

Amended Monitoring and Reporting Program Requirements

Agenda Item 11
December 8, 2016
Chris Rose

Water Quality Issues and Goals

- Documented pesticide use changes
- Toxicity indicators not aligned with pesticide use
- Goal of Order: address water quality issues from agricultural discharges

Pesticide Use Changes

Monterey and Santa Barbara Counties (lbs applied)

	<u>2010</u>	<u>2014</u>
Neonicotinoids	43,251	70,824

Source: DPR Pesticide Use Database

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Pesticide Use Changes

Monterey and Santa Barbara Counties (lbs applied)

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Neonicotinoids	43,251	70,824
Pyrethroids	46,638	70,378

Source: DPR Pesticide Use Database

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Pesticide Use Changes

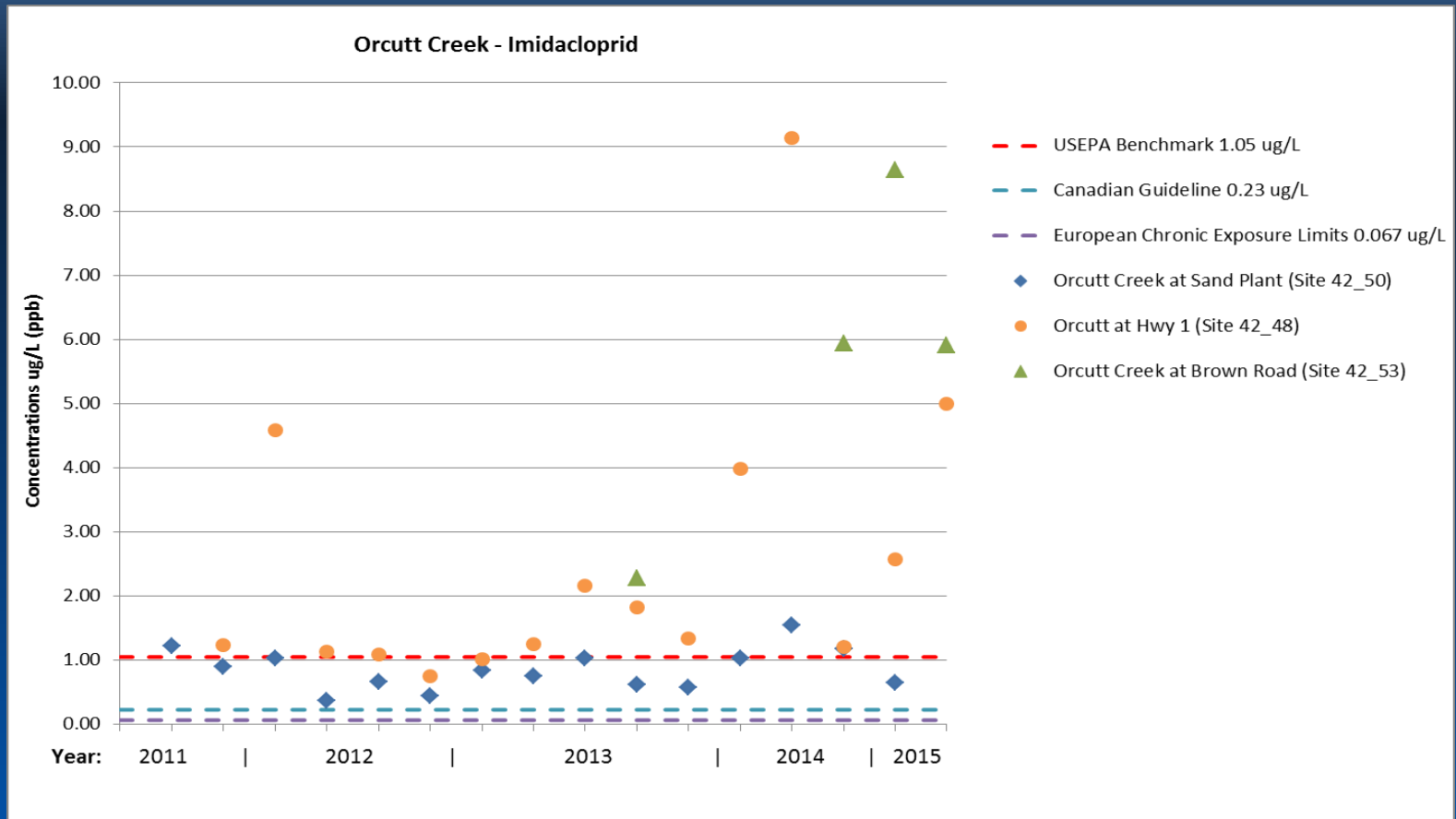
Monterey and Santa Barbara Counties (lbs applied)

	<u>2010</u>	<u>2014</u>
Neonicotinoids	43,251	70,824
Pyrethroids	46,638	70,378
Chlor/Diaz/ Malathion	362,507	137,147

Source: DPR Pesticide Use Database

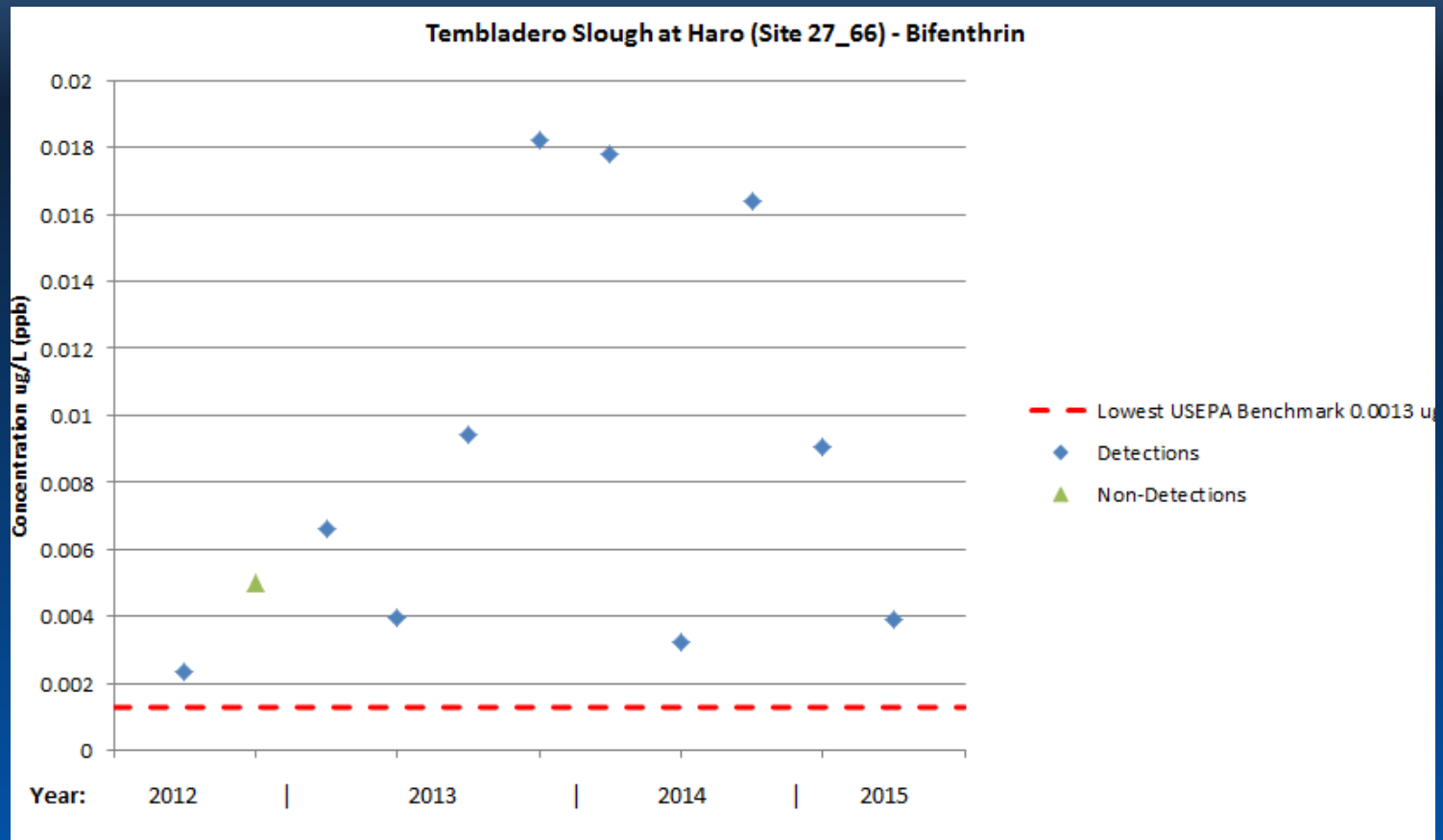
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Imidacloprid (Neonicotinoid) Concentration



Source: DPR

Pyrethroid: Bifenthrin



Source: DPR

FALL 2014: DPR/SWAMP/CMP Region 3

Aug2014

Salinas and Santa Maria Valley Sites		EPA 3 species chronic
Water Sample		CMP
Alisal Slough @ Hartnell Rd		-
Chualar Creek @ Chualar River Road*		NT
Main St. Ditch @ Main St.		NT
Orcutt Creek @ West Main		NT
Oso Flaco Creek @ OF Lake Rd		NT
Quail Creek @ SR-101		NT
Rec Ditch III (Near Airport Blvd)		NT
Solomon Creek @ SR-1		NT
Tembladero Slough @ Haro	NT	
Percent Toxic	0%	
Combined Percent Toxic		

From May 2015 Executive Officers Report

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FALL 2014: DPR/SWAMP/CMP Region 3

September 2014

Aug2014

Salinas and Santa Maria Valley Sites	<i>Hyalella</i> 10d water	<i>Chironomus</i> 10d water	EPA 3 species chronic
Water Sample	SWAMP		CMP
Alisal Slough @ Hartnell Rd	T	T	-
Chualar Creek @ Chualar River Road*	T	NT	NT
Main St. Ditch @ Main St.	NT	NT	NT
Orcutt Creek @ West Main	T	T	NT
Oso Flaco Creek @ OF Lake Rd	T	T	NT
Quail Creek @ SR-101	T	T	NT
Rec Ditch III (Near Airport Blvd)	T	T	NT
Solomon Creek @ SR-1	NT	T	NT
Tembladero Slough @ Haro	T	NT	NT
Percent Toxic	78%	67%	0%
Combined Percent Toxic	89%		

Must Align Toxicity Indicator Species with Pesticides Used

FALL 2014: DPR/SWAMP/CMP Region 3

Salinas and Santa Maria Valley Sites	<i>Hyalella</i> 10d water	<i>Chironomus</i> 10d water	EPA 3 species chronic
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Nitrate in Groundwater

- Domestic wells sampled
 - 25% of 1733 wells sampled exceeded standard
- Irrigation wells sampled
 - 26% of 2266 wells sampled exceeded standard
- Some wells not sampled in Ag Order 2.0

Data Gap and Planning

- Pre-amended MRPs silent on 2017 requirements
 - Data gap
- Cooperative Monitoring Program Planning
 - Contracting
 - Budget

Outreach Efforts Prior to Amending MRP's

- July 2016 Board meeting
- August 15, 2016
 - Webcast meeting 1:
 - Technical Service Providers, Grower-Shipper, Farm Bureaus, Central Coast Groundwater Coalition, select large ag operations, Preservation Inc.
 - Webcast meeting 2:
 - Monterey County Coastkeeper, Environmental Law Foundation, Environmental Justice Coalition for Water

SLIDE FROM WEBCAST AUG 15 MEETINGS

2017 Monitoring

- Notification on the following is coming
- Groundwater monitoring required
 - Primary irrigation well
 - All domestic use wells
 - 2 samples from each (1st: March-June; 2nd Sept-Dec)
- Inclusion in surface receiving water requirements:
 - Pyrethroids
 - Neonicotinoids
 - *Hyalella* (sensitive to pyrethroids)
 - *Chironomus* (sensitive to neonicotinoids)

Amended MRPs and Petition

- August 22, 2016
 - Executive Officer issued amended MRPs
 - Staff notified stakeholders
- September 6, 2016
 - Phone conference w/Grower-Shipper Cent. CA
 - First objection to amended MRPs
 - Grower-Shipper & staff agreed to public discussion at Dec 8 board meeting
- September 21, 2016:
 - Grower-Shipper *et al.* file petition, in abeyance

Summary of Amended MRPs

- Additions
 - Neonicotinoid pesticides
 - *Chironomus*: toxicity indicator for neonicotinoids
- Deletions
 - Carbamates, organochlorines, minnow, habitat
- Continued from earlier MRPs
 - Pyrethroid & organophosphate pesticides
 - *Hyalella and Ceriodaphnia* toxicity indicators
 - Groundwater monitoring

Summary

- Ag Order addresses threat to water quality from agricultural discharges
- Need to align monitoring with:
 - Pesticides used
 - Toxicity species sensitive to pesticides used
- Address
 - Potential data gap
 - Planning/budgeting for Cooperative Monitoring Program

Recommendation

Uphold the amended Monitoring and Reporting Programs as issued on August 22, 2016, by the Executive Officer

Discussion

Extra Slides

CA Neonicotinoid Sales 2014-2015

	CA Neonicotinoid Sales 2014-2015 (Lbs)		
	Clothianidin	Imidacloprid	Dinotefuran
2014	20,916	542,262	13,170
2015	119,731	791,125	750,052
Increase (%)	472	46	470

Source: Hoyle and Code, November 2016, *Neonicotinoids in California's Surface Waters, A preliminary Review of Potential Risk to Aquatic Invertebrates*, Xerces Society for Invertebrate Conservation

CA Neonicotinoid Use Trend

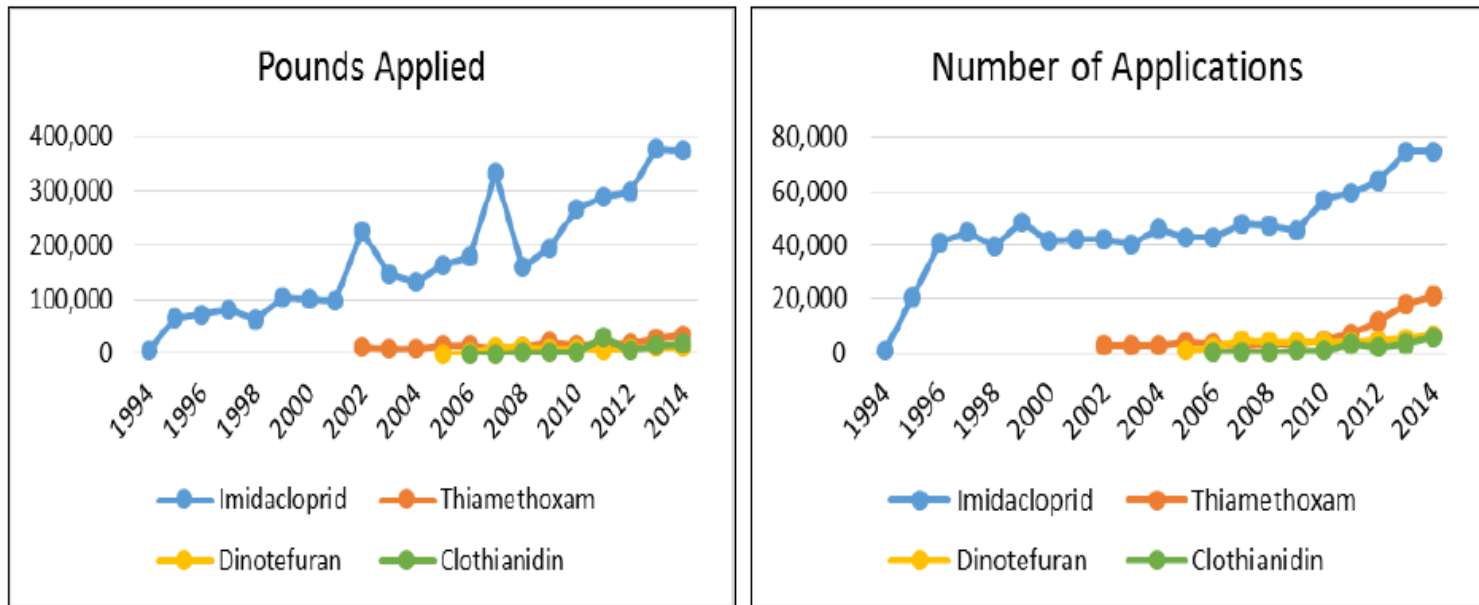


Figure 1: Pounds applied and number of applications of nitroguanidine neonicotinoids in California. This data does not include the planting of seed coated with neonicotinoids or non-professional ornamental and urban applications. The 2002 and 2007 outliers in imidacloprid pounds applied are likely data reporting errors.

Source: Hoyle and Code, November 2016, *Neonicotinoids in California's Surface Waters, A preliminary Review of Potential Risk to Aquatic Invertebrates*, Xerces Society for Invertebrate Conservation

Chlorpyrifos/Diazinon Use Trend

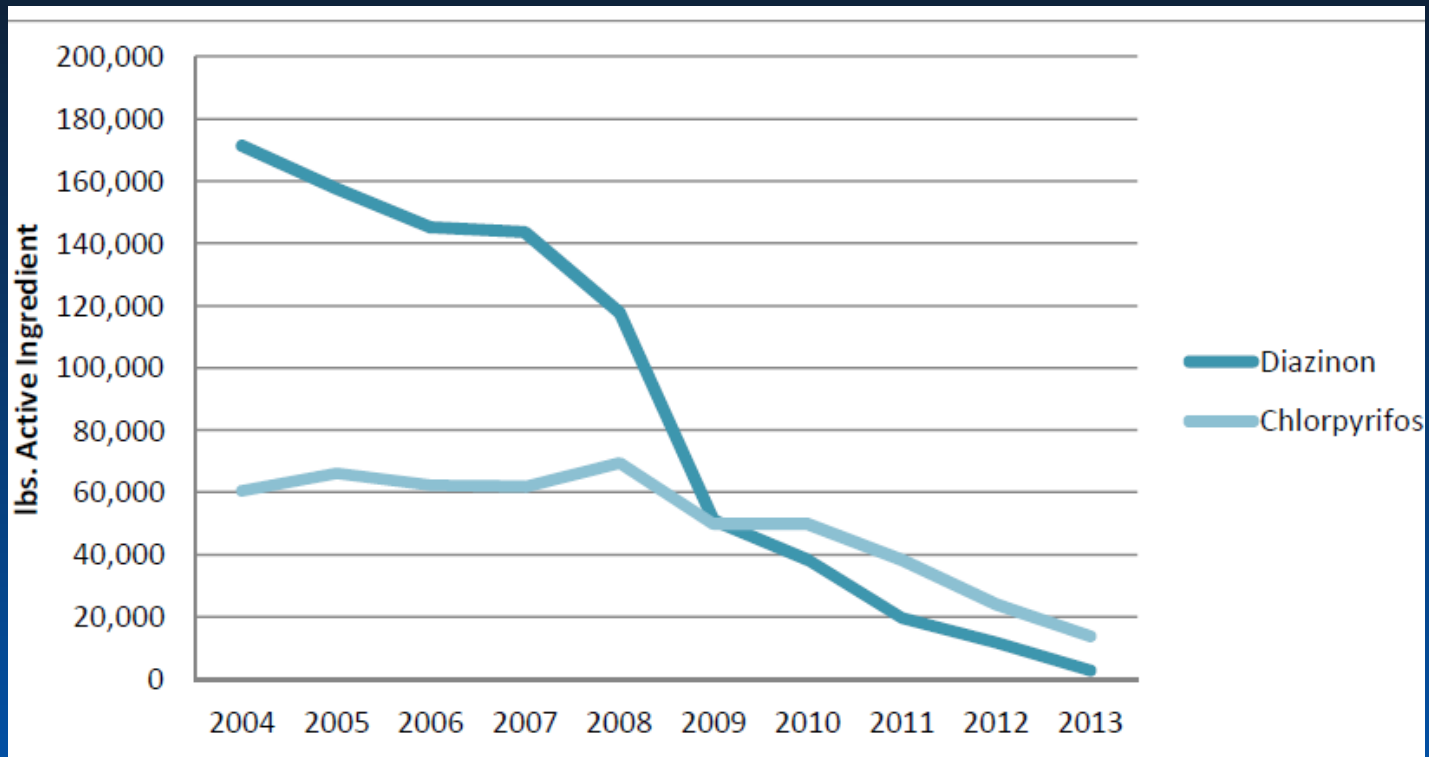


Figure 22. Trends in diazinon and chlorpyrifos use in Monterey County (Source: DPR)