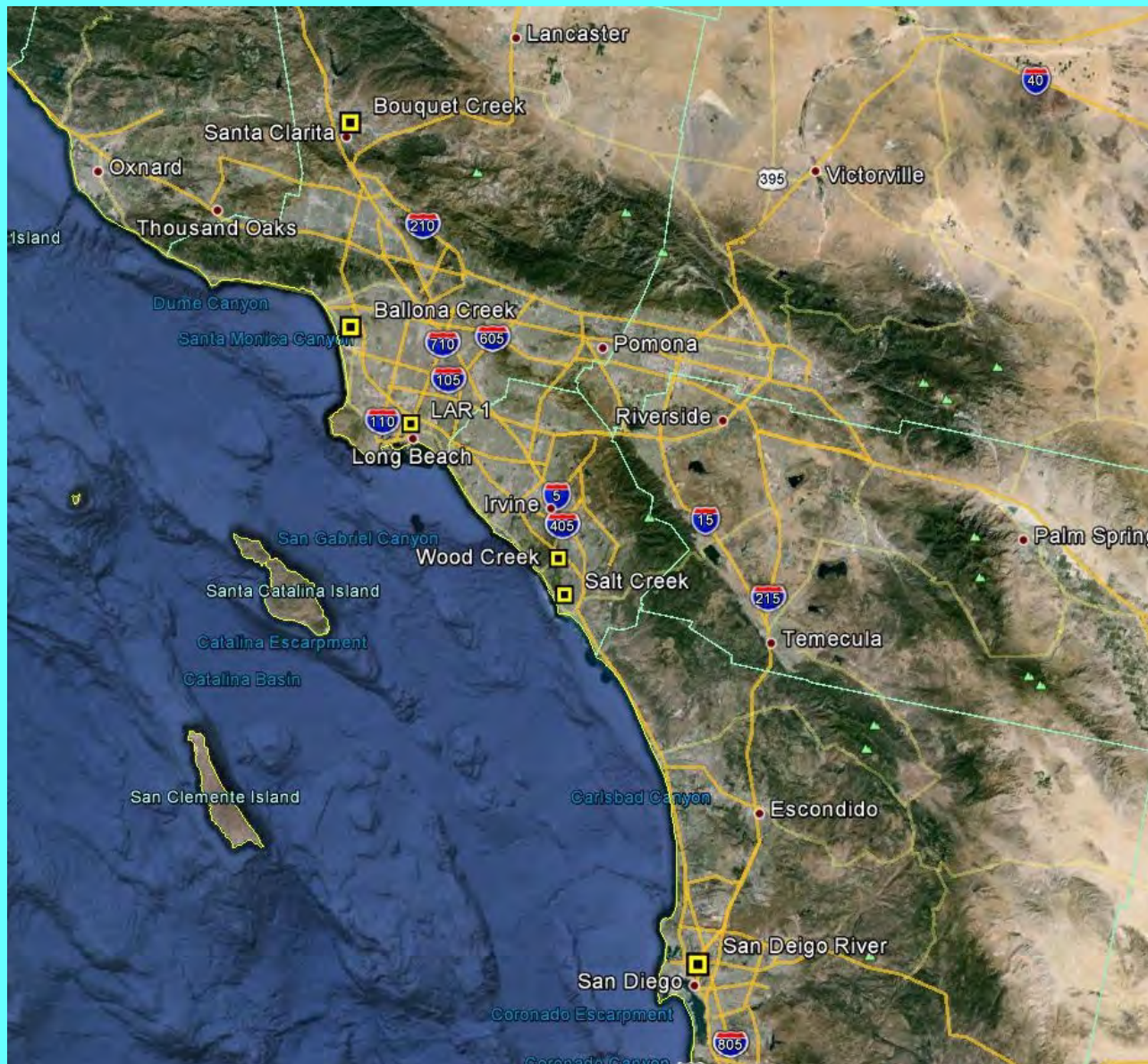


DPR SoCal Urban Surface Water Program

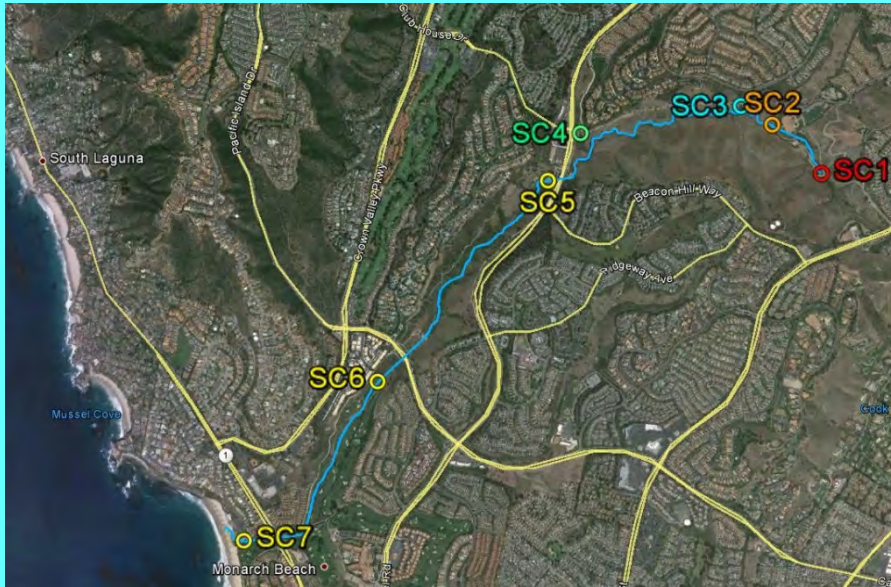


Robert Budd
Department of Pesticide Regulation
Environmental Monitoring
June 1, 2015

Southern California Monitoring Stations

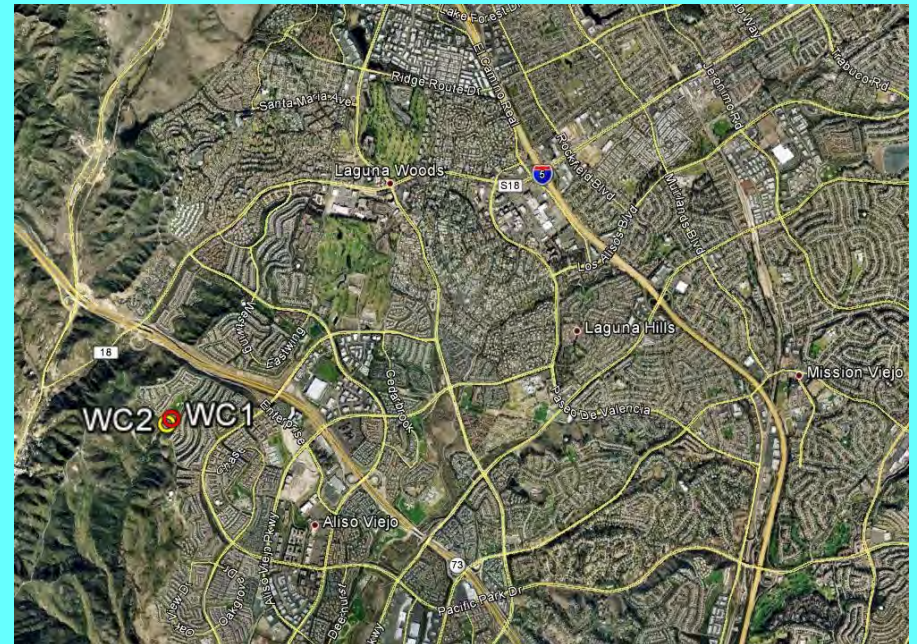


Orange County Watersheds



Salt Creek

Wood Creek



Sampling Plan

[2009-2015]

- 4 Sampling Events/ Year
 - 2 Dry Season
 - 2 Storm Events (including first flush)
- Sediment collected at subset of sites
- Water quality measurements
- Flow monitoring equipment at SC2, SC3, WC1
 - SC5 coming

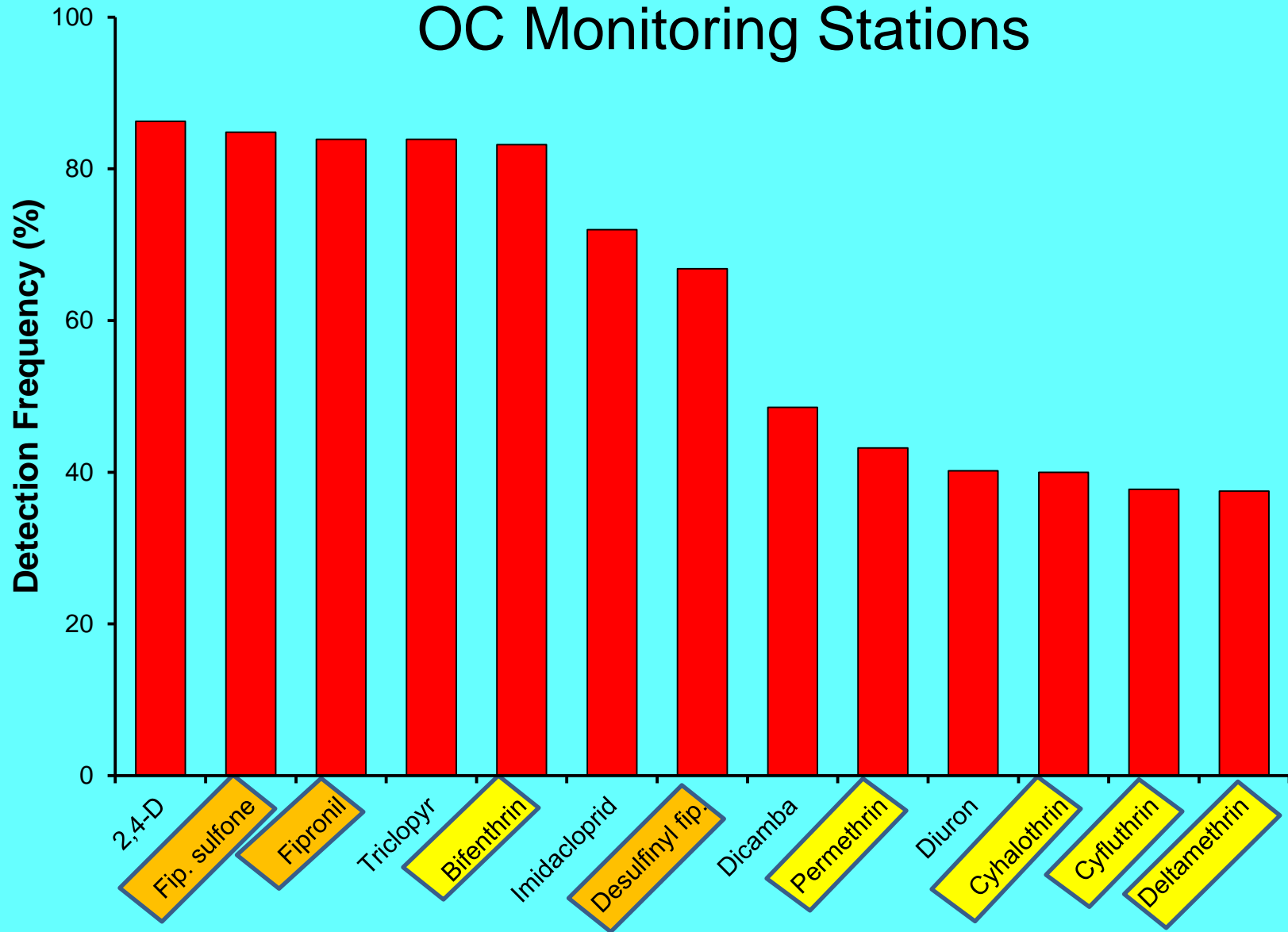


Pesticide Prioritization

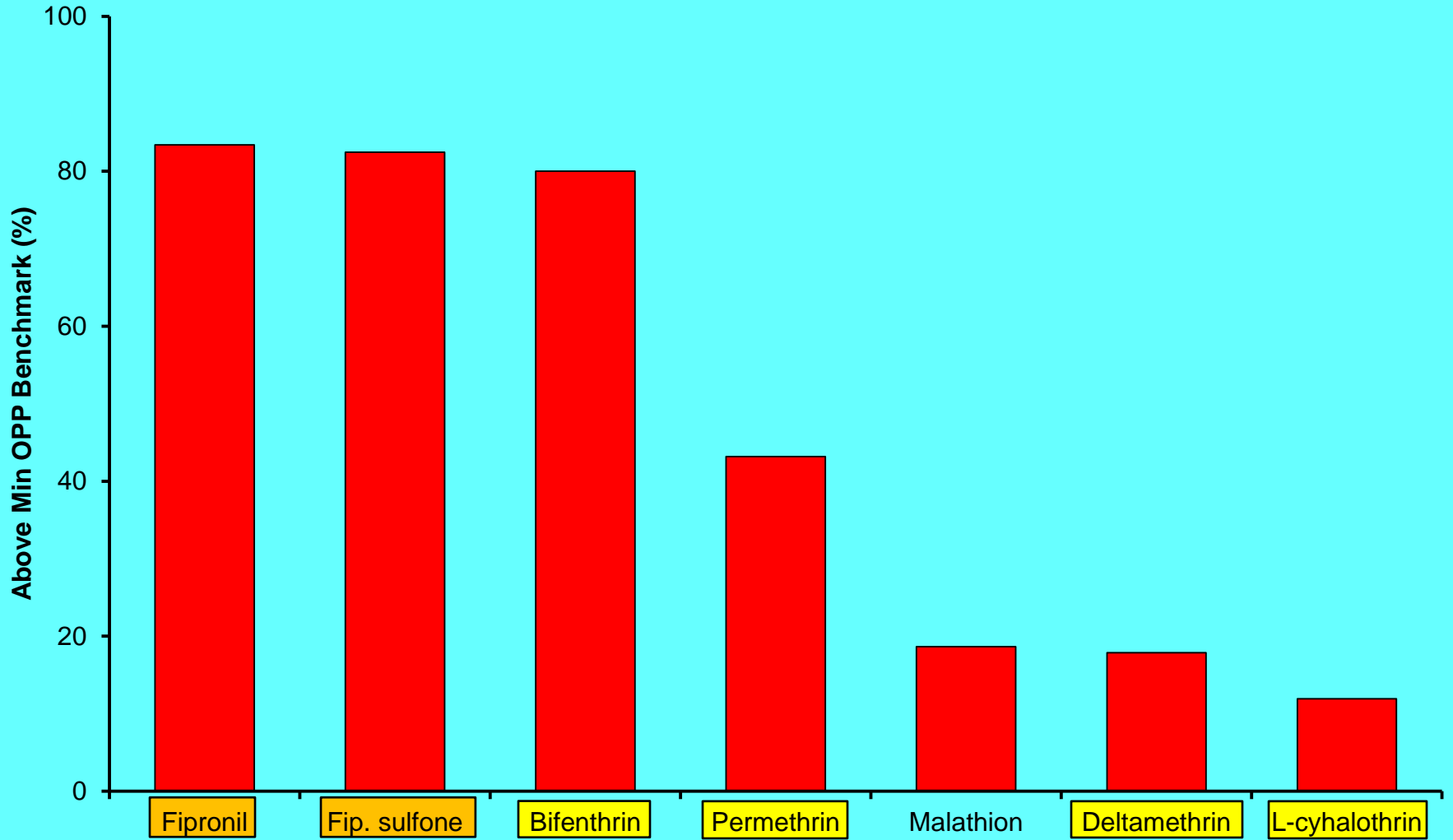
Chem_Code	Pesticide	Use (lbs)	Use Score	Benchmark	Tox Score	Final Score	Recom
2300	BIFENTHRIN	12177.5	5	0.0013	7	35	TRUE
2008	PERMETHRIN	10289.2	5	0.0014	7	35	TRUE
2297	LAMBDA-CYHALOTHRIN	2406.7	4	0.002	7	28	TRUE
2223	CYFLUTHRIN	3905.2	4	0.0074	7	28	TRUE
677	CHLOROTHALONIL	15945.7	5	0.6	5	25	FALSE
3995	FIPRONIL	5097.2	4	0.011	6	24	TRUE
3010	DELTAMETHRIN	663.8	3	0.0041	7	21	TRUE
367	MALATHION	740.3	3	0.035	6	18	TRUE
2171	CYPERMETHRIN	990.7	3	0.069	6	18	TRUE
3849	IMIDACLOPRID	1782.3	4	1.05	4	16	TRUE
211	MANCOZEB	5713.5	4	1.1	4	16	FALSE
1696	THIOPHANATE-METHYL	3812.4	4	2	4	16	FALSE
229	DIQUAT DIBROMIDE	584.7	3	0.75	5	15	FALSE
253	CHLORPYRIFOS	110	2	0.04	6	12	TRUE
2236	PRODIAMINE	1592.1	3	1.5	4	12	TRUE
231	DIURON	1622.4	3	2.4	4	12	TRUE
3938	CHLORFENAPYR	874	3	2.915	4	12	TRUE
1929	PENDIMETHALIN	1486.6	3	5.2	4	12	TRUE
83	BROMACIL	531.3	3	6.8	4	12	TRUE
1749	2,2-DIBROMO-3-NITRILOPROPIONAMIDE	895.3	3	10	4	12	FALSE
636	2,4-D	2322.1	4	13.1	3	12	TRUE
2170	TRICLOPYR, BUTOXYETHYL ESTER	3779.3	4	19	3	12	FALSE
2149	SULFOMETURON-METHYL	80.7	2	0.45	5	10	TRUE
2017	OXADIAZON	415.7	2	0.88	5	10	TRUE
1868	ORYZALIN	1601.8	3	15.4	3	9	TRUE

Yellow = pyrethroid, Orange = fipronil

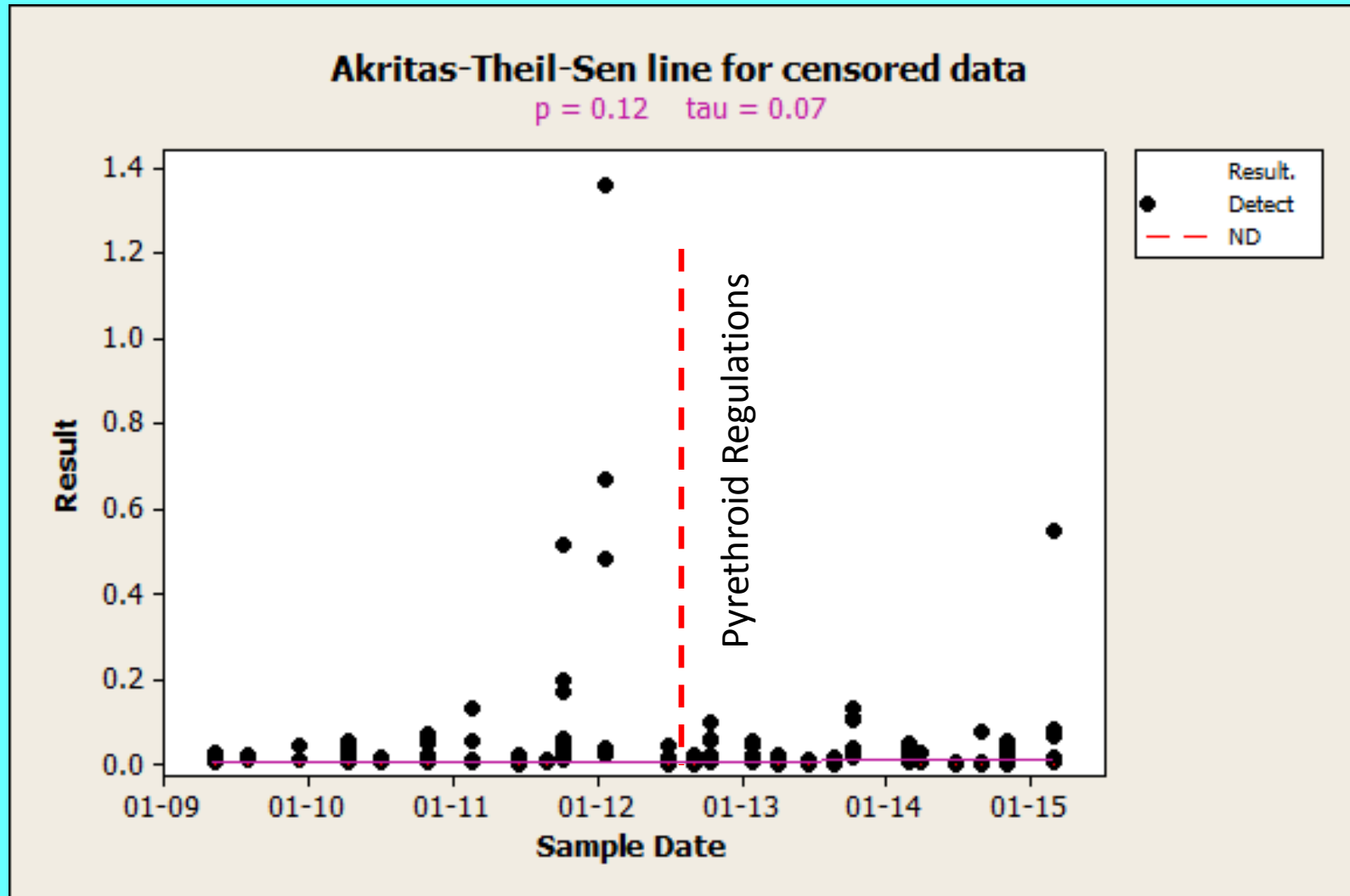
Frequency of Detections OC Monitoring Stations



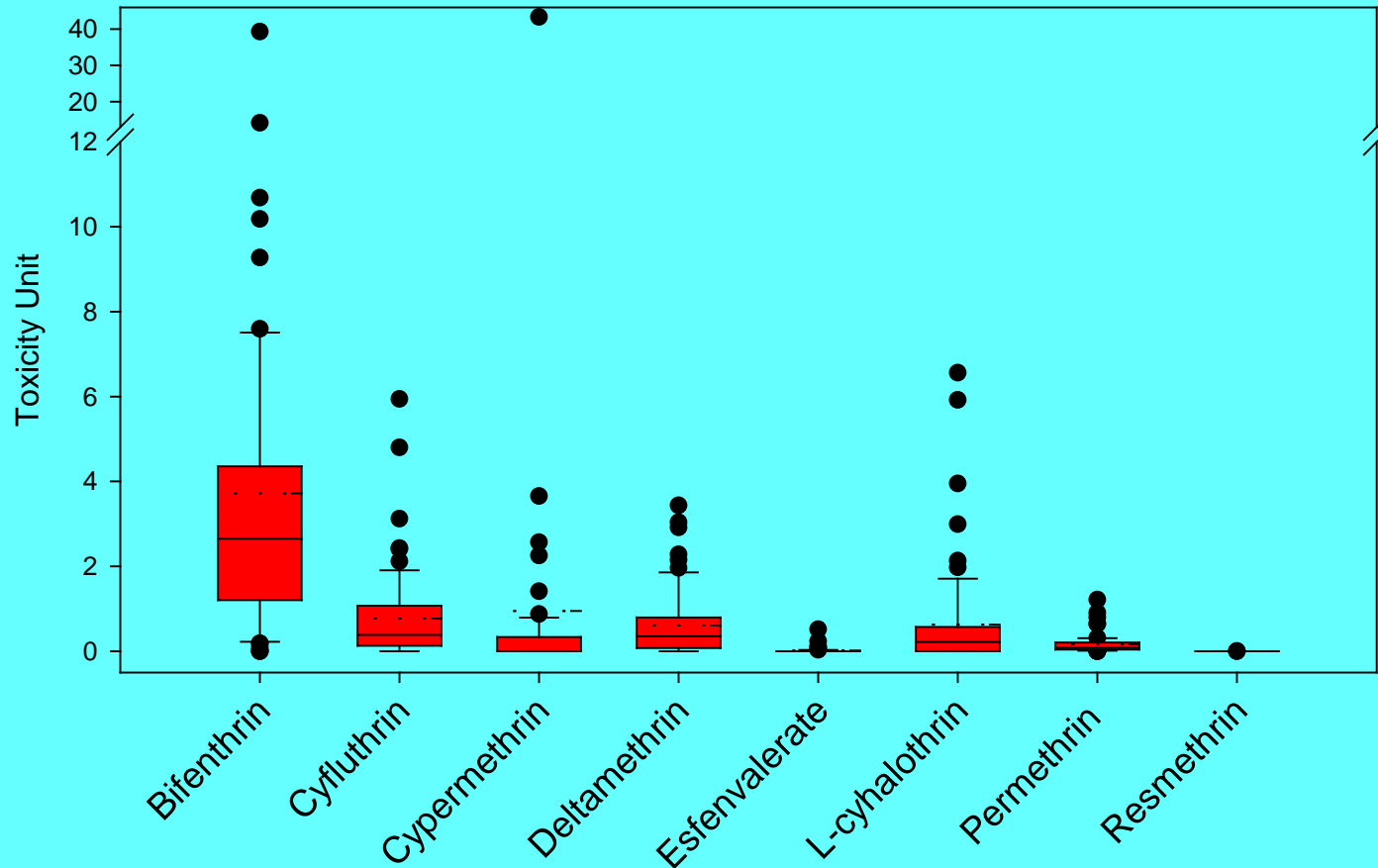
Concentrations Above US EPA Aquatic Benchmarks



Trend in Bifenthrin Concentrations



Sediment Toxicity Units



Toxic Unit = OC Normalized Concentration/LC50
TU > 1 = Predicted Toxicity

Reports

Sampling Plan

Urban Pesticide Monitoring in Southern California During Fiscal Year 2013-2014.
http://www.cdpr.ca.gov/docs/emon/pubs/protocol/study270protocol2013_14.pdf

Monitoring Reports

Robert Budd, Michael Ensminger, Dan Wang, and Kean S. Goh. 2015.
Monitoring Fipronil and Degradates in California Surface Waters, 2008–2013. J. Environ. Quality 44(3): [doi:10.2134/jeq2015.01.0018](https://doi.org/10.2134/jeq2015.01.0018)

Ensminger, M. P., R. Budd, K. C. Kelley, and K.S. Goh. 2013. **Pesticide Occurrence and Aquatic Benchmark Exceedances in Urban Surface Waters and Sediments in Three Urban Areas of California, USA, 2008-2011 .** Environ. Monit. Assess. 185: 3697-3710