

Proposed Scope, Schedule, and Budget for the Prado Basin Habitat Sustainability Program (PBHSP) for Fiscal Year 2018-19

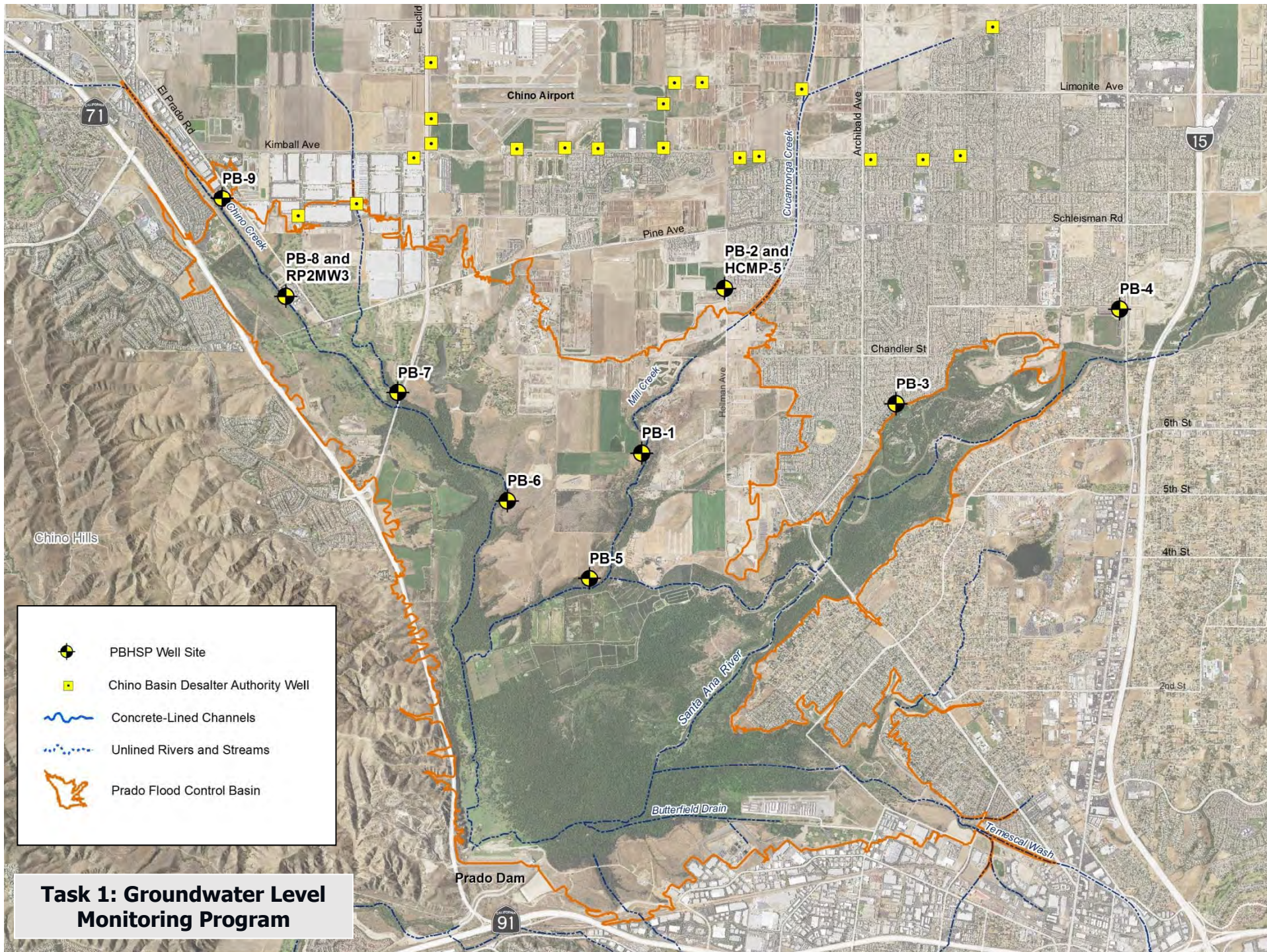
*Prado Basin Habitat Sustainability Committee Meeting
March 13, 2018*

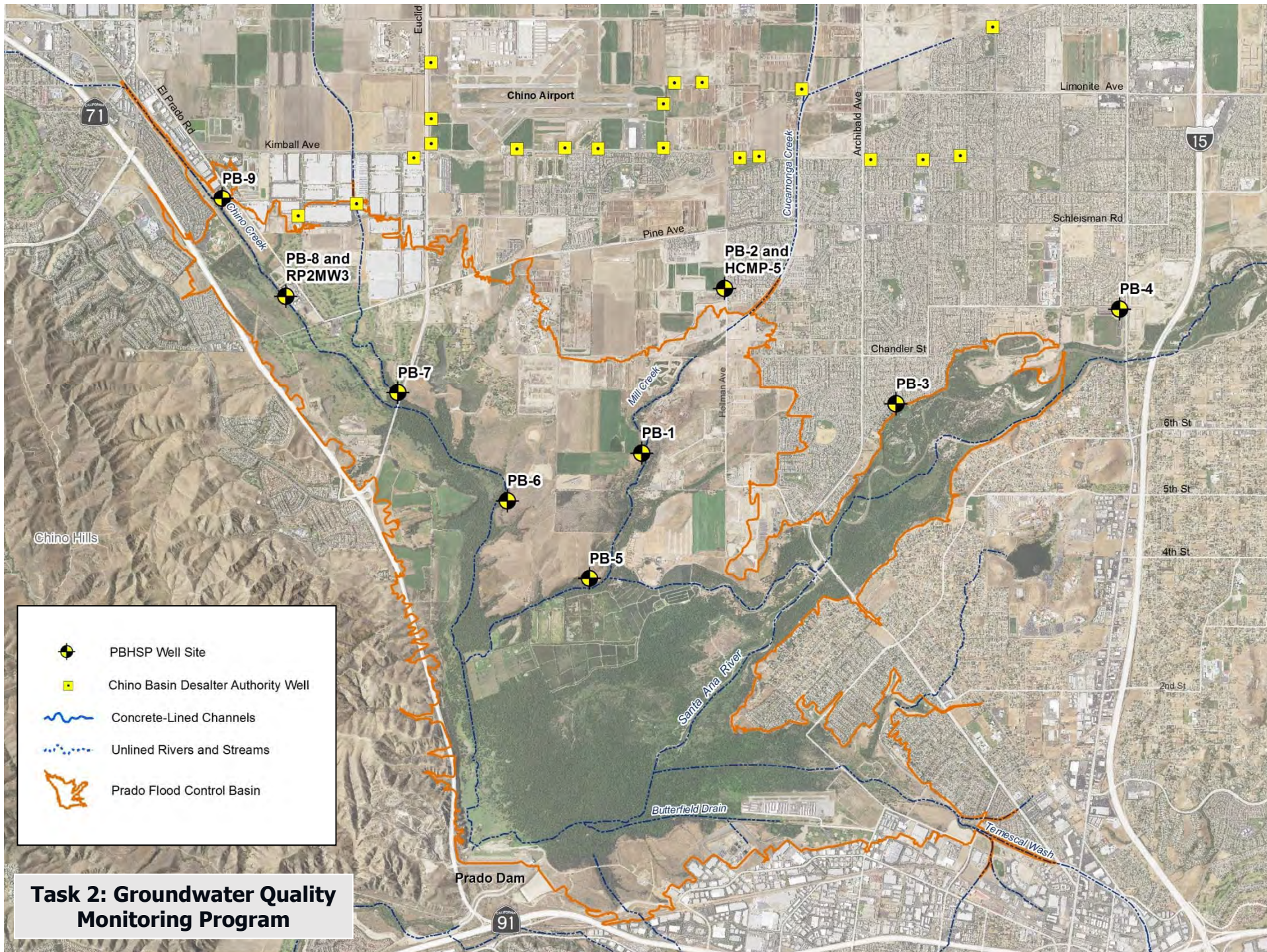


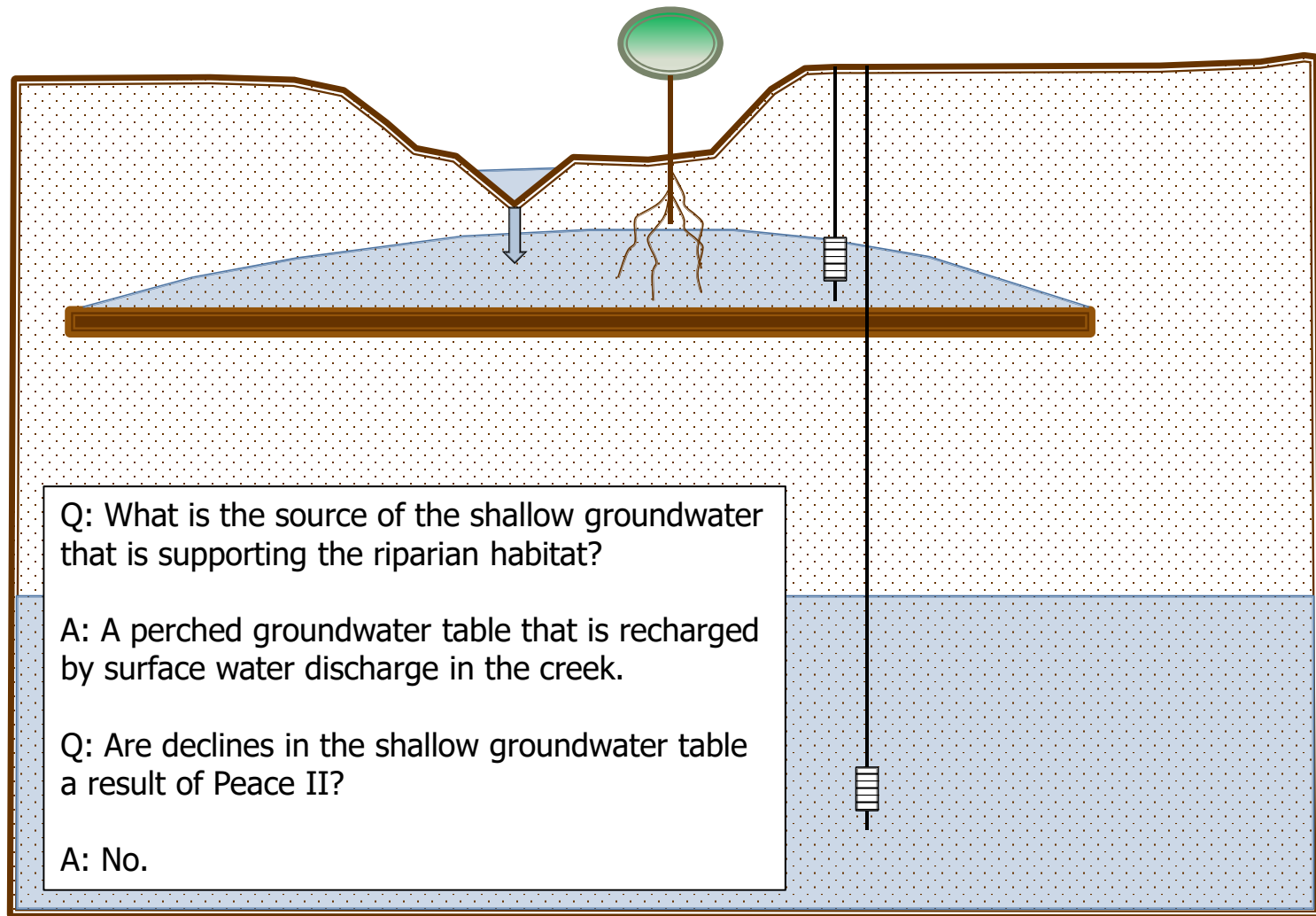
Table 1
Work Breakdown Structure and Cost Estimate
Prado Basin Habitat Sustainability Program -- FY 2018/19

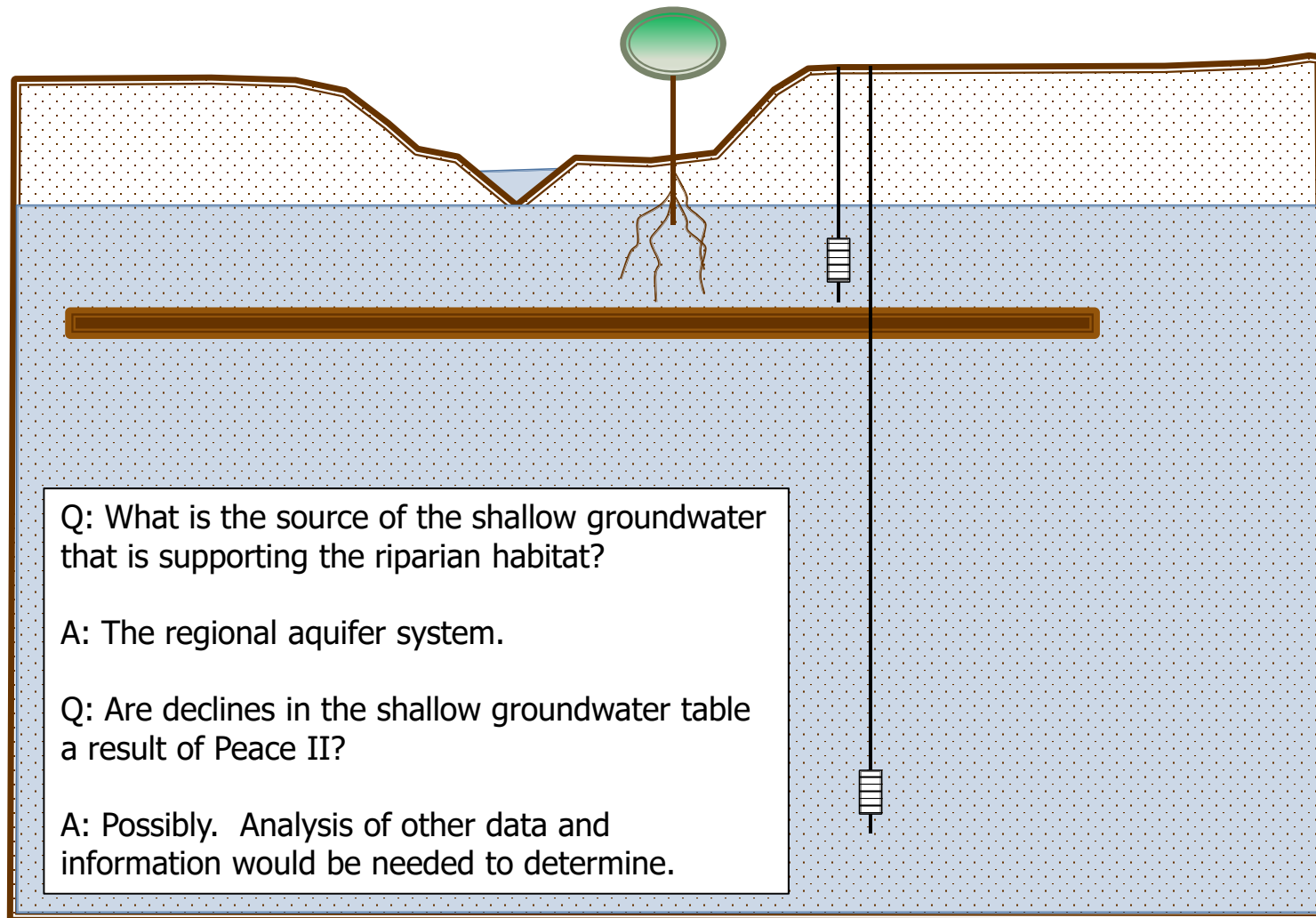
Task Description	No. of sites	Labor Total		Other Costs						Notes	Totals						
		Person Days	Total	Travel	Equip. Rental	Lab	Outside Pro	Equip	Total		Recommended Budget 2018/19	Budget 2017/18	Budget 2016/17 (Spent)	Difference 2017/18 to 2018/19	Difference 2016/17 to 2018/19	IEUA Share 2018/19	CBWM Share 2018/19
Task 1: Groundwater Level Monitoring Program		11.4	\$12,856						\$782		\$13,638	\$11,931	\$11,600	\$1,707	\$2,038	-	\$13,638
1.1 Collect Transducer Data from PBHSP Wells (Quarterly)	18	5.0	\$4,792	\$590	\$192				\$782		\$5,574						
1.2 Collect, Check, and Upload Transducer Data from PBHSP Wells (Quarterly)	18	6.4	\$8,064						\$0		\$8,064						
Task 2: Groundwater Quality Monitoring Program		6.6	\$13,612						\$10,428		\$24,040	\$49,055	\$67,422	-\$25,015	-\$43,382	-	\$24,040
2.1 Initiate a Pilot Test of High-Frequency Water Quality Monitoring using EC and Temperature Probes	4	3.3	\$3,879	\$236				\$6,100	\$6,336		\$10,215						
2.2 Collect, Check, and Upload High-Frequency Probe Data from Pilot Monitoring Program (Quarterly)	4	2.4	\$3,123						\$0		\$3,123						
2.3 Collect, Check, and Upload Grab Sample General Mineral Chemistry Data (Quarterly)	4	6.6	\$6,610	\$472	\$820	\$2,800			\$4,092		\$10,702						
Task 3: Surface Water Monitoring Program		2.8	\$12,940						\$2,033		\$14,973	\$3,744	\$3,900	\$11,229	\$11,173	-	\$14,973
3.1 Collect, Check, and Upload Surface Water Discharge and Quality Data from POTWs, and Dam Level data from the ACOE (Annual)		2.0	\$2,470						\$0		\$2,470						
3.2 Collect, Check, and Upload Surface Water Discharge and Quality Data from USGS gaging stations (Annual)		0.8	\$1,008						\$0		\$1,008						
3.3 Design and Conduct a Surface Water-Quality Monitoring at Chino and Mill Creeks (Quarterly)	2	7.0	\$6,793	\$525	\$108	\$1,400			\$2,033		\$8,826						
3.4 Check and Upload Grab Surface Water Quality Field and Lab Data (Quarterly)	2	2.0	\$2,669						\$0		\$2,669						
Task 4: Riparian Habitat Monitoring Program		22.5	\$36,194						\$20,000		\$56,194	\$50,342	\$145,927	\$5,852	-\$89,733	\$28,097.2	\$28,097.2
4.1 Perform a Custom Flight to Acquire a High-Resolution 2018 Air Photo of the Prado Basin		0.8	\$1,224				\$10,000		\$10,000	1	\$11,224						
4.2 Catalog, Check, and Digitize the Extent of the Riparian Vegetation in the 2018 Air Photo of the Prado Basin		3.7	\$5,234						\$0		\$5,234						
4.3 Collect, Check, and Upload 2018 Landsat NDVI Data to the PBHSP Database		5.0	\$7,240						\$0		\$7,240						
4.4 Research and Refine Regional Monitoring Methods		4.0	\$7,008						\$0		\$7,008						
4.5 Research and Refine Site-Specific Monitoring Methods		6.0	\$10,432				\$10,000		\$10,000		\$20,432						
4.6 Plan and Coordinate the Site-Specific Monitoring Event for Summer 2019		3.0	\$5,056						\$0		\$5,056						
Task 5: Climate Monitoring Program		1.0	\$1,479						\$300		\$1,779	\$1,756	\$1,700	\$23	\$79	\$889.60	\$889.60
5.1 Collect, Check, and Upload Climatic Data (Annual)		1.0	\$1,479				\$300		\$300		\$1,779						
Task 6: Prepare Annual Report of the PBHSC		61.0	\$95,747						\$210		\$95,957	\$91,082	\$203,473	\$4,875	-\$107,516	\$47,978.6	\$47,978.6
6.1 Analyze Data and Prepare Admin Draft Report for CBWM/IEUA		44.7	\$70,007						\$0		\$70,007						
6.2 Meet with CBWM/IEUA to Review Admin Draft Report		3.0	\$5,216	\$105					\$105		\$5,321						
6.3 Incorporate CBWM/IEUA Comments and Prepare Draft Report: Submit Draft Report to PBHSC		5.0	\$7,152						\$0		\$7,152						
6.4 Meet with PBHSC to Review Draft Report		3.0	\$5,216	\$105					\$105		\$5,321						
6.5 Incorporate PBHSC Comments and Finalize Report		5.3	\$8,156						\$0		\$8,156						
Task 7: Project Management and Administration		11.8	\$20,282						\$105		\$20,387	\$19,033	\$23,395	\$1,354	-\$3,008	\$10,193.30	\$10,193.30
7.1 Prepare Scope and Budget for FY 2019/20		4.0	\$6,848						\$0		\$6,848						
7.2 Meet with PBHSC to Review Scope and Budget for FY 2019/20		3.0	\$5,216	\$105					\$105		\$5,321						
7.3 Project Administration and Financial Reporting		4.8	\$8,218						\$0		\$8,218						
Totals		232	\$193,110	\$1,548	\$928	\$4,200	\$20,300	\$6,100	\$33,858		\$226,968	\$226,943	\$457,317	\$25	-\$230,349	\$87,159	\$139,810

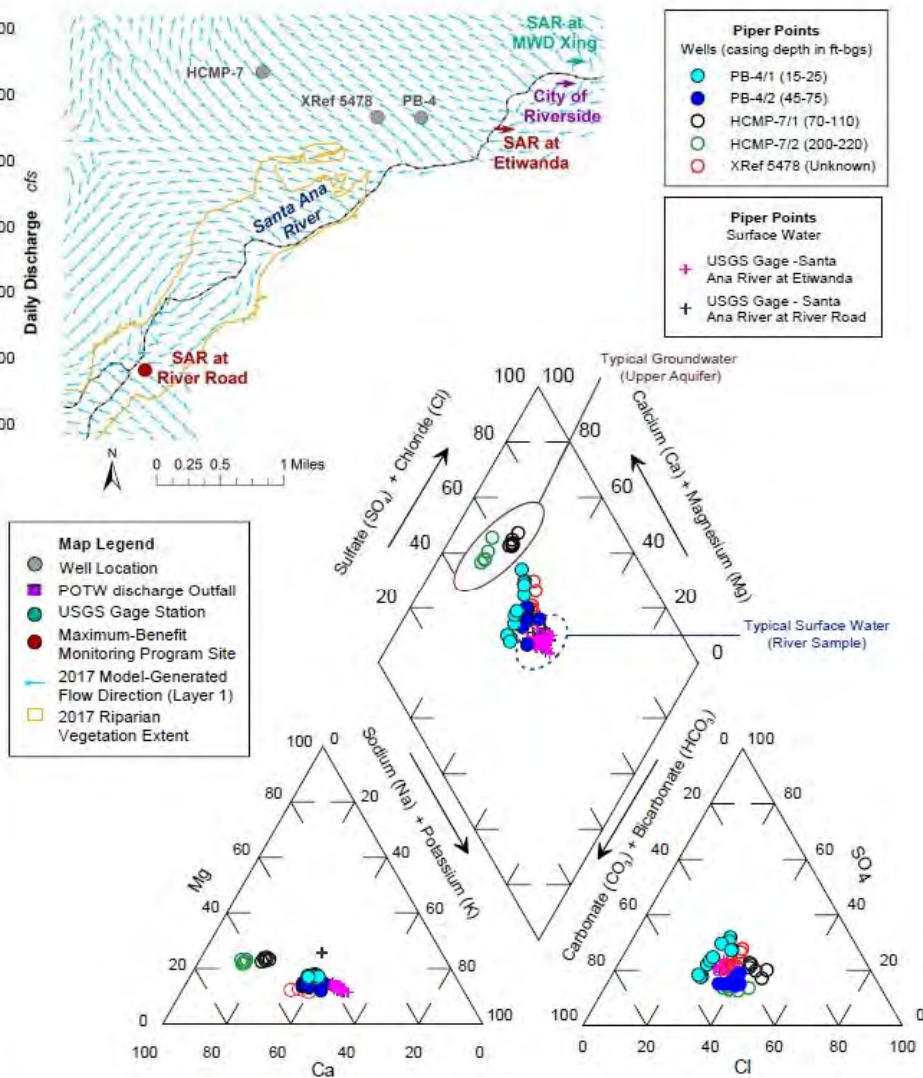
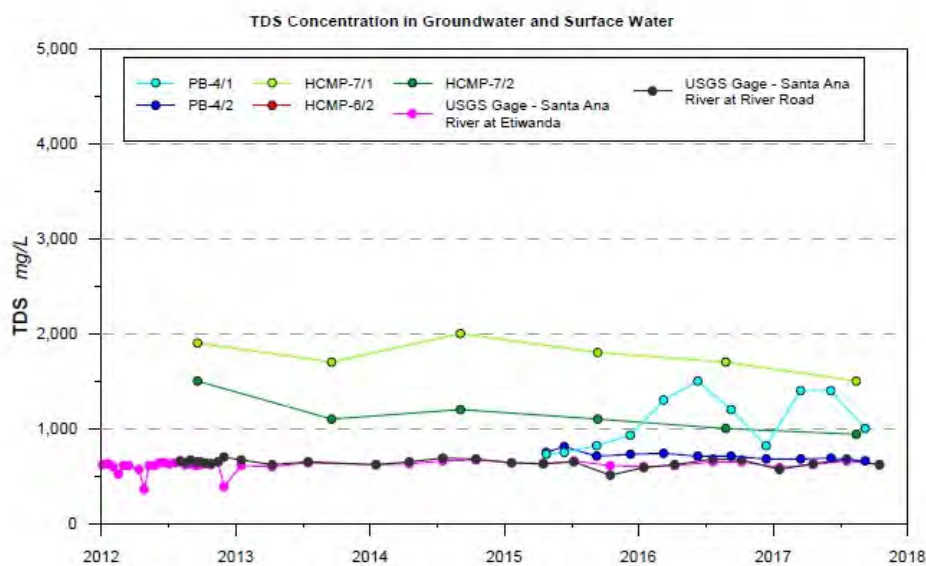
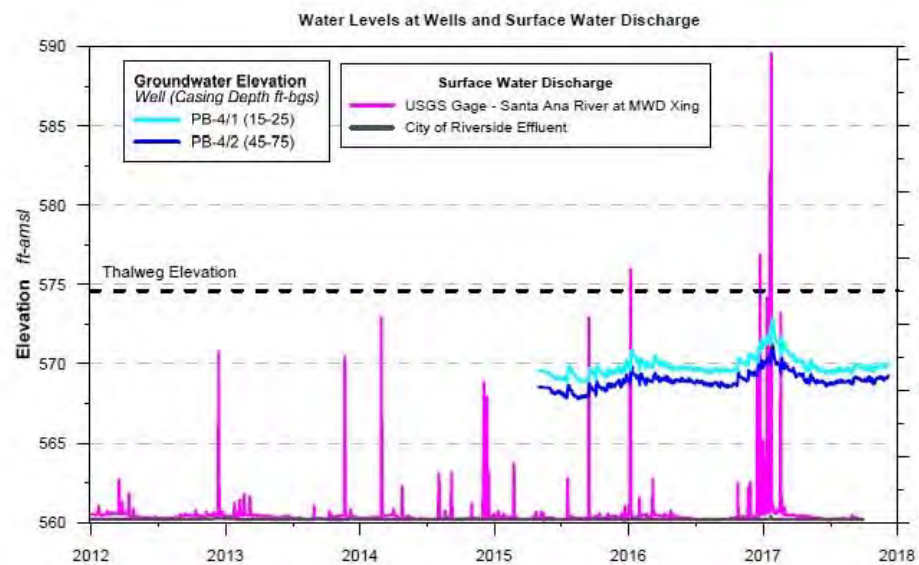
1 - This is half of the cost for the outside professional. OCWD will pay the other half.

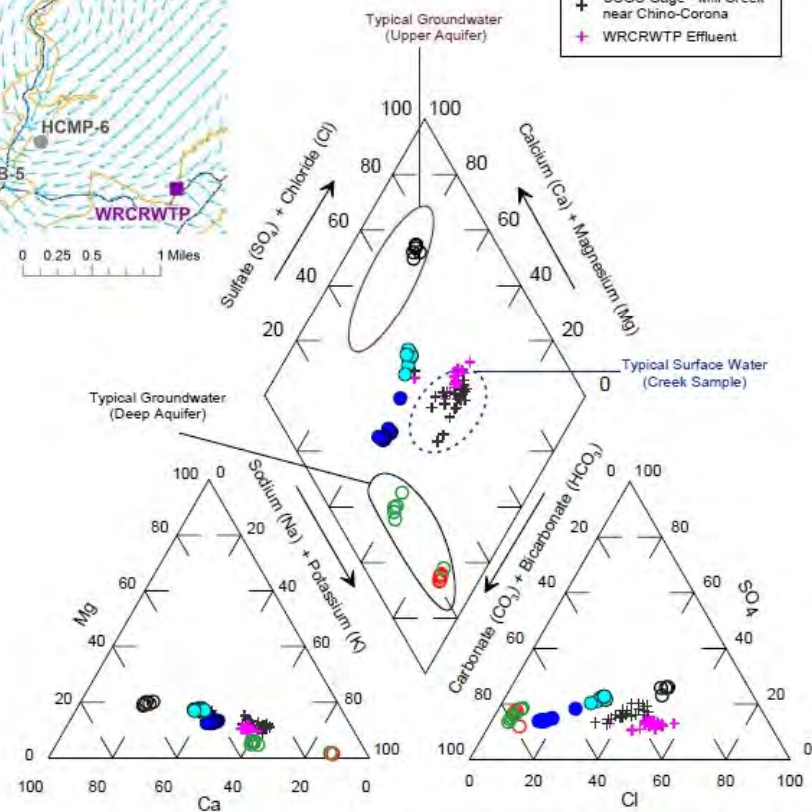
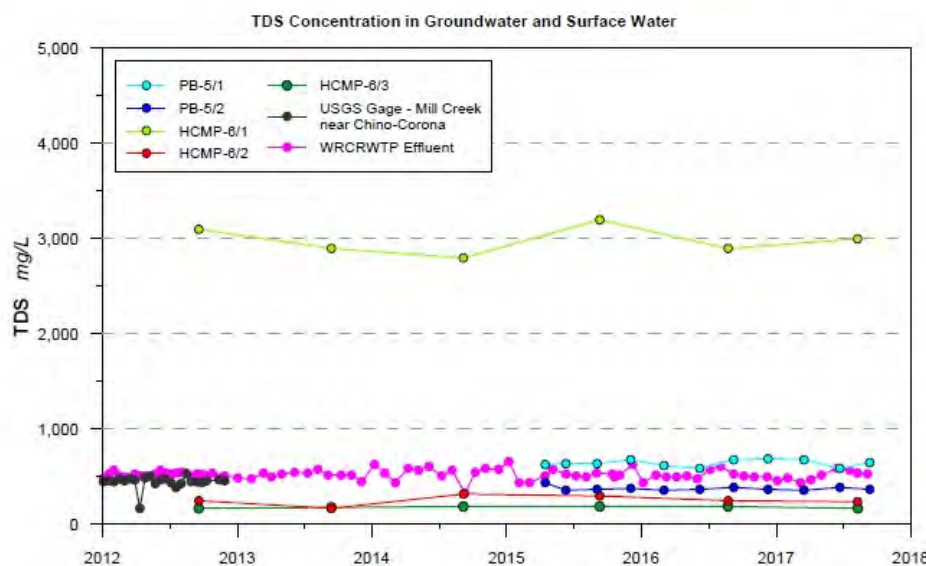
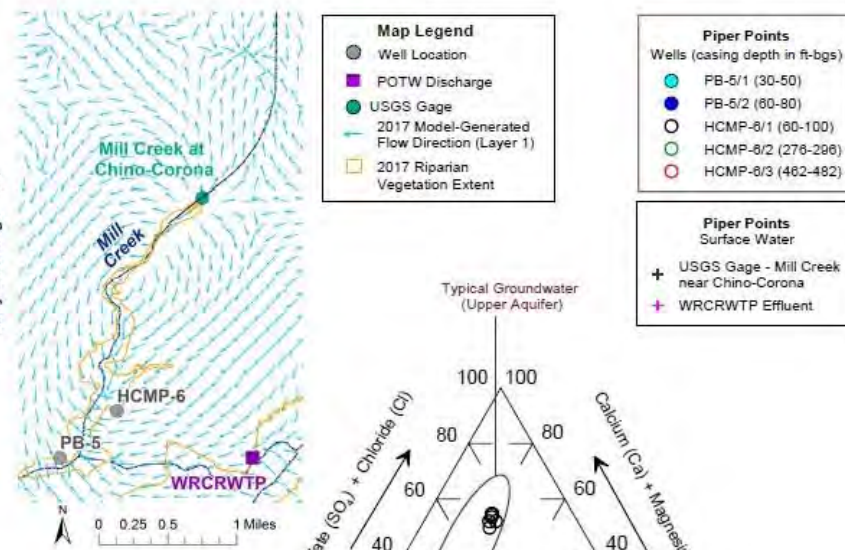
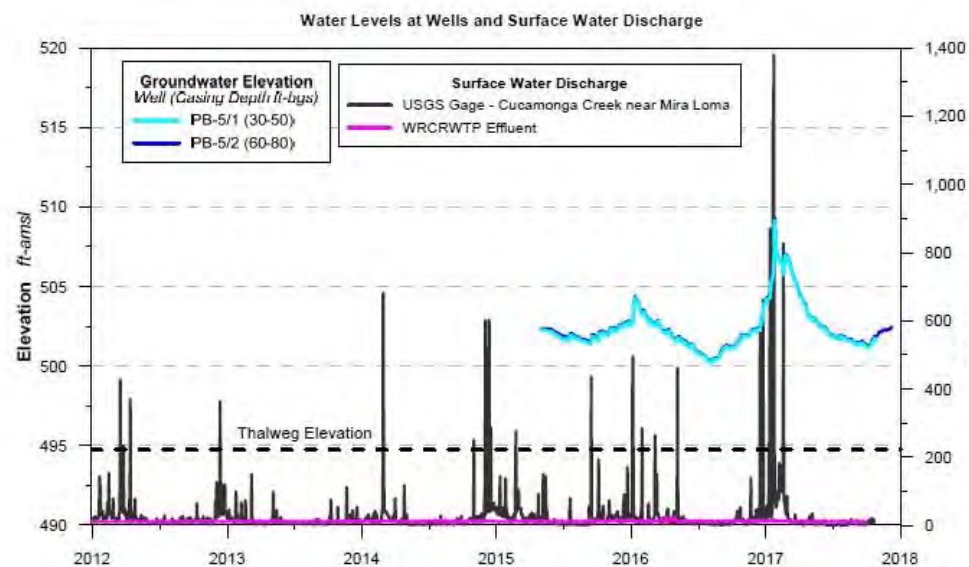








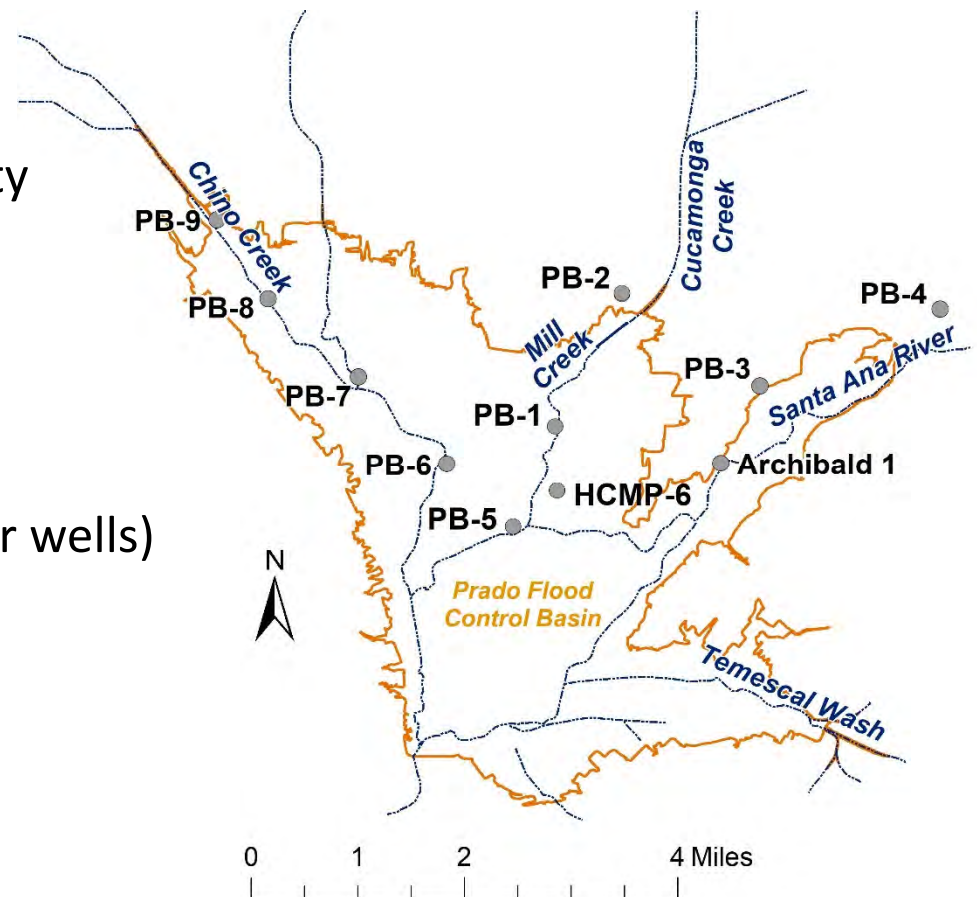


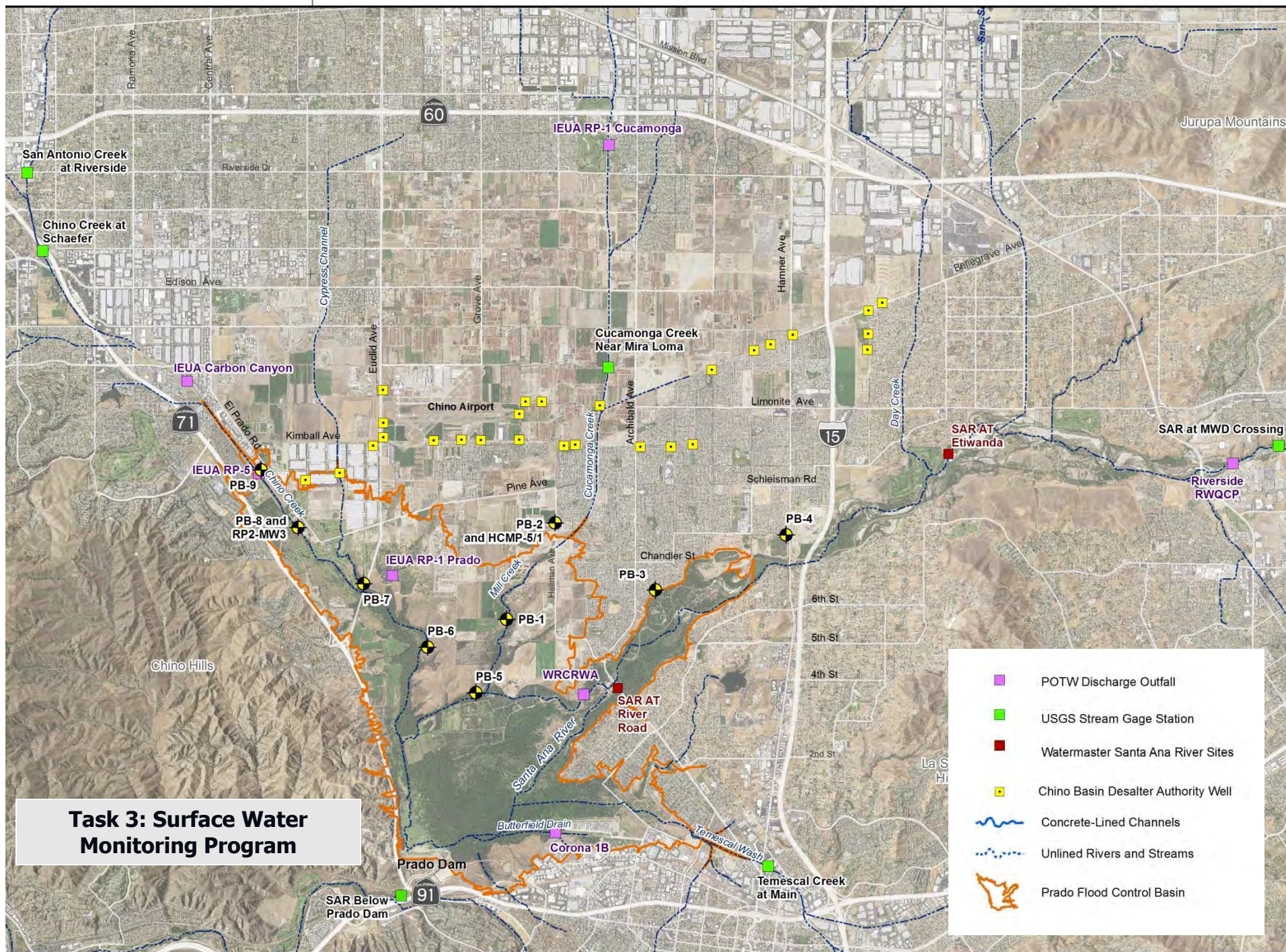


Task 2:

Groundwater Quality Monitoring Program

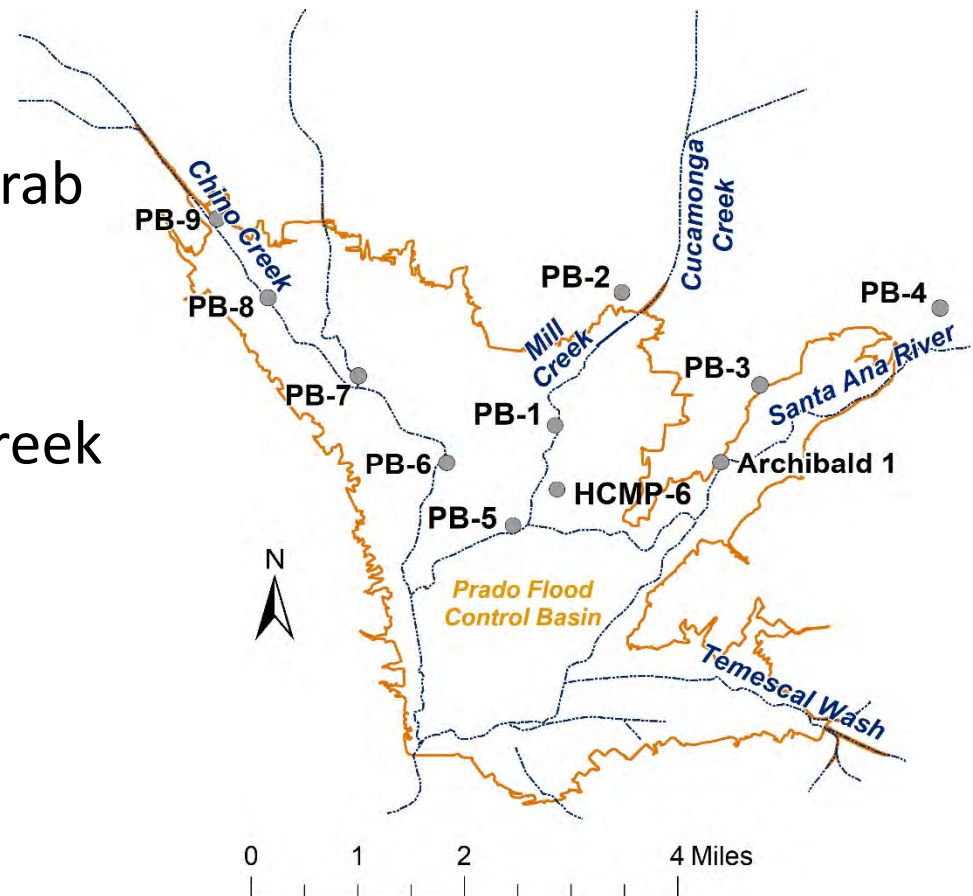
- Recommend discontinuing the current groundwater monitoring program in fiscal year 2017-18 (18 wells).
- Pilot Test (four wells)
 - High-frequency water-quality monitoring with probes (EC, Temperature).
 - Chino Creek and Mill Creek
- Quarterly grab samples (four wells)
- Savings of \$25K





Task 3: Surface Water Quality Monitoring Program

- Task 3.1/3.2 - Collect another year of publicly-available surface-water quality and flow data.
- Task 3.3/3.4 - Quarterly Grab Samples at Two Sites:
 - Mill Creek and Chino Creek
 - \$11,500 - New Effort



Task 4:

Riparian Habitat Monitoring Program

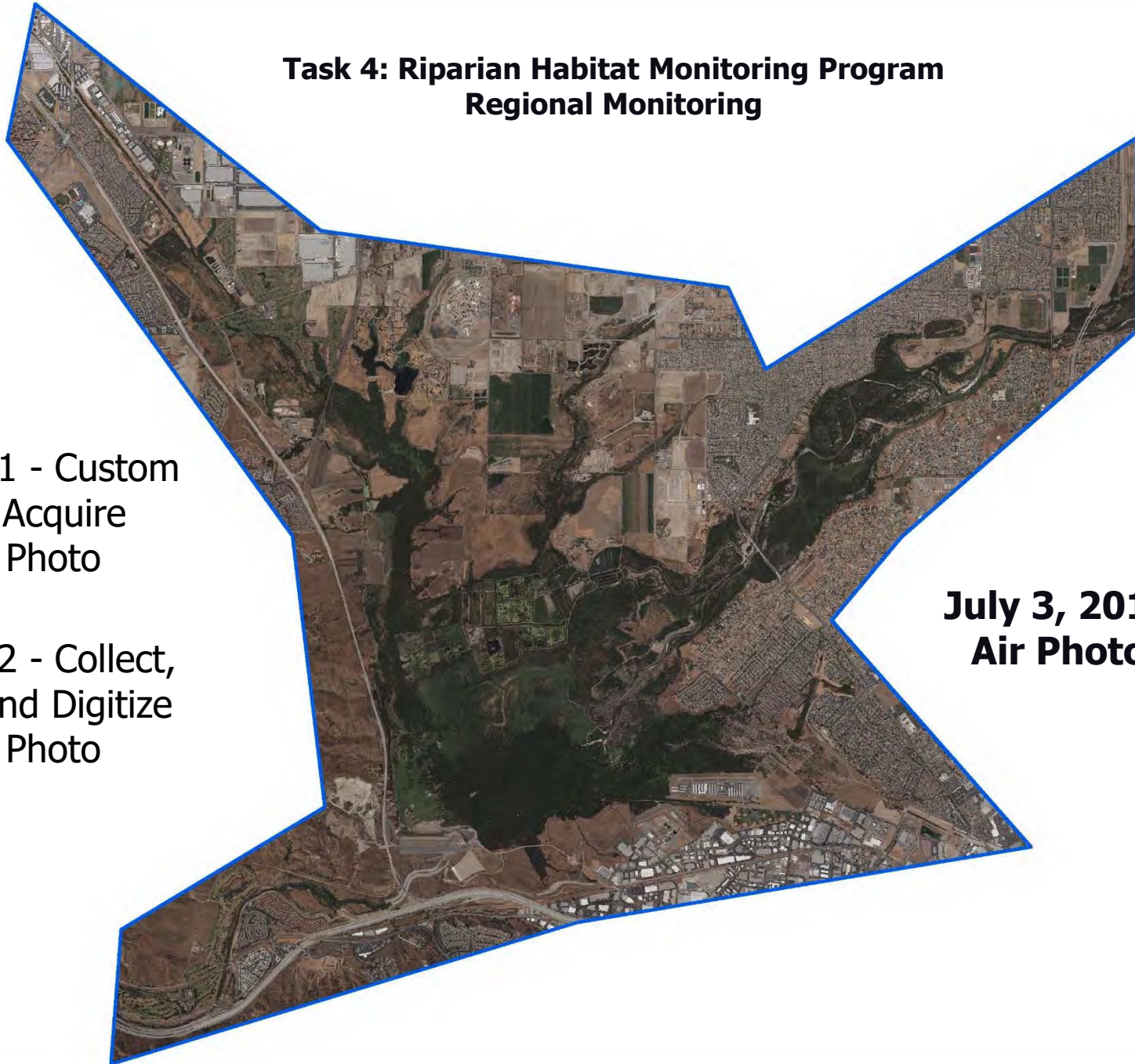
- Objective: Monitor the extent and quality of the riparian habitat.
 - Pre- and post-Peace II implementation
 - Ongoing
- ▶ Two Types:
 - Regional Assessment (sub tasks 4.1 – 4.4)
 - Mapping and analysis using air photos
 - Landsat remote sensing data (NDVI)
 - Site-Specific Assessment (sub tasks 4.5 – 4.6)
 - Vegetation Surveys



Task 4: Riparian Habitat Monitoring Program Regional Monitoring

- Task 4.1 - Custom Flight to Acquire 2018 Air Photo
- Task 4.2 - Collect, Check, and Digitize 2018 Air Photo

**July 3, 2017
Air Photo**



Tasks 4.3

Normalized Difference Vegetation Index (NDVI)

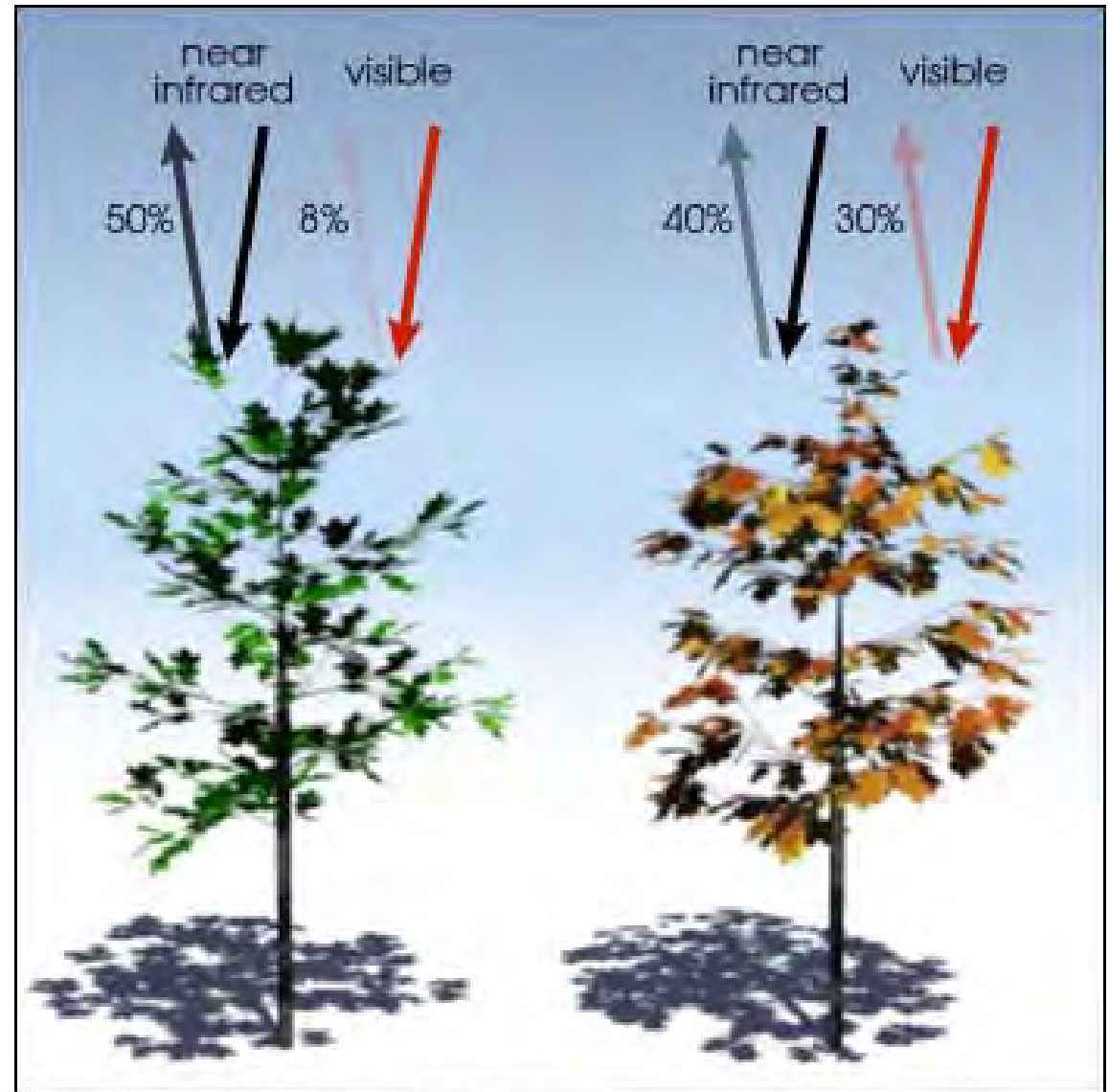
Numerical Indicator – ratio of visible light and near infrared light reflected by the vegetation.

Indication of plant health - greenness correlated with photosynthesis

$$NDVI = \frac{NIR - VIS}{NIR + VIS}$$

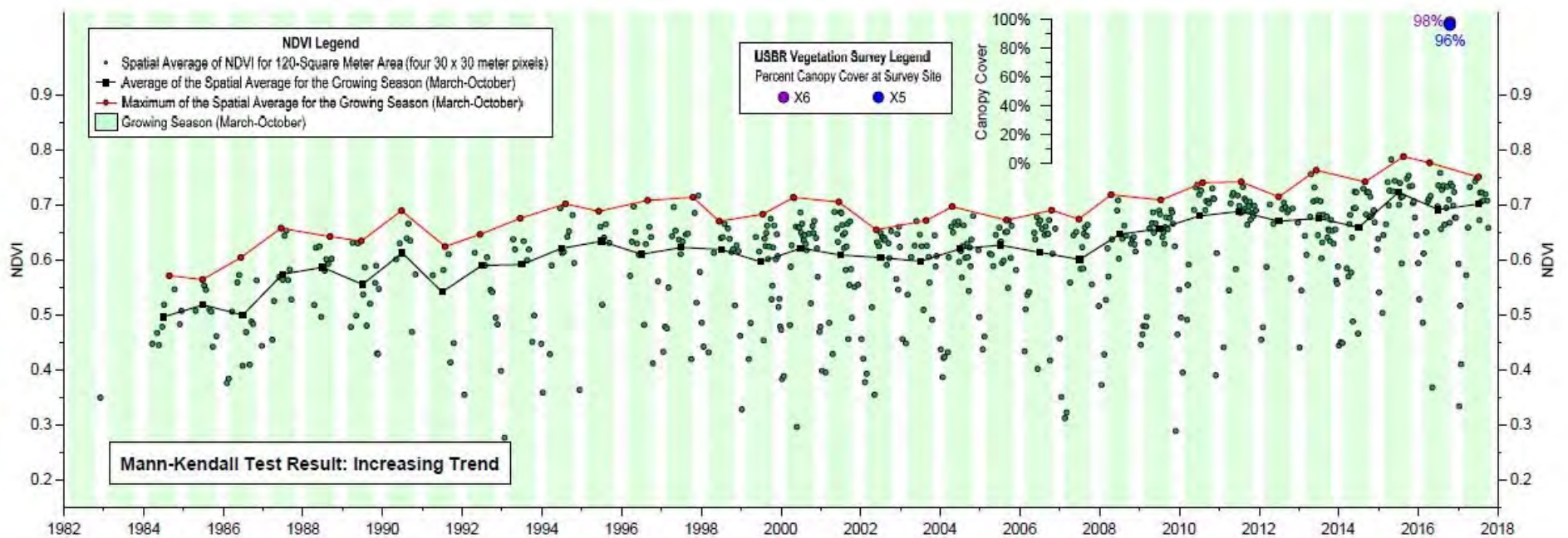
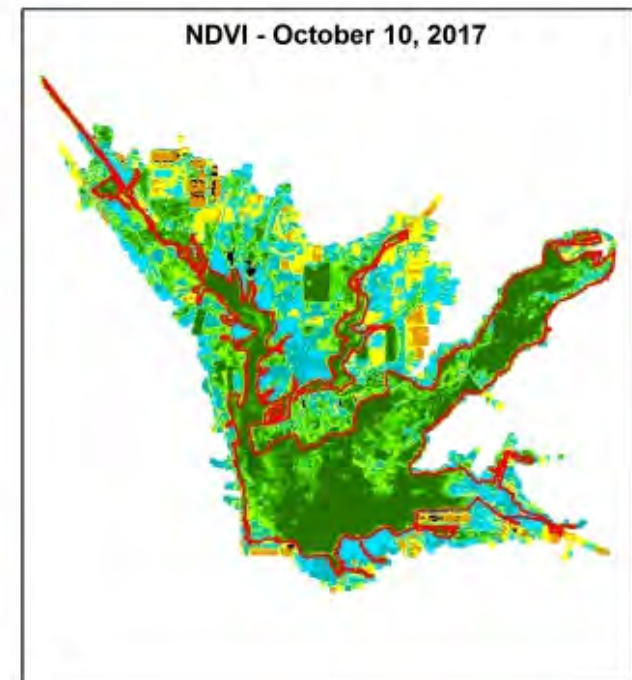
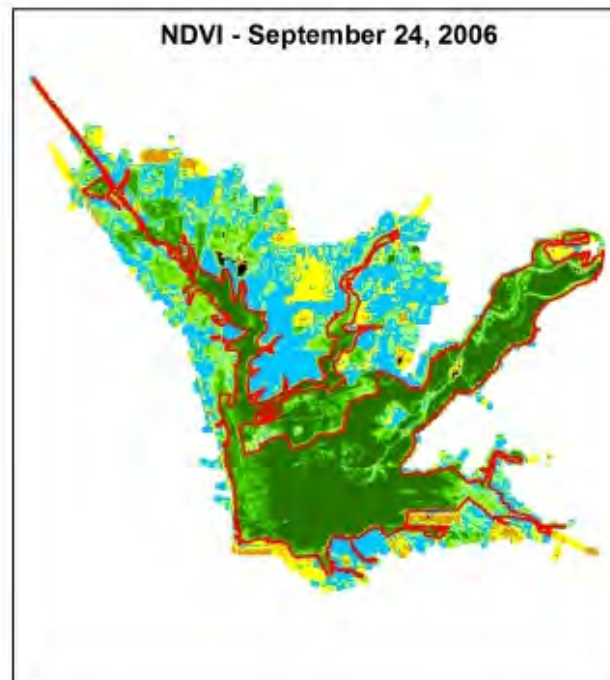
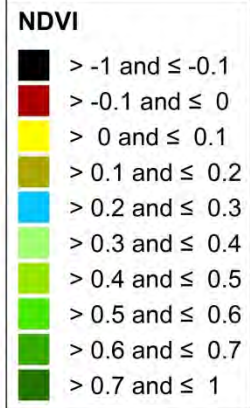
NDVI from -1 to 1

Image source:
http://earthobservatory.nasa.gov/Features/MeasuringVegetation/measuring_vegetation_2.php



$$\frac{(0.50 - 0.08)}{(0.50 + 0.08)} = 0.72$$

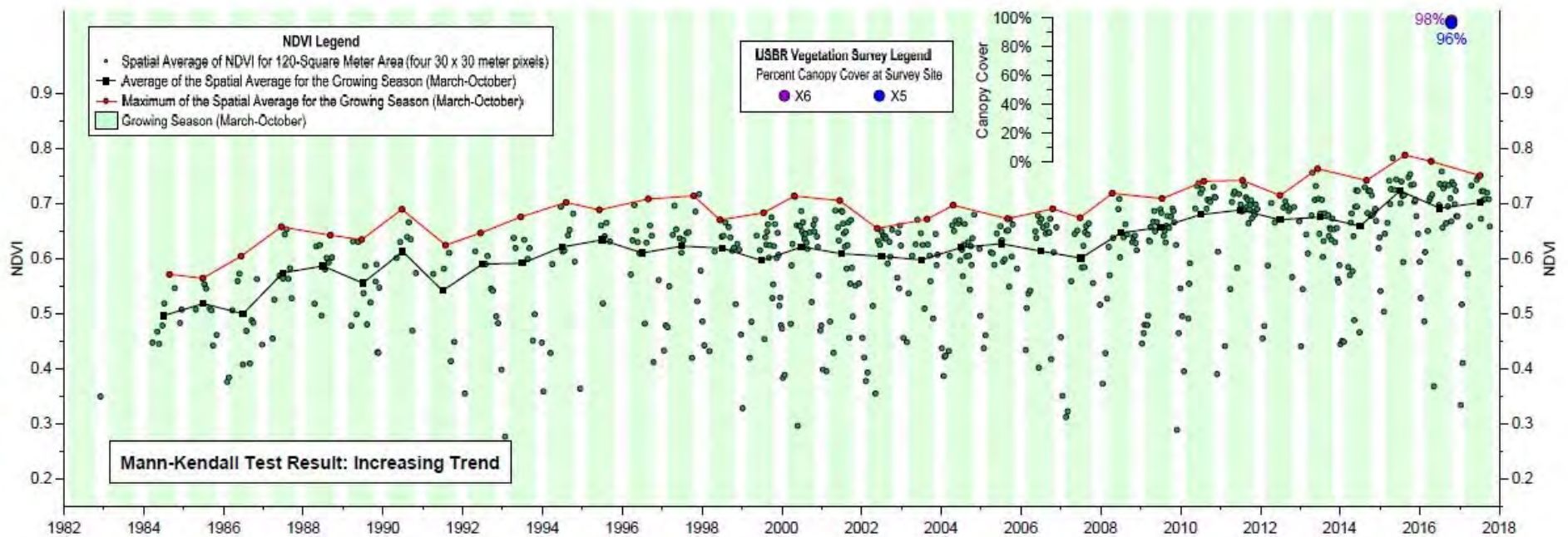
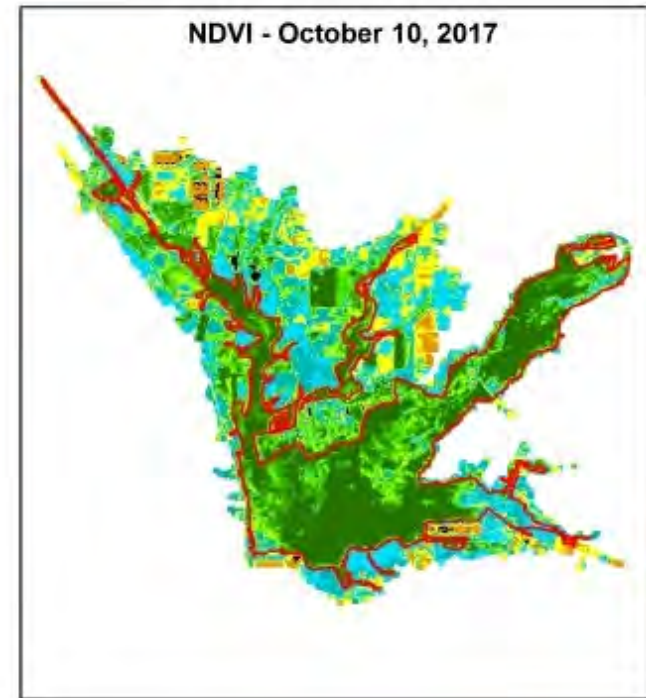
$$\frac{(0.4 - 0.30)}{(0.4 + 0.30)} = 0.14$$



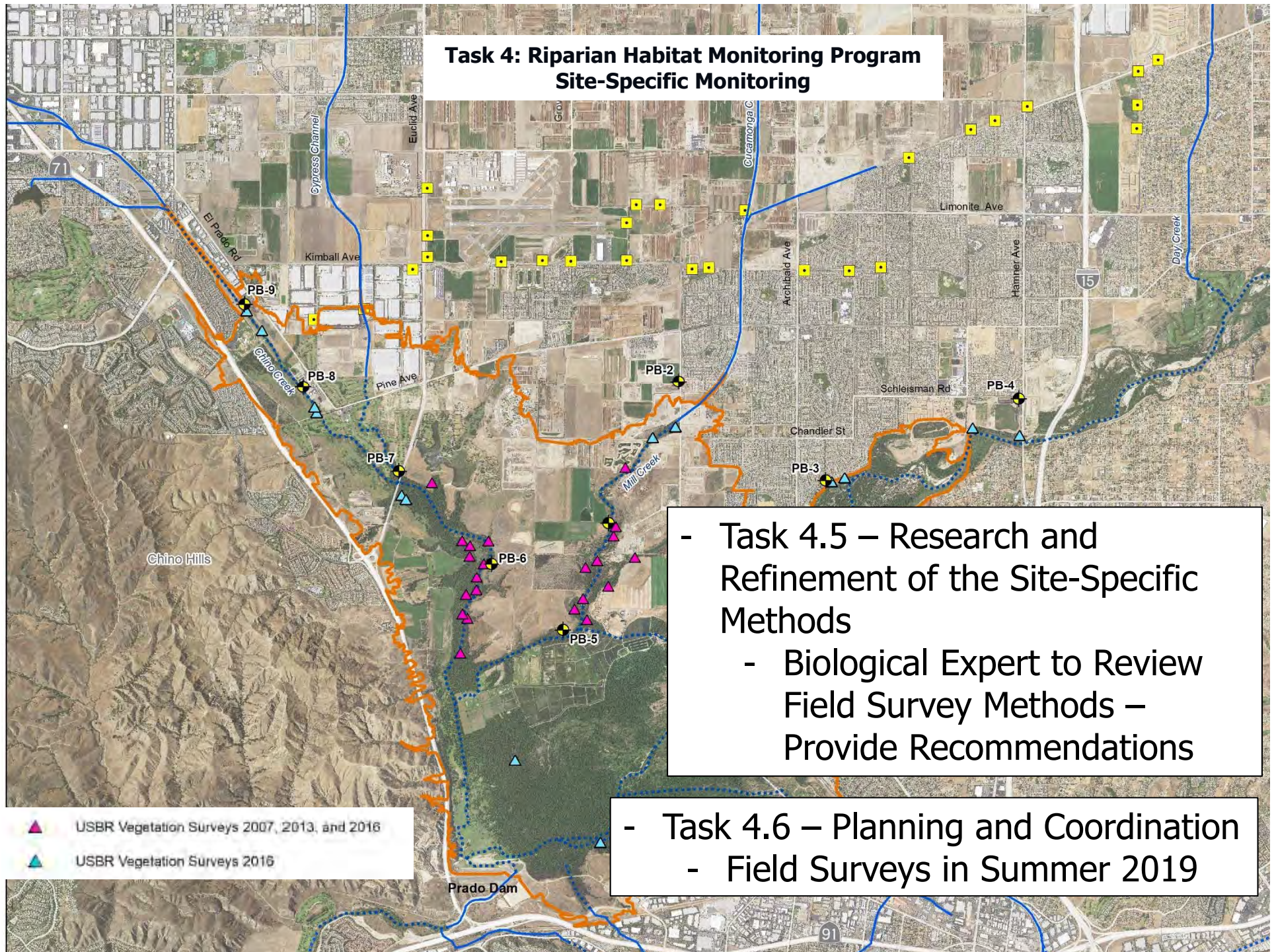
Task 4: Riparian Habitat Monitoring Program Regional Monitoring

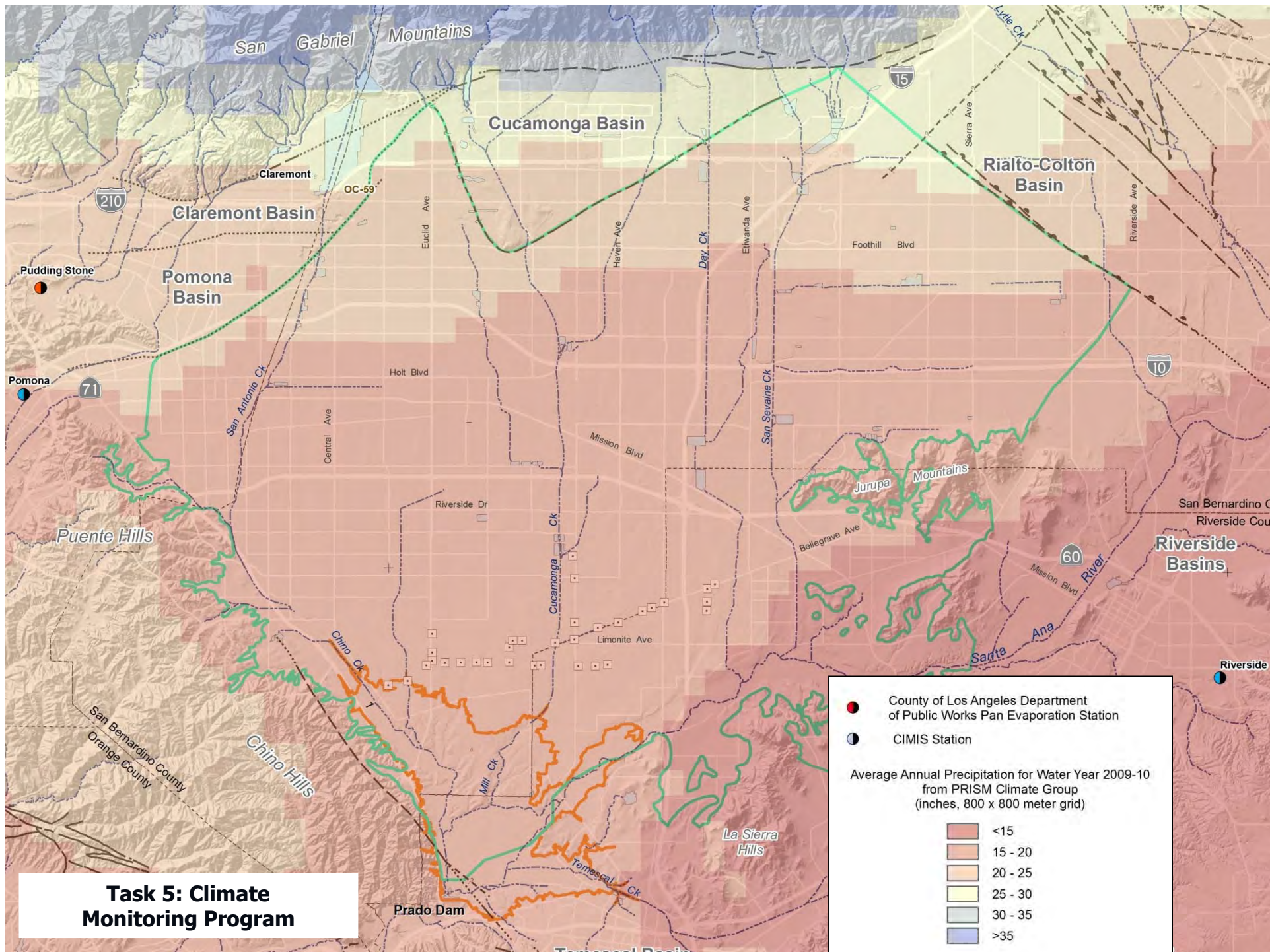
Task 4.3 – Collect 2018 NDVI from Landsat remote sensing data.

Task 4.4 – Research and Refine Regional Monitoring Program, As-needed.



Task 4: Riparian Habitat Monitoring Program Site-Specific Monitoring





Task 6: Annual Reporting

- **Section 1** – Introduction
- **Section 2** – Monitoring and Modeling Activities
- **Section 3** – Result and Interpretations
- **Section 4** – Conclusions and Recommendations
- **Section 5** – Mitigation Measures
- **Section 6** – References
- **Appendix A** – Monitoring/Reporting Program for FY 2019/20



Task 7:

Project Management and Administration

- Prepare Scope and Budget for FY 2019-20
- Meeting (Review Proposed Scope and Budget for FY 2019-20)
- Project Administration and Financial Reporting



Next Steps

- March 27, 2018 – Committee submits comments on the PBHSC FY 2018–19 Budget
- April/May 2018 – PBHSC Budget for FY 2018–19 goes through Watermaster and IEUA budgeting processes for approval.
- April 24, 2018 – Publish the Draft 2017 Annual Report of the PBHSC
- May 8, 2018 – PBHSC Meeting to review the Draft 2017 Annual Report of the PBHSC



End

Questions ?

