

Central Valley Irrigated Lands Regulatory Program Implementing the Pesticide TMDLs

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What Are WE Trying to Accomplish?

WE = Water Board, Agriculture, Stakeholders

- Protect water quality for current and future generations
- Ensure any new requirements are consistent with sustaining agriculture in the Central Valley
- Gain knowledge & understanding as we move forward

How Do WE Accomplish these Goals?

WE = Water Board, Agriculture, Stakeholders

- Provide incentives (economic, regulatory, values)
- Provide tools/knowledge (technology, information, assistance)
- Provide feedback (monitor, assess, reflect)
- Adapt

State Regulatory Context

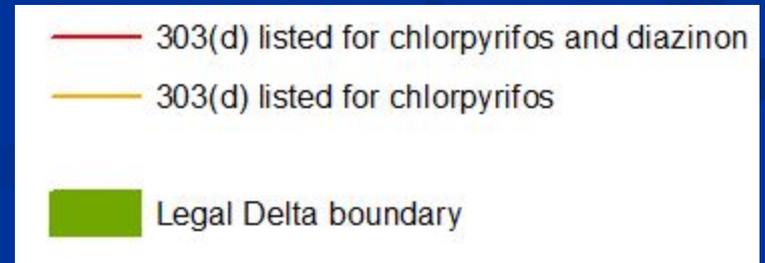
- Water Quality Control Boards
 - Broad authority to regulate the discharge of waste to surface water and groundwater
- Department of Pesticide Regulation and County Agricultural Commissioners
 - Broad authority to regulate the use of pesticides

Water Board Process

- Monitor (along w/others)
 - Toxicity and diazinon/chlorpyrifos data during storm season and irrigation season
- Assess
 - Major waterways identified as “impaired” by diazinon/chlorpyrifos

303(d) Listed Reaches for Diazinon or Chlropyrifos

- Sacramento River
- Feather River
- Delta
- San Joaquin River



Water Board Process

- Plan – Amend Basin Plan (regulations)
 - Set water quality objectives
 - 0.10 µg/L diazinon & 0.015 µg/L chlorpyrifos
 - Additive toxicity considered

Additivity Equation

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1$$

where

C_D = diazinon concentration in the receiving water.

C_C = chlorpyrifos concentration in the receiving water.

WQO_D = acute or chronic diazinon water quality objective or criterion.

WQO_C = acute or chronic chlorpyrifos water quality objective or criterion.

Water Board Process

- Plan – Amend Basin Plan (regulations)
 - Management plans required
 - Compliance time schedules established
 - Alternative pesticide cannot cause water quality problem

Water Board Process

- Implement – permits apply to groups of growers in a geographic area (coalitions)
 - Monitoring required
 - Management plans
 - Outreach activities by the Coalition
 - Effective practices identified
 - Surveys of growers

Department of Pesticide Regulation

- Established dormant spray regulations
 - 100 ft buffer from sensitive aquatic site
 - No application when soil is saturated
 - No application w/in 48 hours of storm forecast



County Agricultural Commissioners

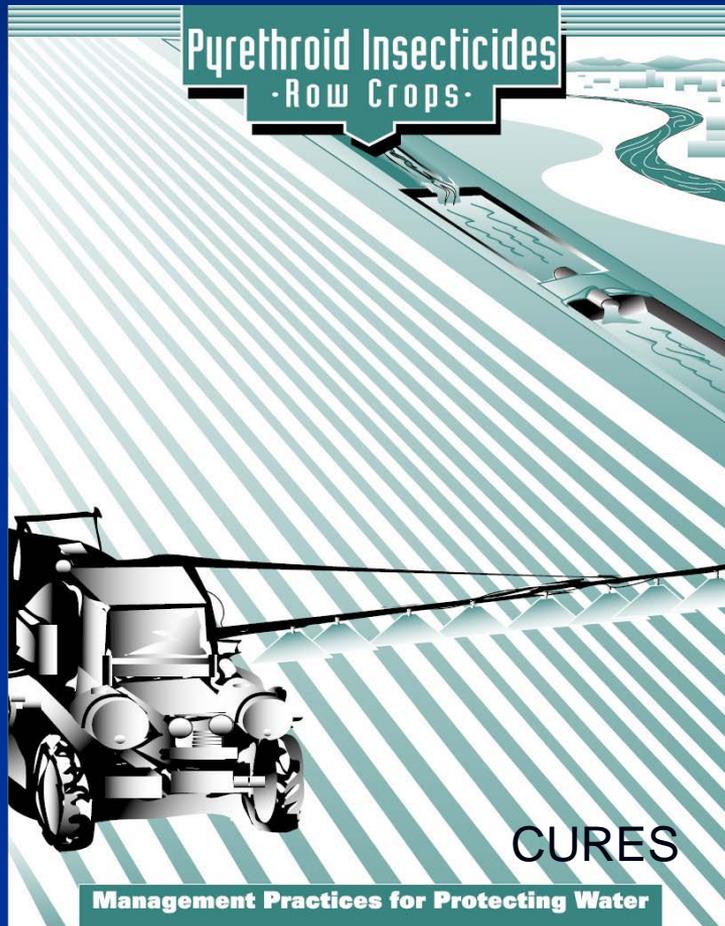
- Enforce dormant spray regulations / label requirements
- Inform growers of issues
- Can develop county-specific restrictions

YOLO COUNTY CONDITION #11

CONDITIONS COVERING THE USE OF ALL PRODUCTS WITH THE ACTIVE INGREDIENT OF CHLORPYRIFOS (TRADE NAMES SUCH AS CHLORPYRIFOS 4 AG, LORSBAN, NUFOS 4E, LOCK-ON, COBALT, ETC.)

All users shall obtain a Restricted Material Permit for Chlorpyrifos for all sites intended for use and shall submit a Notice of Intent 24 hours prior to any use.

Viability Practices Available

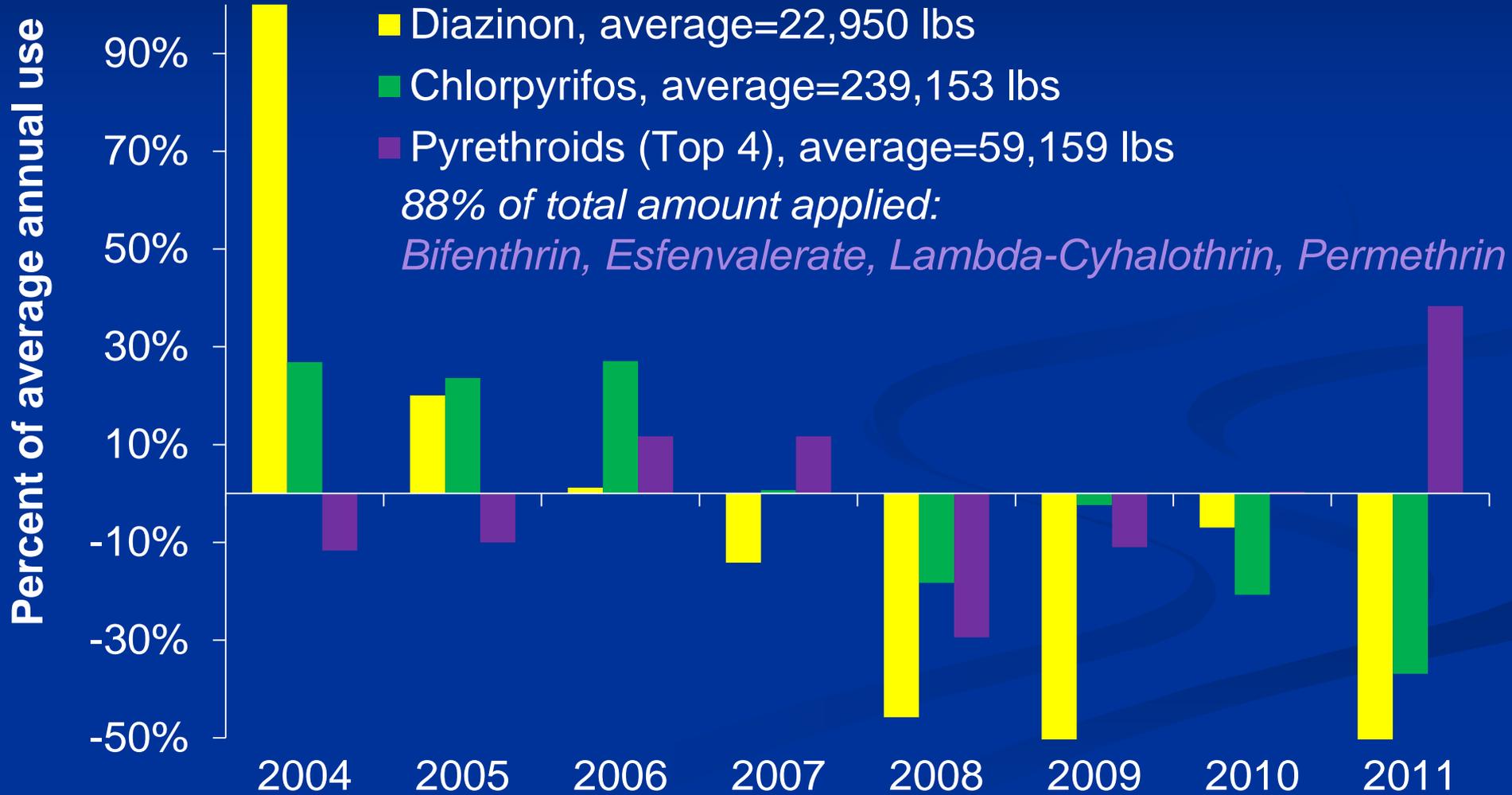


Practices Implemented

- Improved irrigation practices (drip or micro-sprinkler vs. flood or furrow irrigation)
- Sedimentation ponds
- Tailwater return systems
- Pesticide application (e.g., shut off outer nozzles, spray buffer)
- Reduced use of pesticides of concern

Agricultural Applications

Madera, Merced, San Joaquin, Stanislaus counties

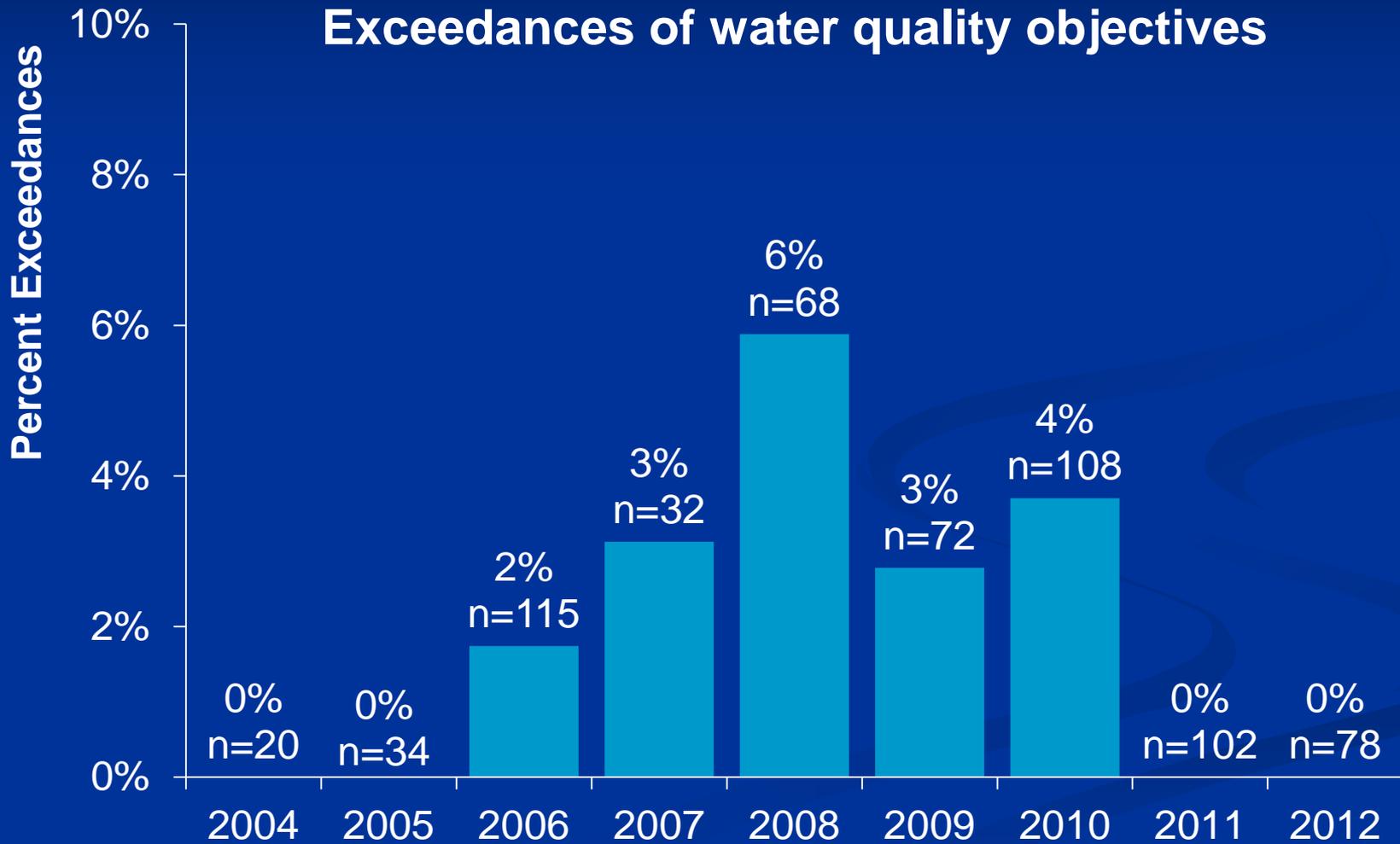


Top Crops (Acres Treated 2004-2011)

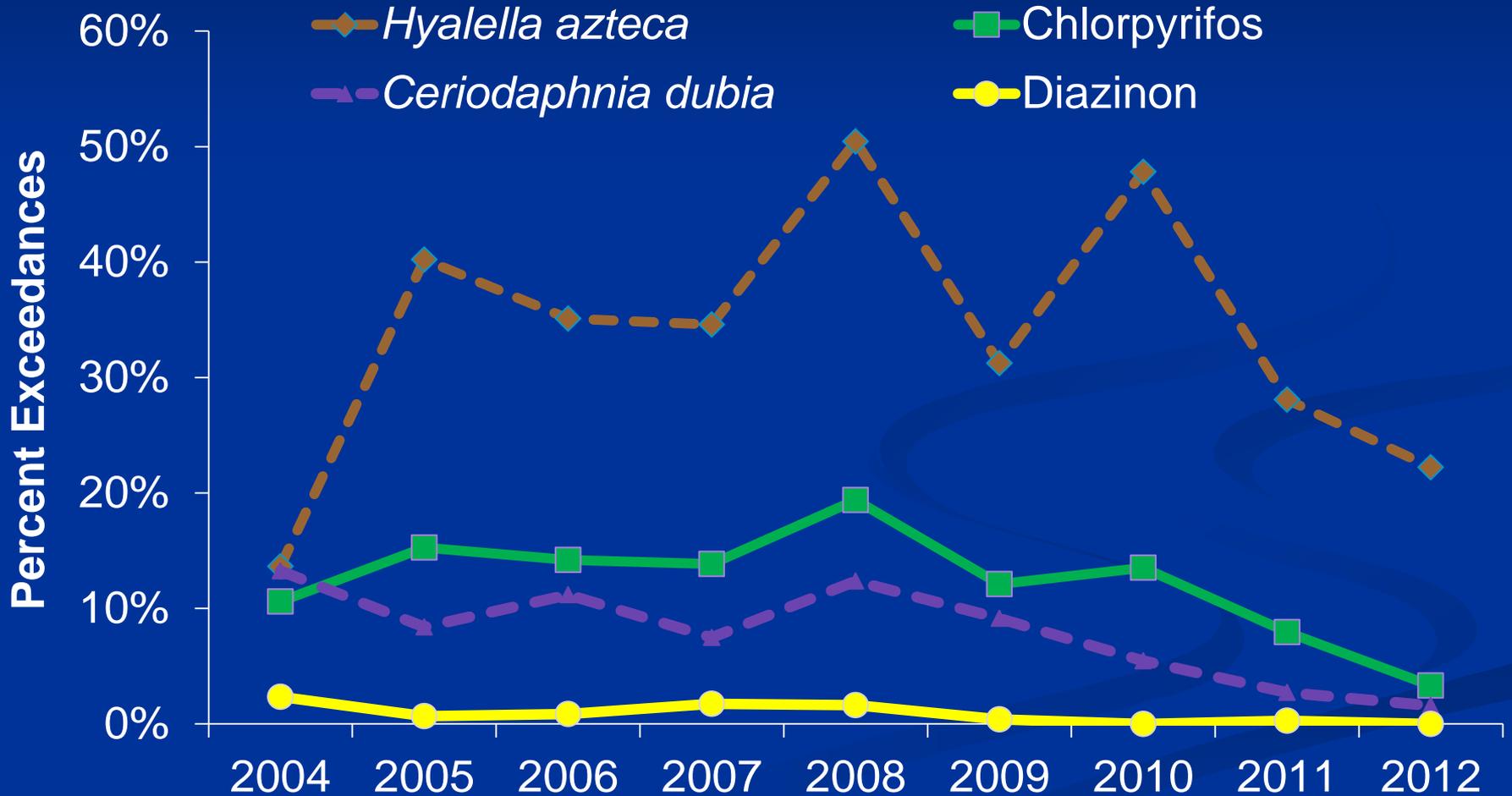
Madera, Merced, San Joaquin, Stanislaus counties

Diazinon		Chlorpyrifos		Pyrethroids (Top 4)	
Almond	36%	Alfalfa (forage)	28%	Almond	30%
Cherry	17%	Beans, dried	20%	Corn (human consumption)	14%
Cantaloupe	9%	Almond	19%	Alfalfa (forage)	12%
Peach	9%	Walnut	14%	Pistachio	8%
Prune	5%	Corn (forage)	7%	Corn (forage)	7%
	88%		76%		71%

Diazinon and Chlorpyrifos Results – San Joaquin River

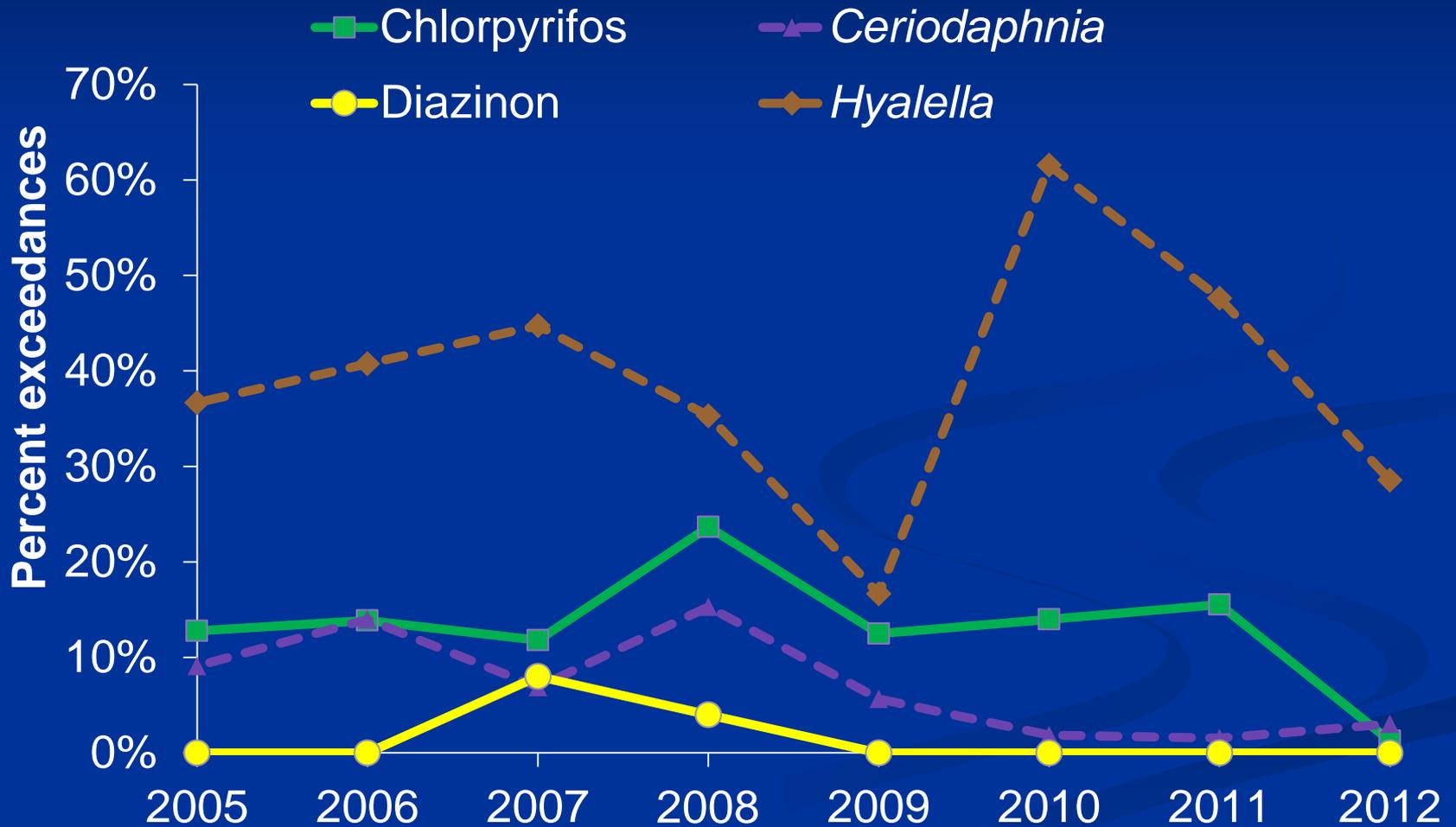


Monitoring Results from San Joaquin River Tributaries



Delta Area

Duck Slough / Lone Tree Creek



Summary

- Incentives – regulatory, economic drivers, values
- Tools / knowledge – information on viable practices
- Monitor / assess – water quality improving, practices being implemented
- Reflect – how do we sustain changes / avoid future problems?

Questions ?



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