



Humboldt BAYKEEPER  
Klamath RIVERKEEPER  
Yuba River WATERKEEPER  
Russian RIVERKEEPER  
Monterey COASTKEEPER  
Santa Barbara CHANNELKEEPER  
Los Angeles WATERKEEPER  
Orange County COASTKEEPER  
Inland Empire WATERKEEPER  
San Diego COASTKEEPER

# NGO Surface Water Monitoring Recommendations

East San Joaquin Surface Water Monitoring Expert Panel

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# Problems with the ESJ Monitoring Scheme

## Too Many Blind Spots

1. The sampling density is far too small to sufficiently detect exceedances
2. Monitoring procedures do not sample the sensitive species necessary to detect changing pesticide use

## Identification of Exceedance Source is Inadequate

3. Exceedances are not properly quantified because representative sites might not be in the same waterway
4. The monitoring plan does not adequately “track back” up the watershed to truly identify the source of the exceedance

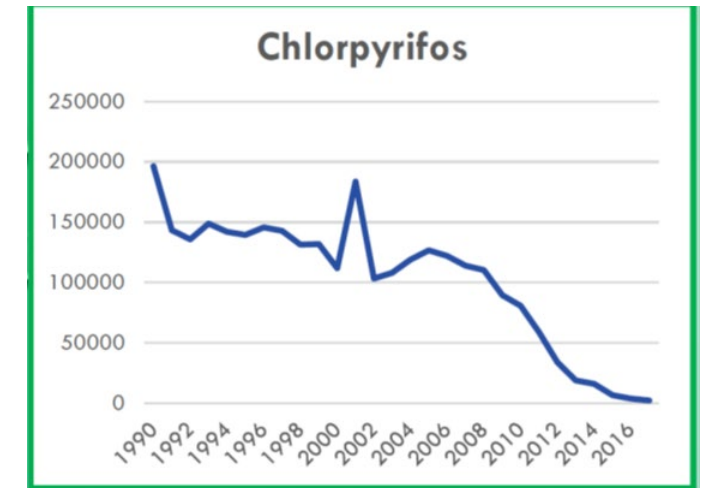
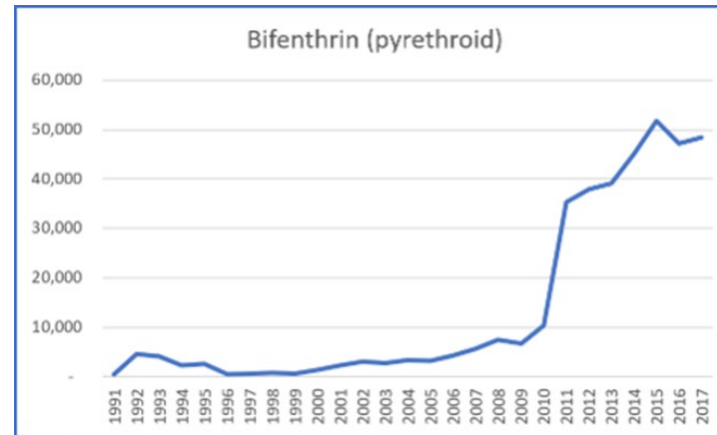
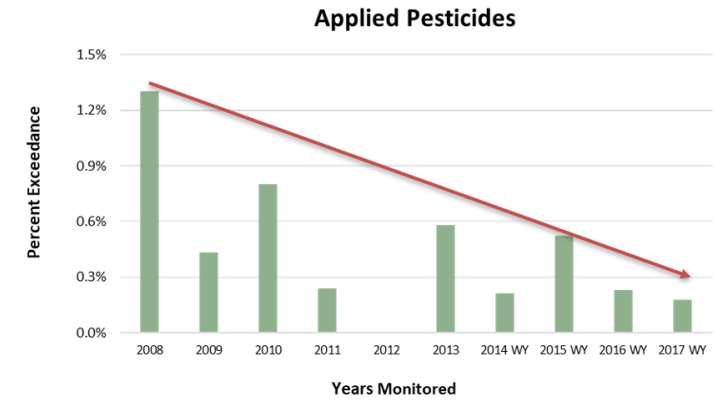
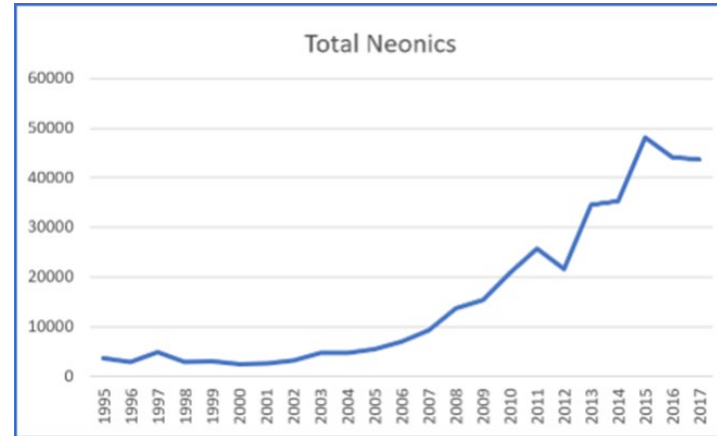
## Addressing Exceedances is Insufficient

5. Addressing the exceedance is not done in a timely manner, and will not result in meaningful changes to best management practices
6. The coalition is not addressing the most critical exceedances

# Problem #1 - Sampling Density

- Ventura and Central Coast Monitoring Coalitions demonstrated significantly increased sampling density compared to ESJ.
  - ESJ has 6 Sites for 835,000 acres of irrigated land. The Central Coast monitors 55 sites for half the acreage.
- Compliance with water quality standards cannot be determined by collecting samples, perhaps 20 to 40 miles from a discharge point and analyzing 0.1 percent of streamflow draining 15,218 to 83,767 irrigated acres.
- Core site monitoring cannot measure or detect degradation that may have occurred upstream and dissipated by the time the effected waters commingle with other waters and flow past the downstream monitoring location.

# Problem #2 – Toxicity Samples



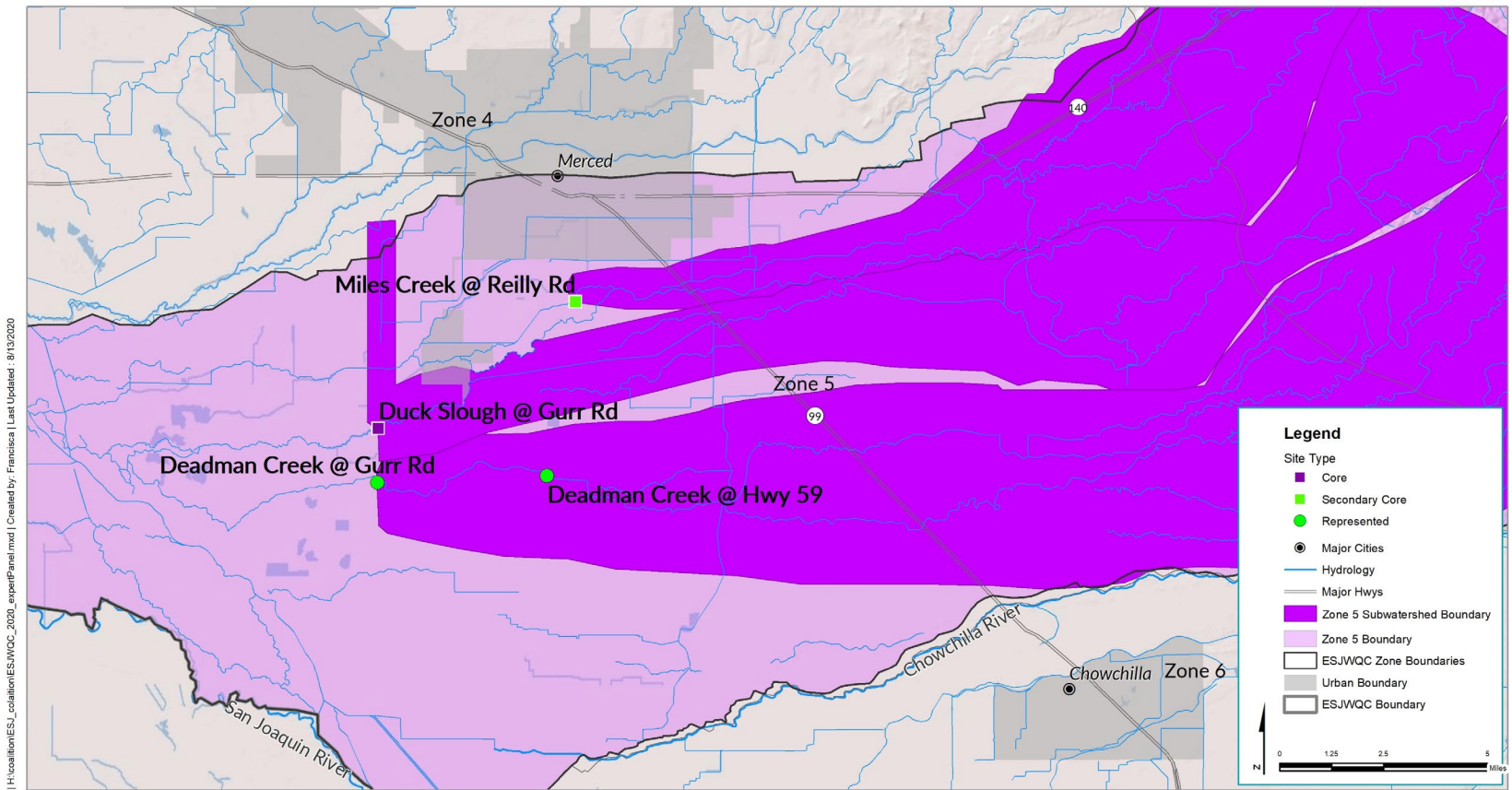
# Recommended Toxicity Solutions

<i>Species</i>	<i>Sensitivity</i>	<i>Current</i>	<i>Recommended</i>
H. azteca (amphipod)	Pyrethroids	10-day chronic Sediment	10-day chronic Sediment
H. azteca (amphipod)	Pyrethroids	96-hour acute Water	96-hour acute Water*
C. dilutus (midge)	Neonicotinoids	None	10-day chronic Water
C. dubia "water flea"	Organophosphates	96-hour acute	96-hour acute Water
P. promelus (minnow)	nothing	Y/N	None
S. capricornutum (algae)	Copper & herbicides	96-hour acute Water	96-hour acute Water

# Recommended Toxicity Solutions

- **How Often? (Chemistry and Toxicity)**
  - **April thru October (7x)**
  - **Plus First Flush (within 24 hours of rain event. Currently 3 days.)**
    - **Safety consideration (choice of site)**
    - **Sediment sample difficult or impossible**
  - **Plus storm event during dormant spraying.**
  - **Total 9x all matrixes, chemistry and toxicity. (Current 8-11x water, 2x sediment.)**

# Problem #3 – Core Sites and Representative Sites



## Zone 5 Monitoring Locations

ESJWQC

Coordinate System: NAD 1983 StatePlane California III FIPS 5403 Feet  
Projection: gnepoly/Lambert Conformal Conic  
Units: Foot US  
Service Layer Credits: Stated Below. Copyright © 2014 Esri  
Hydrology - NH2 Hydrodata, 1:24,000 scale, <http://nh2.esri.com/>  
Roads, Highways, Railroads - ESRI

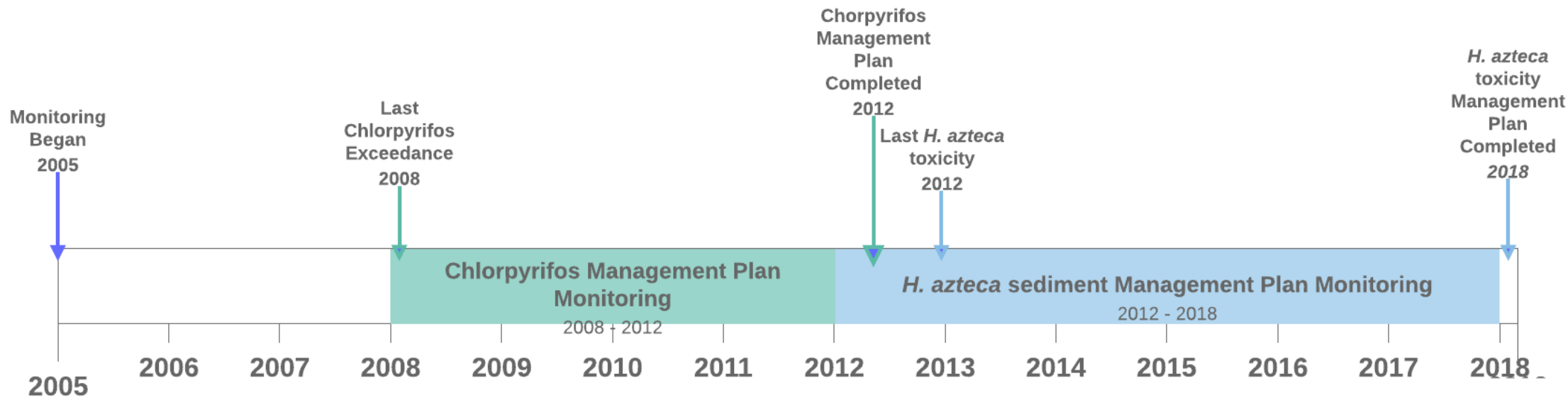
## Problem #3 – Core Sites and Representative Sites

- **State Water Board** “Our review of the data found monitoring at represented sites can reveal exceedances for a different set of constituents than those found at the core sampling sites, even where the physical characteristics are similar.”
- **State Water Board** “the problem is that a [management plan] may not be triggered until an exceedance is detected at a core or represented site, and water quality exceedances upstream or in an adjacent portion of the watershed to that of the core and represented sites may go undetected in the interim.”
- After expressing concerns with the spatial and temporal density of monitoring, the State Board directed Regional Board staff to begin this expert panel process.



## Problem #4 – Track Back to Identify Sources

- The Los Angeles Regional Board acknowledged that representative surface water monitoring was not adequate to detect on its own sources of pollution.
- **Ventura Region Surface Water Monitoring Program:** When a receiving water violation has been detected by representative monitoring, the LA Regional Board requires all growers upstream of the watershed exceedence to begin conducting individual field monitoring until the responsible parties are identified and the exceedence is corrected.



Problem #5 – Too Much Time to Conduct a Study

# Chlorpyrifos



Table 78. Status of ESJWQC management plan constituents per site subwatershed.

Active - X, removed - dark grey cell, and reinstated - light grey cell.

SITE SUBWATERSHED	MOST RECENT MONITORING FOR FULL SUITE OF CONSTITUENTS	DISSOLVED OXYGEN	PH	SPECIFIC CONDUCTANCE	AMMONIA	NITRATE/NITRITE	COU	ARSENIC	COPPER (TOTAL & DISSOLVED)	LEAD (TOTAL & DISSOLVED)	MOLYBDENUM	CHLORPYRIFOS	DDE	DAZINON	DIETHOATE	DURON	MAATHON	SHAZINE	C. DUBIA TOXICITY	P. PROMELAS TOXICITY	S. CAPRICORNUTUM TOXICITY	H. AZTECA TOXICITY	TOTAL REMOVED PER SITE	
		Ash Slough @ Ave 21	2010			X					X													
Bear Creek @ Kibby Rd	2008		X					X																4
Berenda Slough along Ave 18 1/2	2012	X	X					X	X															2
Black Rascal Creek @ Yosemite Rd	2008	X	X					X																3
Canal Creek @ West Bellevue Rd	2017 WY	X	X	X				X	X															0
Cottonwood Creek @ Rd 20	2015 WY							X	X															5
Deadman Creek @ Gurr Rd	2010	X	X	X	X			X	X											X	X			3
Deadman Creek @ Hwy 59	2012	X	X					X	X				X											1
Dry Creek @ Rd 18	2017 WY	X	X	X				X																5
Dry Creek @ Wellsford Rd/ Church St <sup>1</sup>	2017 WY	X	X		X			X																6
Duck Slough @ Gurr Rd	2015 WY	X	X	X	X			X	X				X							X				5
Hatch Drain @ Tuolumne Rd	2008	X	X	X		X	X	X														X	X	0
Highline Canal @ Hwy 99	2017 WY	X	X	X	X			X	X				X									X	X	4
Highline Canal @ Lombardy Rd	2011	X	X	X				X	X													X	X	4
Hilmar Drain @ Central Ave	2008	X	X	X	X	X	X	X														X		5
Howard Lateral @ Hwy 140	2010	X	X	X				X	X															1
Lateral 2 1/2 near Keyes Rd	2010	X	X																			X		2
Lateral 5 1/2 @ South Blaker Rd	2017 WY		X	X		X	X															X		0
Lateral 6 and 7 @ Central Ave	NA	X	X	X		X																X		0
Levee Drain @ Carpenter Rd	2013	X	X	X	X	X	X															X		2
Livingston Drain @ Robin Ave	2008	X	X					X																3
Lower Stevenson @ Faith Home Rd	NA	X	X	X		X																X		0
McCoy Lateral @ Hwy 140	2012	X							X															0
Merced River @ Santa Fe/ Oakdale Rd <sup>1</sup>	2015 WY	X						X					X											2
Miles Creek @ Reilly Rd	2017 WY	X						X	X				X											4
Mootz Drain downstream of Langworth Pond	2013	X		X	X			X																2
Mustang Creek @ East Ave	2013	X		X		X	X		X				X											2
Prairie Flower Drain @ Crows Landing Rd	2015 WY	X	X	X	X	X	X				X	X								X		X		2
Unnamed Drain @ Hogin Rd	NA	X		X																				0
Unnamed Drain @ Hwy 140	2013	X	X					X																0
Westport Drain @ Vivian Rd	2008	X	X	X		X	X																	2
<b>Total Approved Complete Management Plan (Dark Grey Cells)</b>		2	2	1	0	0	2	0	5	10	0	16	0	3	1	6	0	0	8	2	9	5	72	
<b>Total Reinstated Management Plans (Light Grey Cells)</b>		2	1	3	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	12
<b>Total Remaining Management Plans (X)</b>		25	21	20	8	9	25	4	12	0	1	6	1	0	0	0	0	1	3	1	10	1	148	

<sup>1</sup> The Dry Creek @ Wellsford Rd and Merced River @ Santa Fe site subwatershed were replaced with Dry Creek @ Church St and Merced River @ Oakdale Rd; all management plan constituents are monitored at replacement sites. NA-Represented site, monitoring for full suite of constituents not scheduled.

# Solutions to the ESJ Monitoring Scheme

## Too Many Blind Spots

1. Increase the sampling density to a scientifically defensible range consistent with other regional monitoring schemes
2. See Steve Shimek's recommendations on Slides 5 and 6

## Identification of Exceedance Source is Inadequate

3. Representative sites should be upstream and in the same waterway as the core site. Core sites should be as far downstream as possible to detect all exceedances within the coalition areas.
4. Once an exceedance is detected at a core site, the coalition should track back up the watershed to sub watershed reference sites, and from there narrow down detections further up the watershed.

## Addressing Exceedances is Insufficient

5. Rather than 5-year studies that result in education to a broad range of growers, the coalition should "track back" until a focused range of potential growers that are causing or contributing to the water quality exceedance are identified.
6. The focused range of potential growers that are causing or contributing should be required to change management practices until they can demonstrate they are not causing or contributing to the downstream water quality exceedance.