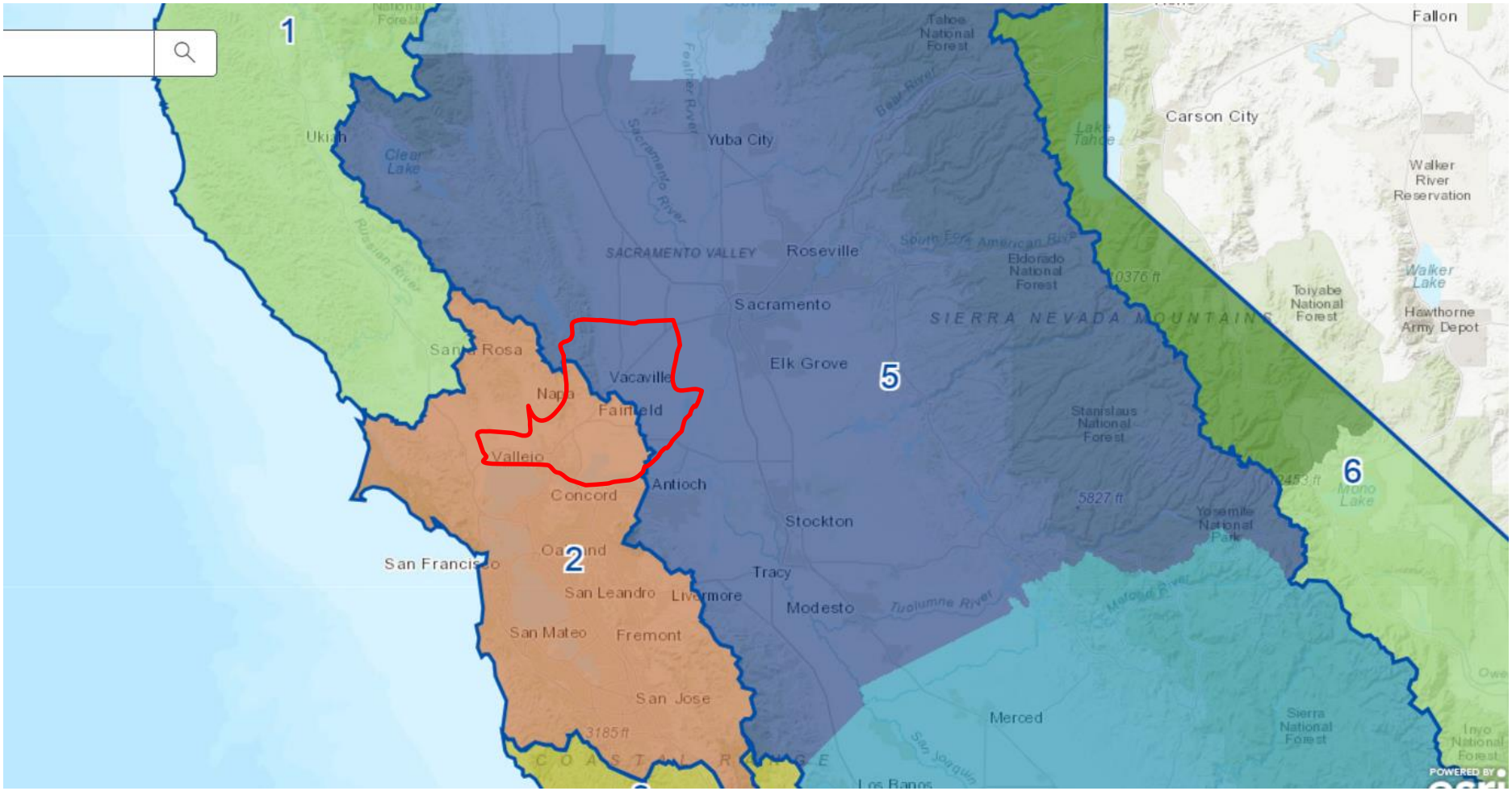
•Cities of Fairfield, Suisun City, Vallejo are all required to monitor ambient stream conditions as part of their NPDES permits (MS4) for storm water discharge with the Regional Water Quality Control Bd (SF Bay)

•Fairfield-Suisun Sewer District and Vallejo Flood and Wastewater District manage the storm water programs for the cities

•They are part of a Bay Area wide coalition (a group NPDES permit) to do this monitoring (RMC- Regional Monitoring Coalition)

•Monitoring requirements are based on:
- •Population size
- •Age of storm water program

Solano County is split between two Regional Water Quality Control Boards:



The current partnership is with the western jurisdictions, in Region 2.

Sampling requirements

- Water toxicity (winter and summer)
- SWAMP bioassessments (spring)
- Water chemistry (DO, pH, temp, EC, chlorine, nutrients, metals, sediment) (spring)
- Sediment toxicity (summer)
- Sediment chemistry (pesticides, metals, etc.) (summer)
- Pathogens (summer)
- Continuous temp (April-Oct)
- Continuous water quality (May and Sep)
- Trash

benthic algae and invertebrate sampling

stream depth, width, substrate, vegetation sampling

SWAMP bioassessments take place in the spring as soon as base flows are established

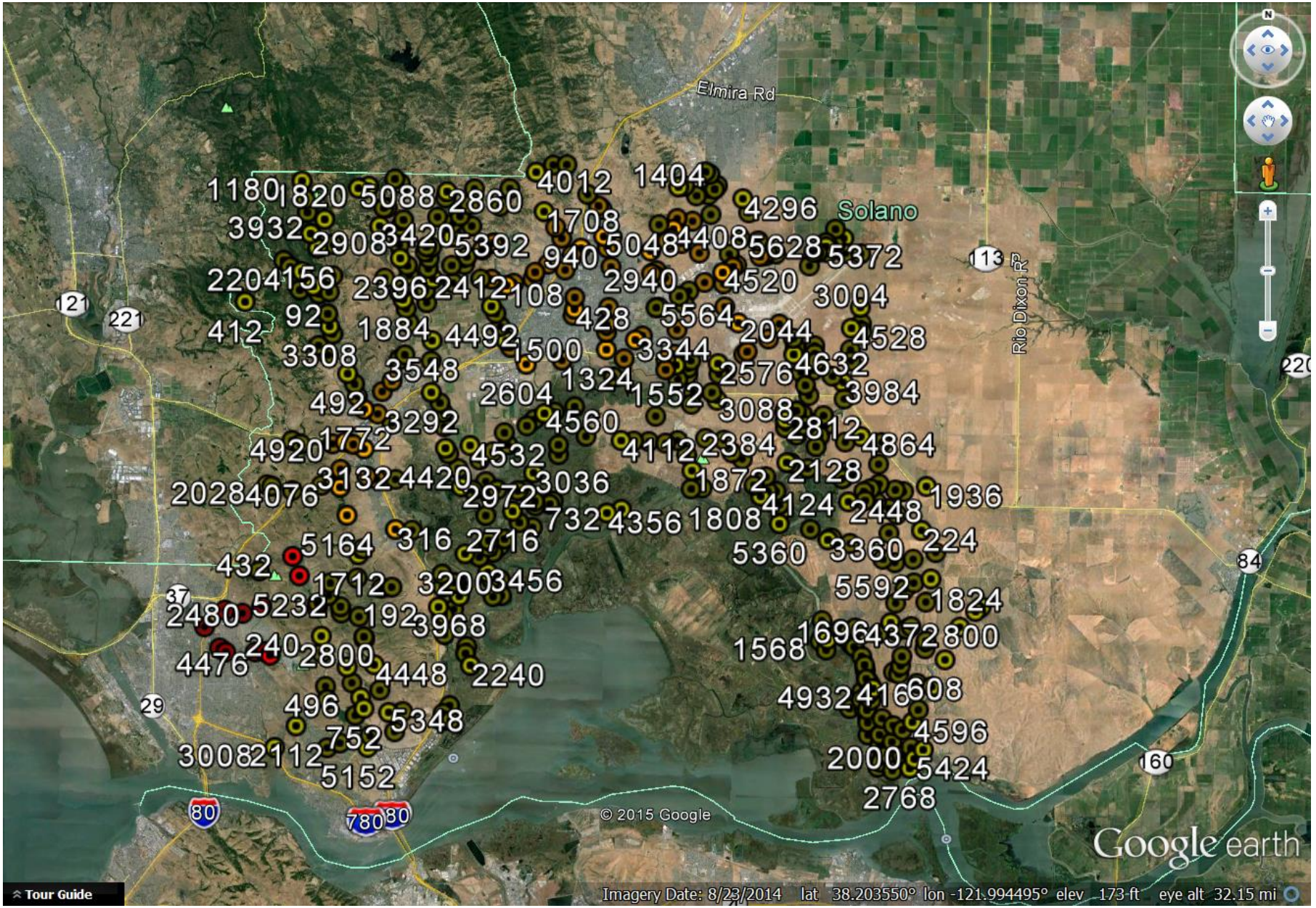
Algae samples require extensive processing in the field

water toxicity sampling

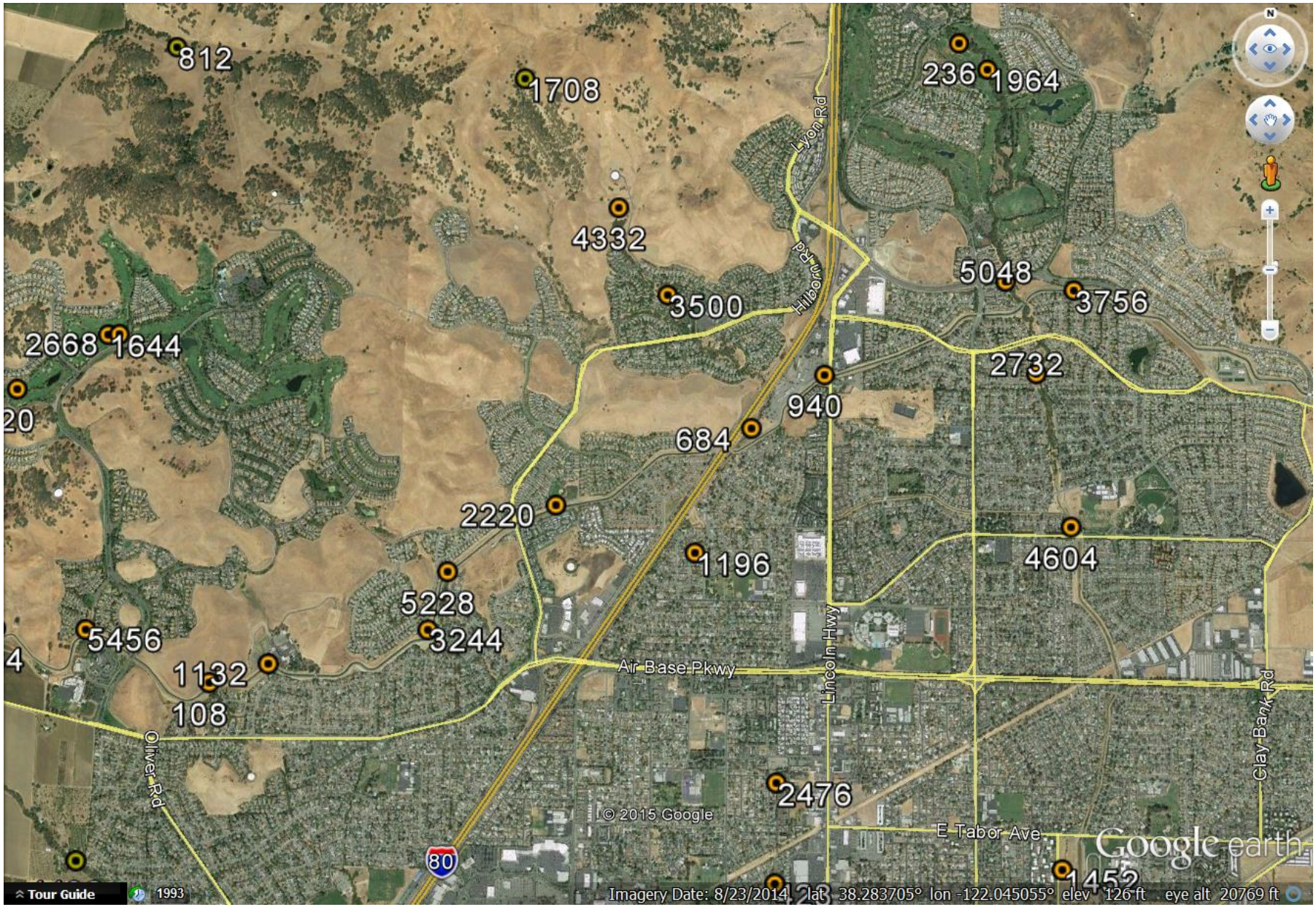
water toxicity sampling

deploying the continuous water quality monitor

deploying the continuous temperature gauge



Most constituents are sampled at randomly drawn sites (“probabilistic” sampling scheme)



Sites are evaluated and either accepted or rejected as possible to sample. If they are possible, they are sampled in the order in which they were randomly drawn.

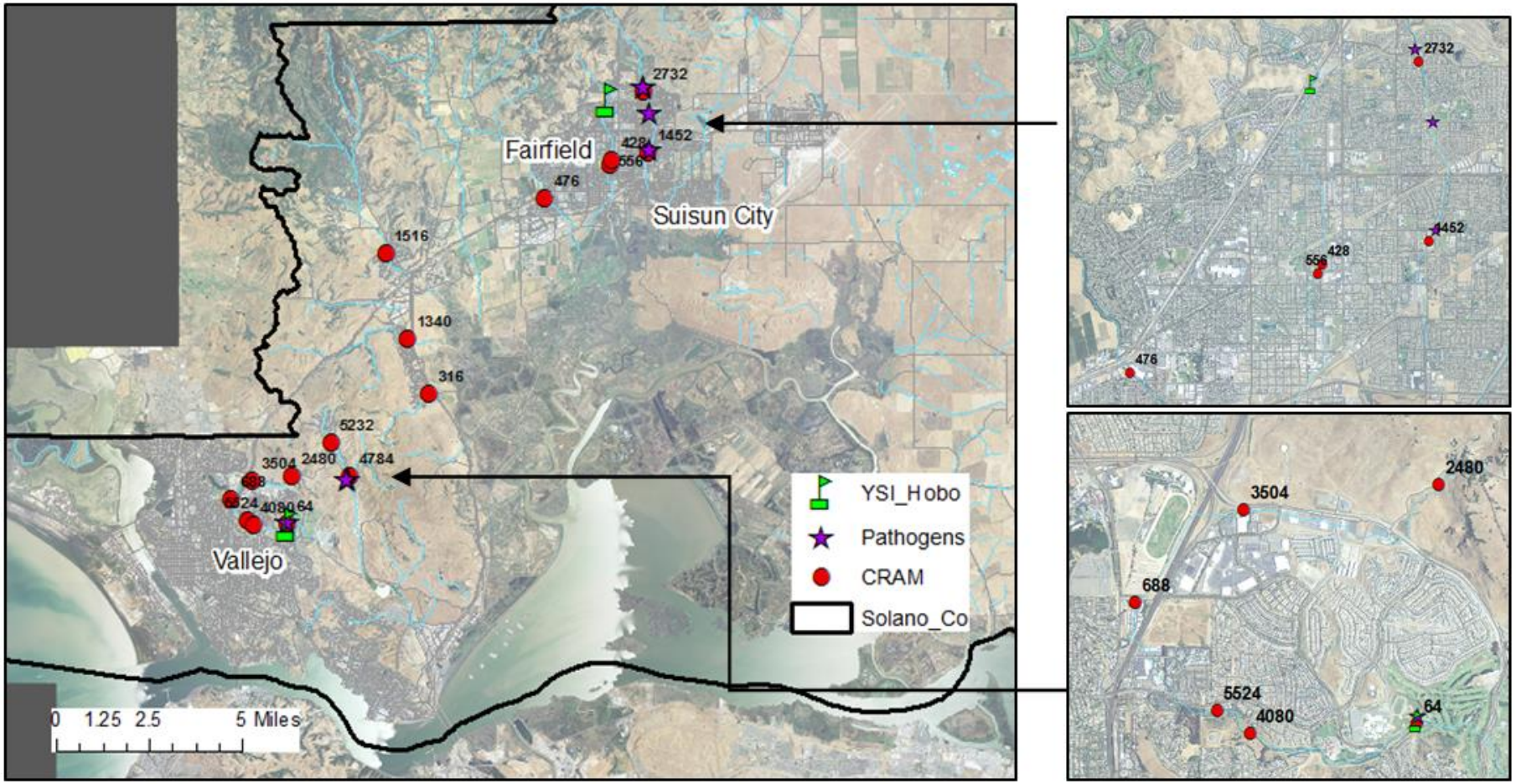
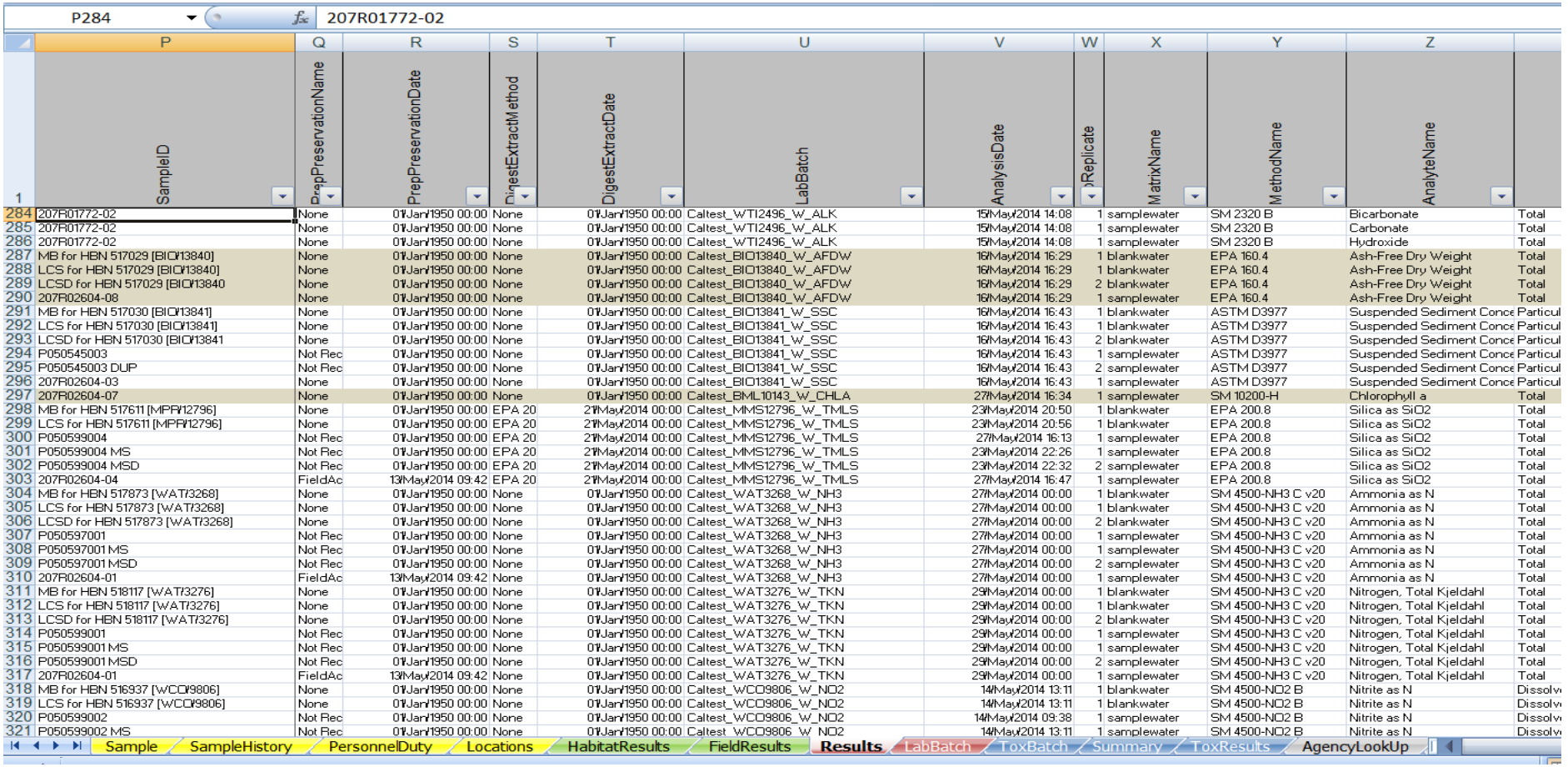


Figure 2-1. Targeted sites monitored in Solano County in Water Year 2013.

Pathogens, continuous water quality and continuous temp, and stream surveys can be sampled at sites chosen by the permittees.

Background and training needed for RCD staff

- In-class and in-field training from DFW on SWAMP bioassessment protocols
- In-class and in-field training from CRAM
- Proficiency in MS Access and Excel



P284 | 207R01772-02

	P	Q	R	S	T	U	V	W	X	Y	Z	
1	SampleID	PrepPreservationName	PrepPreservationDate	DigestExtractMethod	DigestExtractDate	LabBatch	AnalysisDate	Replicate	MatrixName	MethodName	AnalyteName	
284	207R01772-02	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WTI2496_W_ALK	15/May/2014 14:08	1	samplewater	SM 2320 B	Bicarbonate	Total
285	207R01772-02	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WTI2496_W_ALK	15/May/2014 14:08	1	samplewater	SM 2320 B	Carbonate	Total
286	207R01772-02	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WTI2496_W_ALK	15/May/2014 14:08	1	samplewater	SM 2320 B	Hydroxide	Total
287	MB for HBN 517029 [BIO/13840]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_BIO13840_W_AFDW	16/May/2014 16:29	1	blankwater	EPA 160.4	Ash-Free Dry Weight	Total
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289	LCSD for HBN 517029 [BIO/13840	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_BIO13840_W_AFDW	16/May/2014 16:29	2	blankwater	EPA 160.4	Ash-Free Dry Weight	Total
290	207R02604-08	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_BIO13840_W_AFDW	16/May/2014 16:29	1	samplewater	EPA 160.4	Ash-Free Dry Weight	Total
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293	LCSD for HBN 517030 [BIO/13841	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_BIO13841_W_SSC	16/May/2014 16:43	2	blankwater	ASTM D3977	Suspended Sediment Conce	Particul
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296	207R02604-03	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_BIO13841_W_SSC	16/May/2014 16:43	1	samplewater	ASTM D3977	Suspended Sediment Conce	Particul
297	207R02604-07	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_BML10143_W_CHLA	27/May/2014 16:34	1	samplewater	SM 10200-H	Chlorophyll a	Total
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302	P050599004 MSD	Not Rec	01/Jan/1950 00:00	EPA 20	21/May/2014 00:00	Caltest_MMS12796_W_TMLS	23/May/2014 22:32	2	samplewater	EPA 200.8	Silica as SiO2	Total
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304	MB for HBN 517873 [WAT/3268]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3268_W_NH3	27/May/2014 00:00	1	blankwater	SM 4500-NH3 C v20	Ammonia as N	Total
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306	LCSD for HBN 517873 [WAT/3268]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3268_W_NH3	27/May/2014 00:00	2	blankwater	SM 4500-NH3 C v20	Ammonia as N	Total
307	P050597001	Not Rec	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3268_W_NH3	27/May/2014 00:00	1	samplewater	SM 4500-NH3 C v20	Ammonia as N	Total
308	P050597001 MS	Not Rec	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3268_W_NH3	27/May/2014 00:00	1	samplewater	SM 4500-NH3 C v20	Ammonia as N	Total
309	P050597001 MSD	Not Rec	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3268_W_NH3	27/May/2014 00:00	2	samplewater	SM 4500-NH3 C v20	Ammonia as N	Total
310	207R02604-01	FieldAc	13/May/2014 09:42	None	01/Jan/1950 00:00	Caltest_WAT3268_W_NH3	27/May/2014 00:00	1	samplewater	SM 4500-NH3 C v20	Ammonia as N	Total
311	MB for HBN 518117 [WAT/3276]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3276_W_TKN	29/May/2014 00:00	1	blankwater	SM 4500-NH3 C v20	Nitrogen, Total Kjeldahl	Total
312	LCS for HBN 518117 [WAT/3276]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WAT3276_W_TKN	29/May/2014 00:00	1	blankwater	SM 4500-NH3 C v20	Nitrogen, Total Kjeldahl	Total
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317	207R02604-01	FieldAc	13/May/2014 09:42	None	01/Jan/1950 00:00	Caltest_WAT3276_W_TKN	29/May/2014 00:00	1	samplewater	SM 4500-NH3 C v20	Nitrogen, Total Kjeldahl	Total
318	MB for HBN 516937 [WCO/9806]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WCO9806_W_NO2	14/May/2014 13:11	1	blankwater	SM 4500-NO2 B	Nitrite as N	Dissolv
319	LCS for HBN 516937 [WCO/9806]	None	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WCO9806_W_NO2	14/May/2014 13:11	1	blankwater	SM 4500-NO2 B	Nitrite as N	Dissolv
320	P050599002	Not Rec	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WCO9806_W_NO2	14/May/2014 09:38	1	samplewater	SM 4500-NO2 B	Nitrite as N	Dissolv
321	P050599002 MS	Not Rec	01/Jan/1950 00:00	None	01/Jan/1950 00:00	Caltest_WCO9806_W_NO2	14/May/2014 13:11	1	samplewater	SM 4500-NO2 B	Nitrite as N	Dissolv

Sample | SampleHistory | PersonnelDuty | Locations | HabitatResults | FieldResults | Results | LabBatch | ToxBatch | Summary | ToxResults | AgencyLookUp

CRAM | CRAM DATA | DATA ENTRY | TRAINING | RESOURCES & DOCUMENTS | STEERING COMMITTEE | ABOUT | CONTACT US | Log In

California Rapid Assessment Method

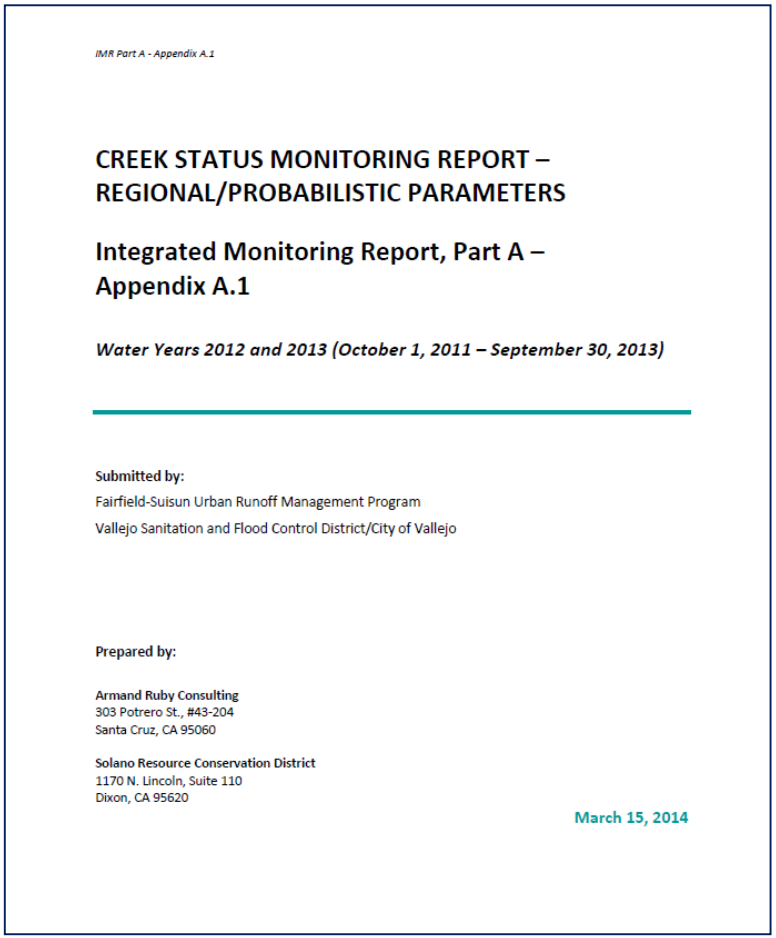
CRAM is a cost-effective and scientifically defensible rapid assessment method for monitoring the conditions of wetlands throughout California. It is designed for assessing ambient conditions within watersheds, regions, and throughout the State. It can also be used to assess the performance of compensatory mitigation projects and restoration projects.

CRAM was required in 2013/2014.

For the new permit, we will be doing trash assessments instead in 2017-2020.

In a sampling year, we can budget for:

- Approximately 550 office hours (project managers and technicians) and 300 field hours (project managers and technicians)



IMR Part A - Appendix A.1

CREEK STATUS MONITORING REPORT – REGIONAL/PROBABILISTIC PARAMETERS

Integrated Monitoring Report, Part A – Appendix A.1

Water Years 2012 and 2013 (October 1, 2011 – September 30, 2013)

Submitted by:

Fairfield-Suisun Urban Runoff Management Program

Vallejo Sanitation and Flood Control District/City of Vallejo

Prepared by:

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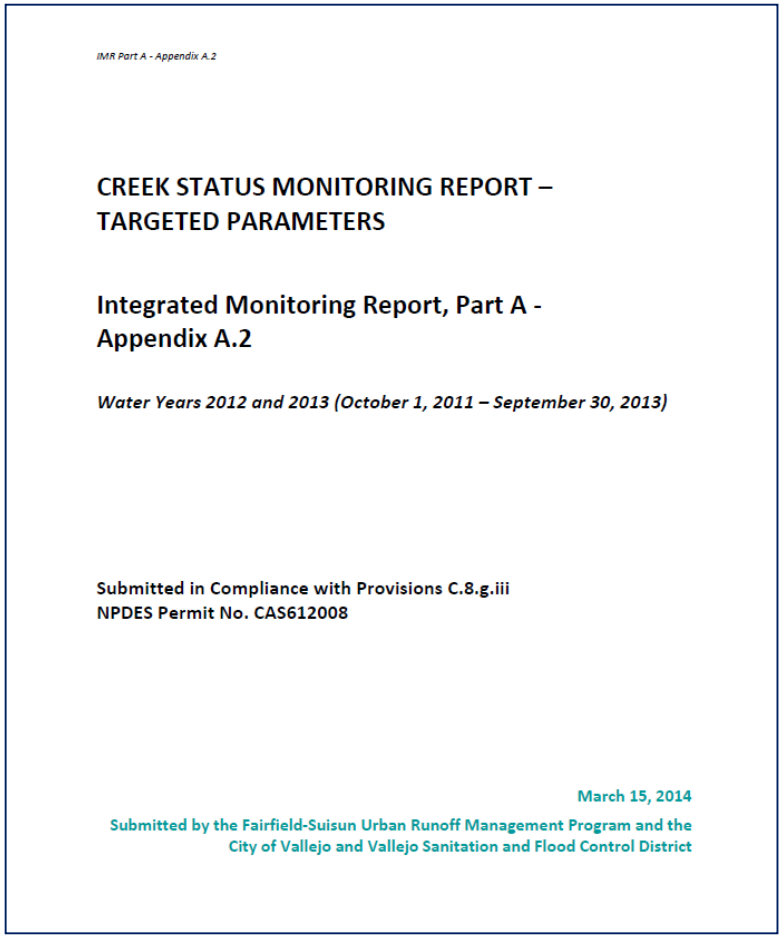
303 Potrero St., #43-204
Santa Cruz, CA 95060

Solano Resource Conservation District
1170 N. Lincoln, Suite 110
Dixon, CA 95620

March 15, 2014



IMR Part A - Appendix A.2

CREEK STATUS MONITORING REPORT – TARGETED PARAMETERS

Integrated Monitoring Report, Part A - Appendix A.2

Water Years 2012 and 2013 (October 1, 2011 – September 30, 2013)

Submitted in Compliance with Provisions C.8.g.iii
NPDES Permit No. CAS612008

March 15, 2014

Submitted by the Fairfield-Suisun Urban Runoff Management Program and the City of Vallejo and Vallejo Sanitation and Flood Control District

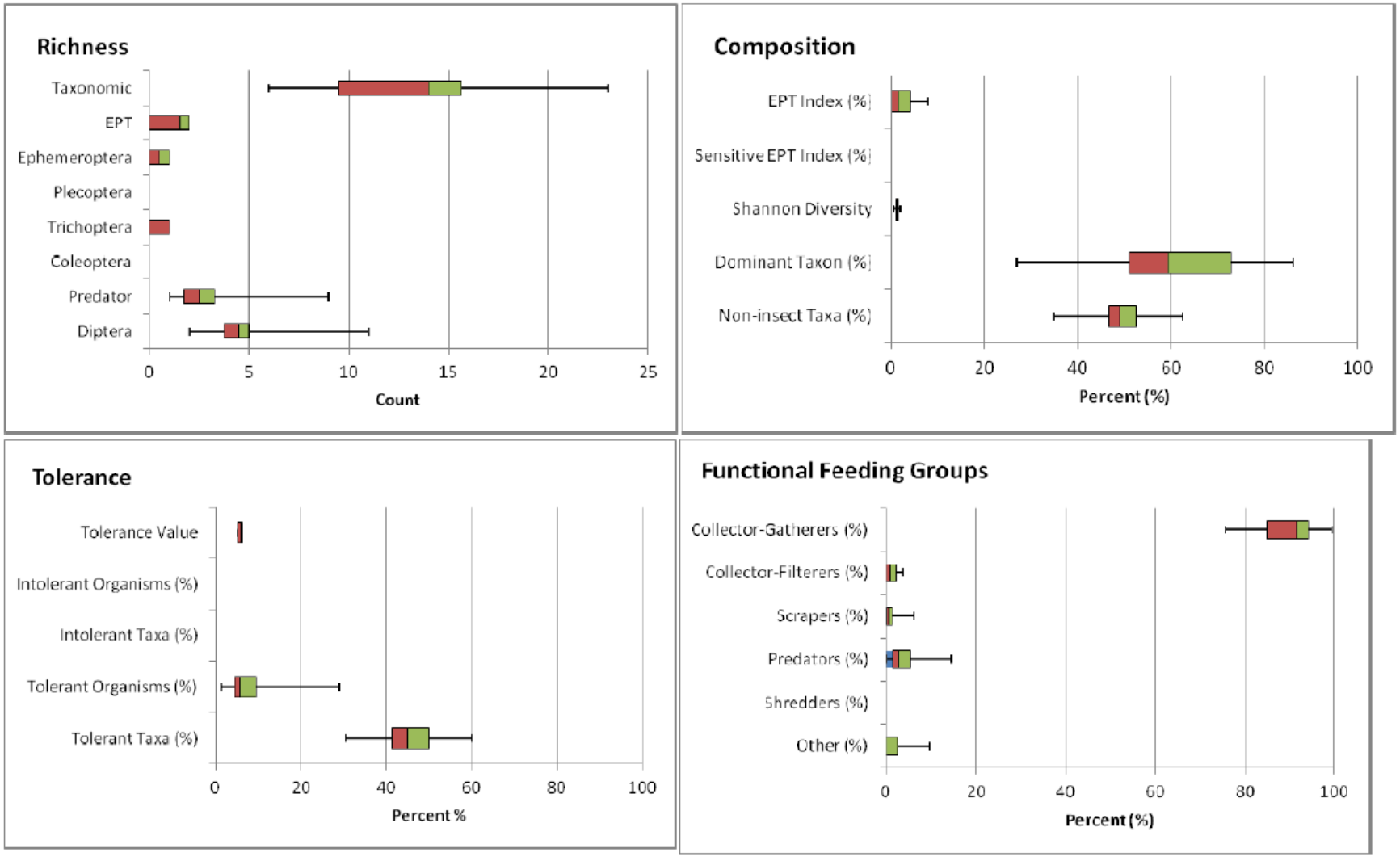


Figure 4-2. Benthic macroinvertebrate metric values derived from Solano County sites sampled in Water Year 2013. Statistics include minimum (lower whisker), maximum (upper whisker), 25th percentile (lower box), median (box midline) and 75th percentile (upper box).

SWAMP BMI samples – mean of all 8 streams

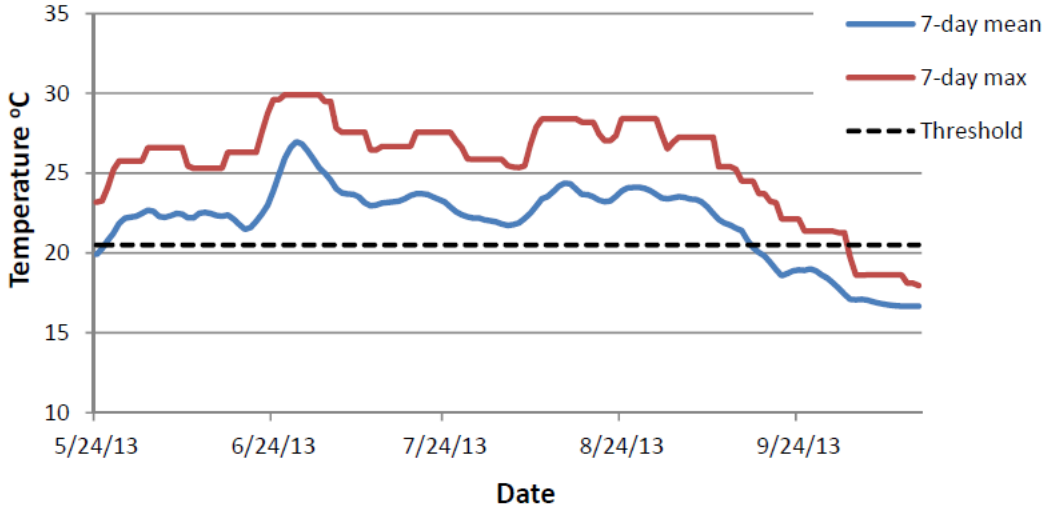


Figure 4-2. Seven day average maximum daily water temperature (MWAT) data collected with the HOBO data logger at Union Avenue Creek in Fairfield May 24 - Sep 30, 2013.

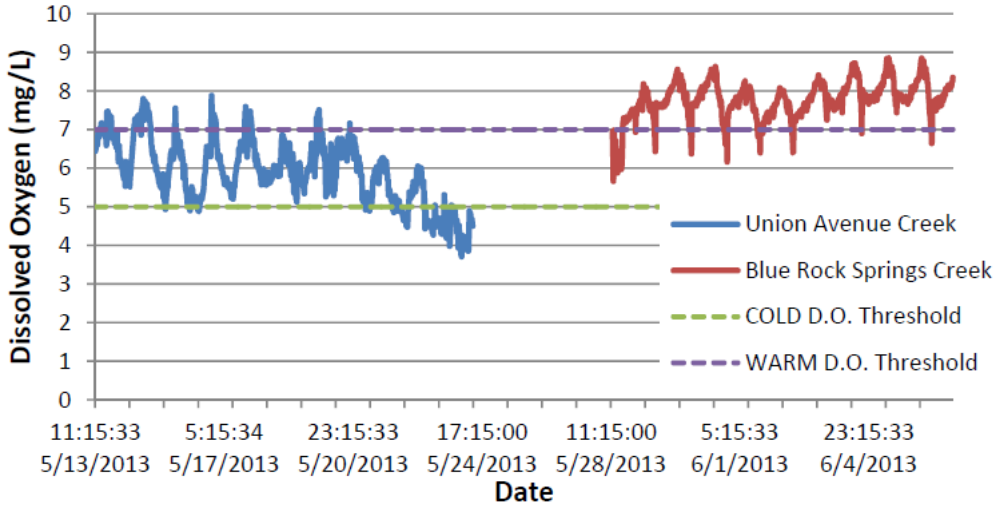
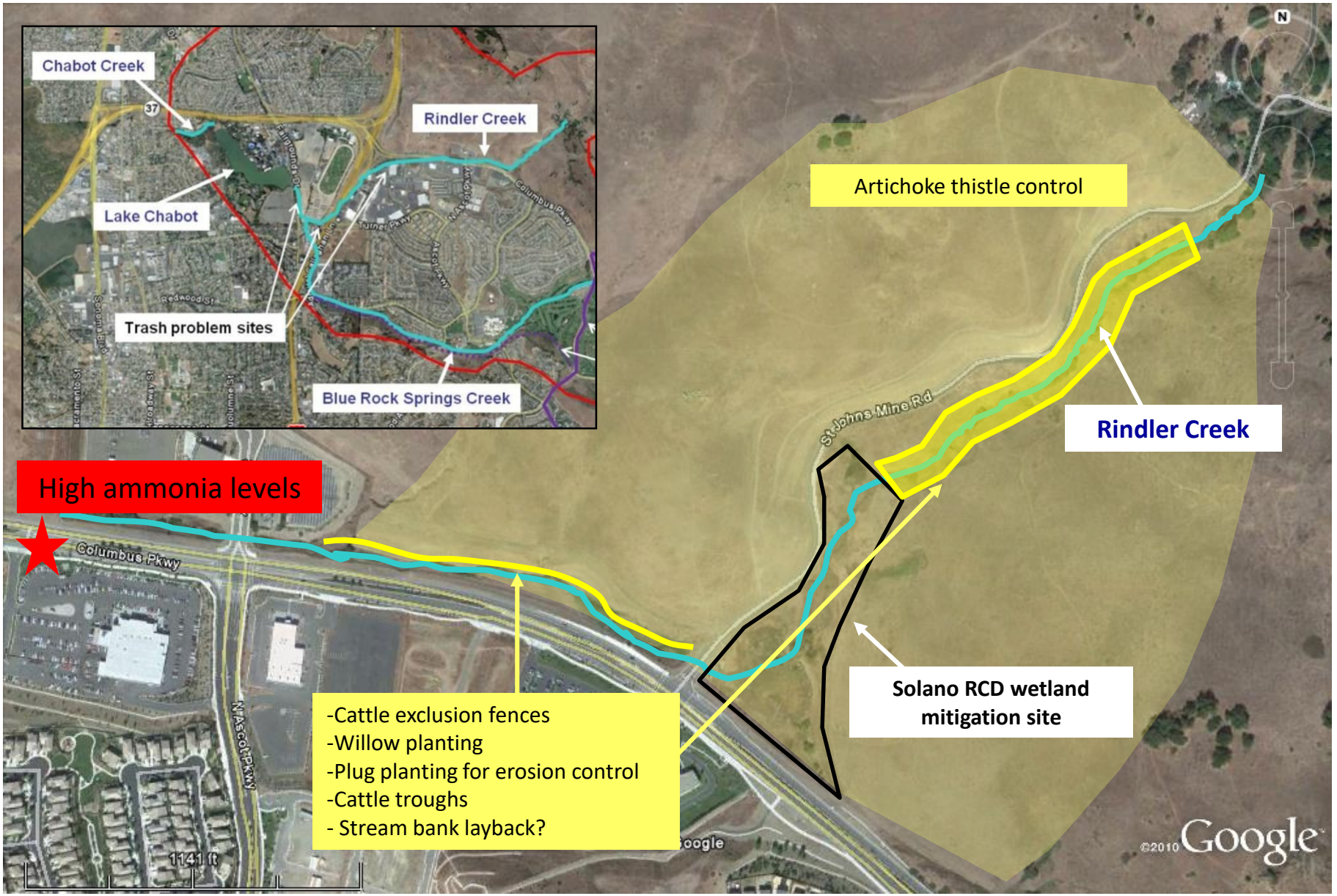


Figure 4-3b. Continuous water quality data (DO) collected May/June 2013 at Union Avenue Creek and Blue Rock Springs Creek.

Water quality triggers met in WY 2013

Fairfield-Suisun	Vallejo
E coli	E coli
Fecal coliform	Fecal coliform
Sediment – heavy metals	Sediment – heavy metals
Sediment toxicity	
Sediment chem - pyrethroids	
Chlorine	Ammonia
Continuous temp	
Continuous dissolved oxygen	

Rindler Creek ammonia trigger:



Why this partnership works well

- It is very cost-effective for the permittees – we are cheap!
- The Regional Board is happy, it shows collaboration at the local level
- It is reliable and predictable contract income for the RCD
- The RCD is familiar with many of the streams and landowners already, there is good overlap with other RCD work
- When an exceedance occurs, the RCD is well positioned to help permittees fix the problem – shade/restore the streams, conduct outreach on things like home pesticide use, exclude cattle from streams, etc.

Questions?

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Watershed Project Manager

Solano Resource Conservation District

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