

**Agricultural Order Renewal
Public Workshop (cont')**

The Alternatives

Special emphasis on the alternative offered by:

**Monterey Coastkeeper – Environmental Defense Center – Santa Barbara Channelkeeper
The Ocean Conservancy – Surfrider Santa Barbara
The **Green** and **Blue** Proposal**

**July 2010
RWQCB, Watsonville**





01.29.2009



Example 3 (cont): Agricultural stormwater runoff to Arroyo Paradon Creek – October 13th, 2009

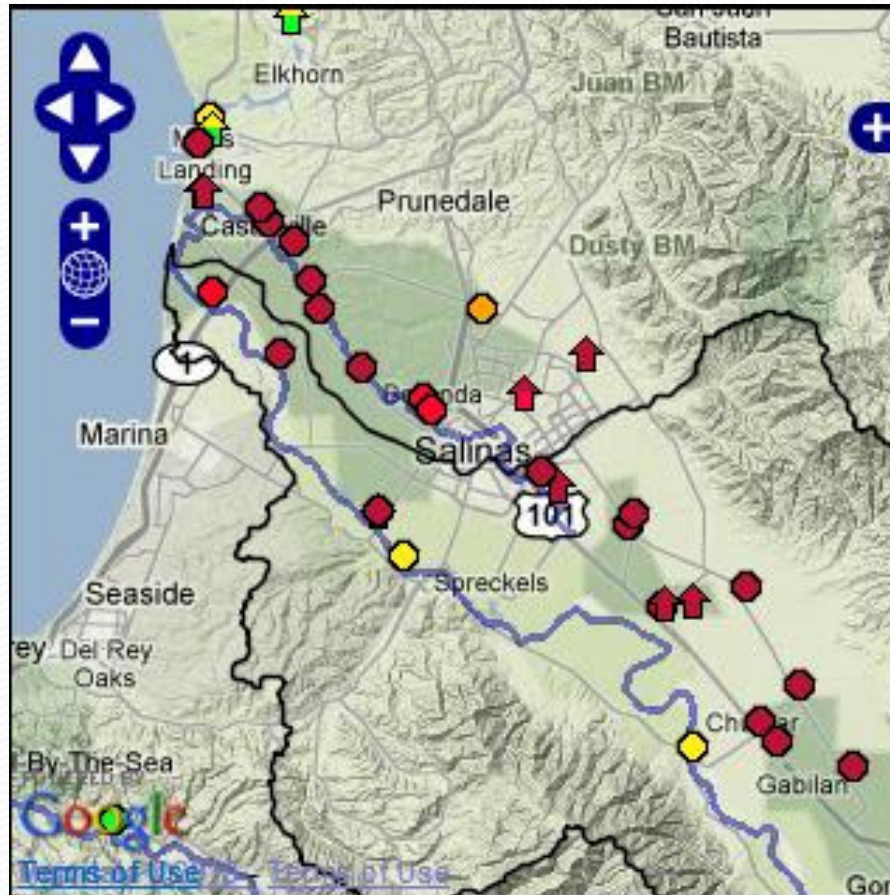


Contaminated runoff from fallow field and roads flowing from culvert to another culvert under Foothill Road

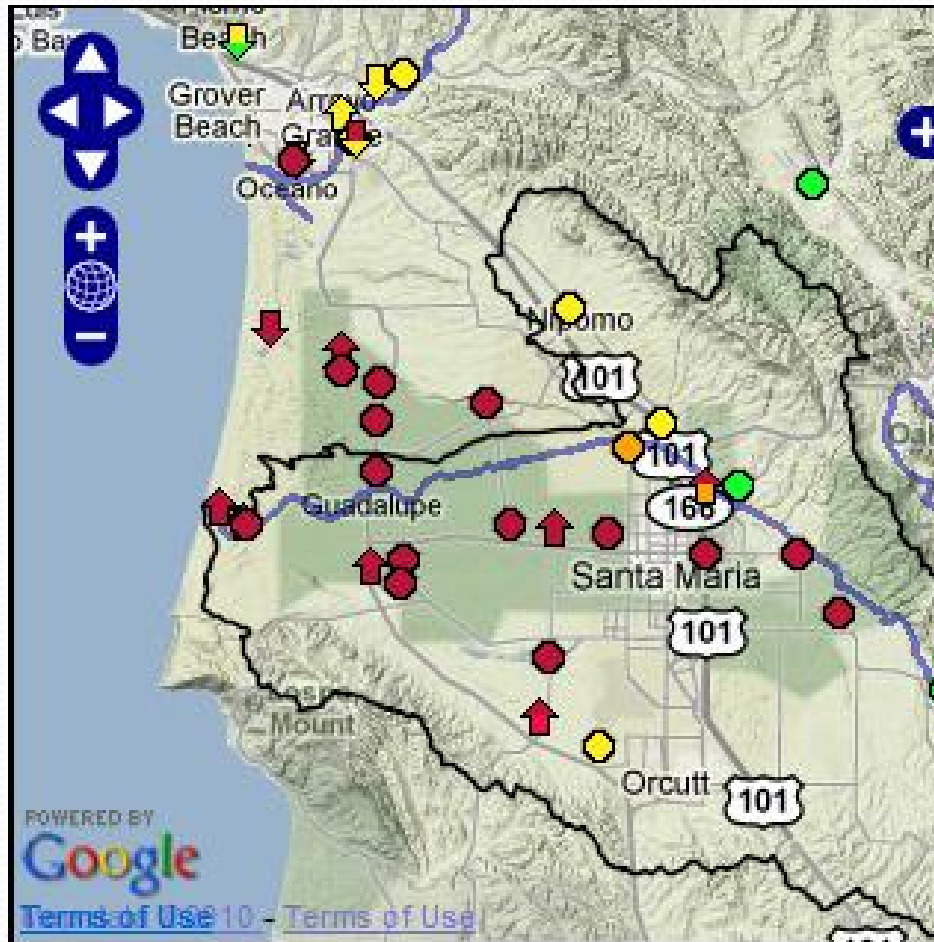
Nitrate as N



Nitrate as N Lower Salinas



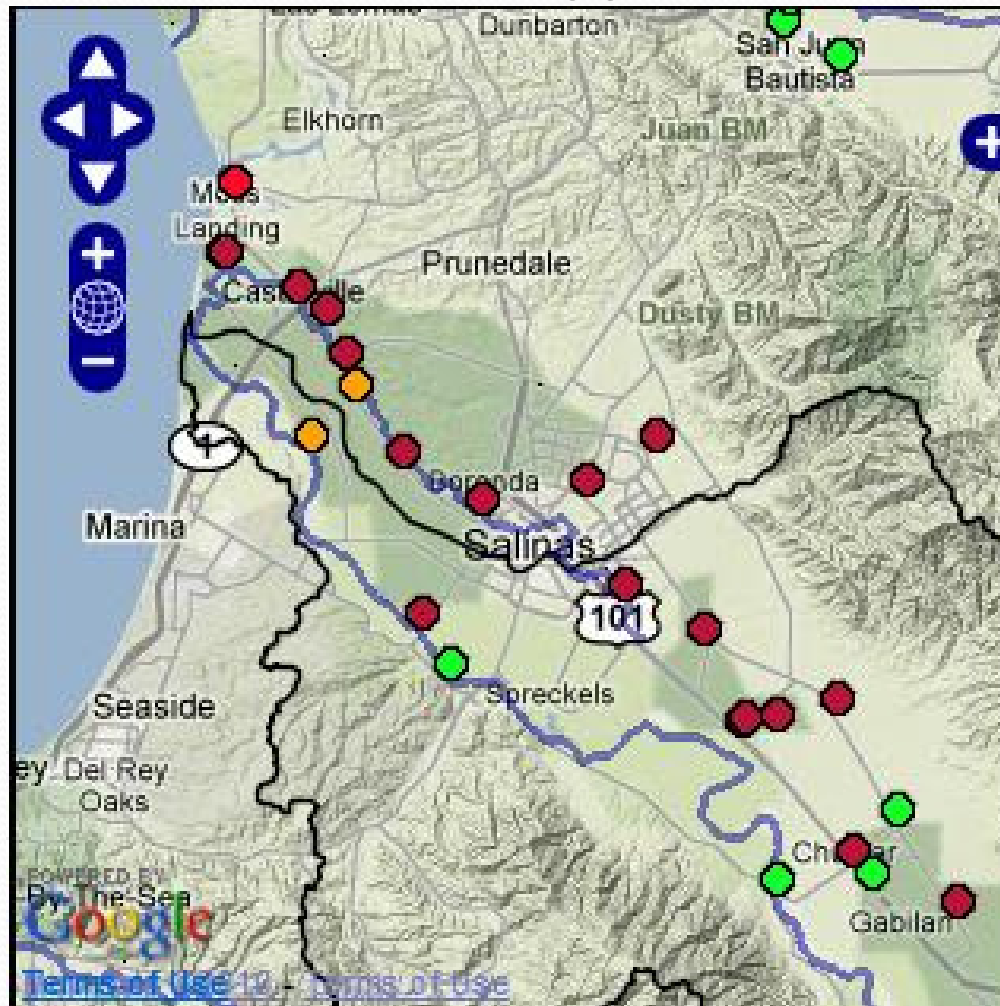
Nitrate as N in Santa Maria



Toxicity of Sediments – Invertebrate Survival



Toxicity of Sediments – Invertebrate Survival Lower Salinas (pyrethroids?)

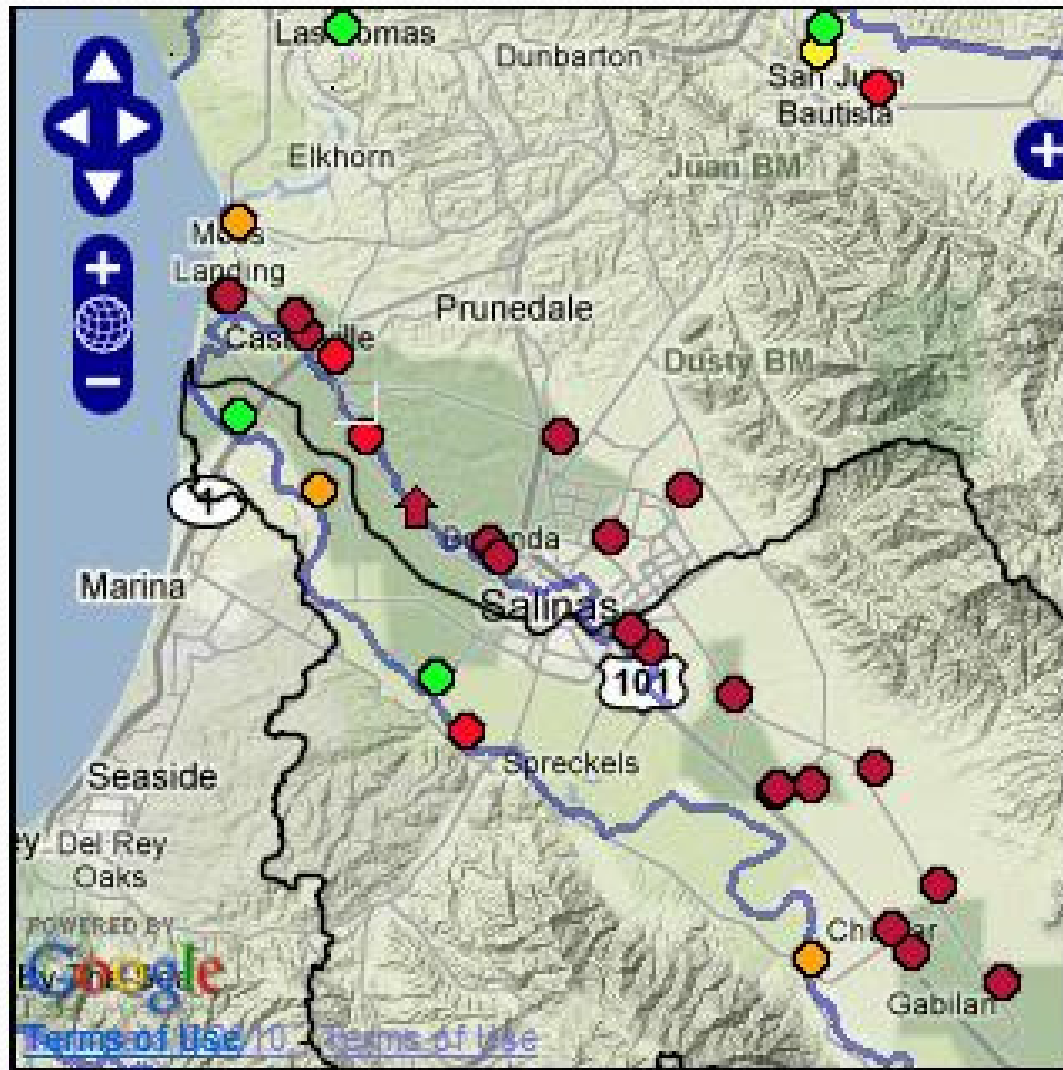


In a statewide study of four agricultural areas conducted by the Department of Pesticide Regulation (DPR), the Salinas study area had the highest percentage of surface water sites with pyrethroid pesticides detected (85 percent), the highest percent of sites that exceeded levels expected to be toxic (42 percent), and the highest rate (by three-fold) of active ingredients applied (113 lbs/acre).

Toxicity of Water – Invertebrate Survival



Toxicity of Water – Invertebrate Survival Lower Salinas (organophosphates?)

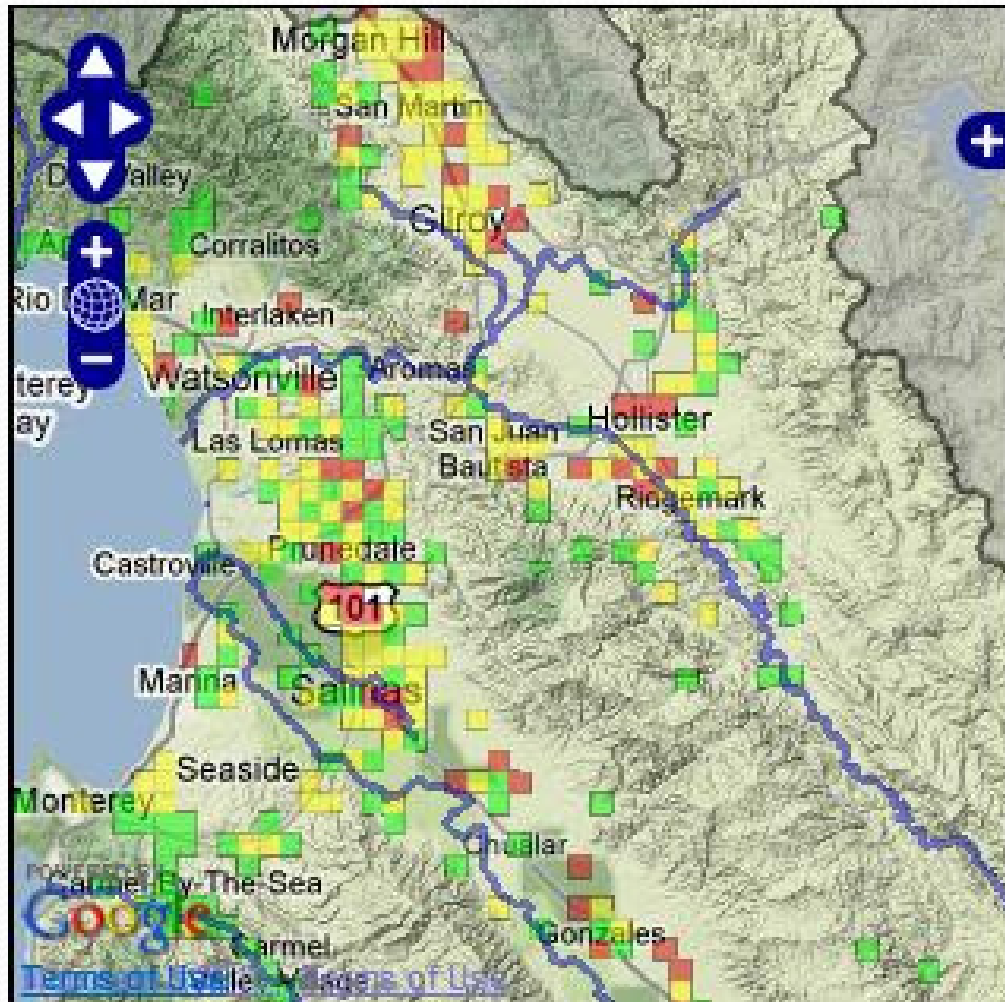




Average Diazinon
Agricultural Use,
Summer (June - August),
2003-2007.
Use is in pounds of
active ingredient.
Source: DPR

Groundwater Nitrate

Source: Department of Public Health and USGS



	Tailwater Contaminants	Tailwater Toxicity	Groundwater Contaminants	Stormwater	Riparian Protection
2004 Conditional Waiver	<ul style="list-style-type: none"> * Narrative Standards * No timeline * Group monitoring 	<ul style="list-style-type: none"> * Narrative Standards * No timeline * Group monitoring 	No	No	No

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2010 Staff Proposal	<ul style="list-style-type: none"> * Numeric Standards * Timeline * Group and individual monitoring 	<ul style="list-style-type: none"> * Numeric Standards * Timeline * Group and individual monitoring 	<ul style="list-style-type: none"> * Numeric Standards * Weak Timeline * Maybe individual monitoring 	<ul style="list-style-type: none"> * Numeric Standards * Timeline * Monitoring? 	<ul style="list-style-type: none"> * Prescribed buffers in some areas * Timeline * Photo monitoring

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Green and Blue Proposal	<ul style="list-style-type: none"> * Numeric Standards * Timeline * Group and individual monitoring 	<ul style="list-style-type: none"> * Numeric Standards * Shorter Timeline * Apply everywhere * Group and individual monitoring 	<ul style="list-style-type: none"> * Numeric Standards * Timeline * Wants clarification of monitoring 	<ul style="list-style-type: none"> * Numeric Standards * Timeline * Monitoring * Cover cropping * Steep slope guidance 	<ul style="list-style-type: none"> * Prescribed buffers in some areas * Timeline * Photo monitoring

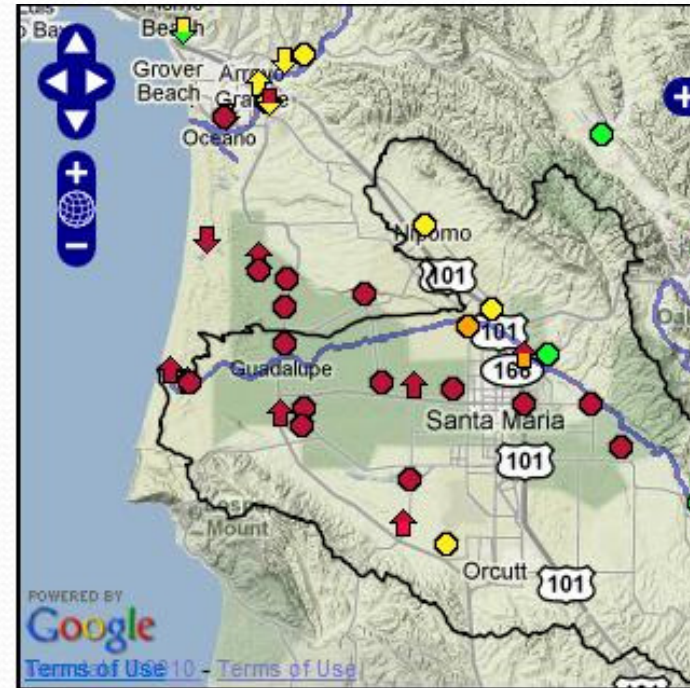
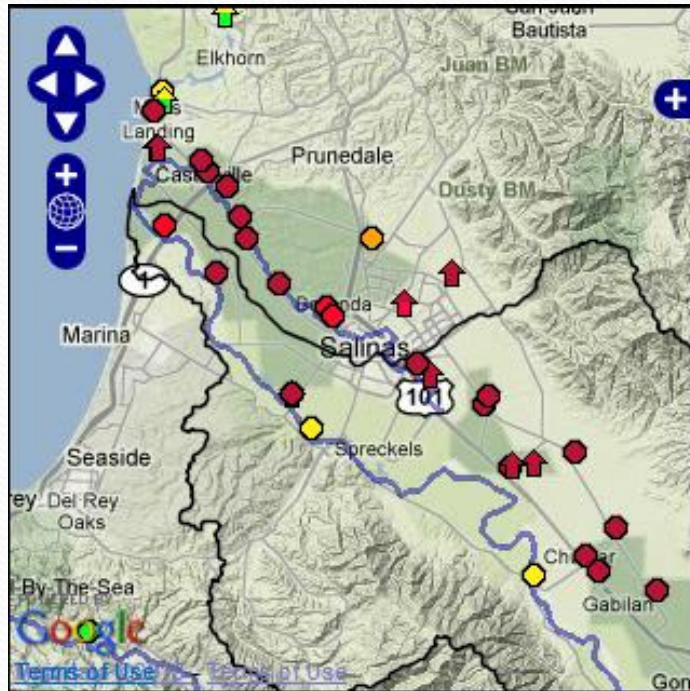
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Ag Proposal	* Narrative Standards * No timeline * Group monitoring	Not mentioned	* Plan to make a plan	Not mentioned	NO!
Price, Postal, Parma	* Narrative Standards * No timeline * Group monitoring	Not mentioned	Not Mentioned	Not mentioned	Not mentioned

What are the components of a conditional waiver?

- Standards
- Timeline / Schedule
- Monitoring

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Do we really need individual MONITORING?



Yes! These are hotspots with worsening conditions. Both areas have group Preservation Inc. monitoring with no improvement or incentive for improvement.

Do we really need individual MONITORING?

- **Will “confidential, voluntary, on-farm” SMART sampling work?**

Do we really need individual MONITORING?

- **Will “confidential, voluntary, on-farm” SMART sampling work?**
- **No**
 - **No description of reliability**
 - **No description of parameters**
 - **Not reported**
 - **No incentive to improve**
 - **Not monitoring**
 - **You get what you pay for**

Do we really need individual MONITORING?

Where can we “give” some?

Do we really need individual MONITORING?

Where can we “give” some?

- **Maybe: Areas with no problems should have lesser monitoring. Maybe only group monitoring.**

Do we really need individual MONITORING?

Where can we “give” some?

- **Maybe: Areas with no problems should have lesser monitoring. Maybe only group.**
- **Mayyyybe: First two years could be confidential and third year+ reported.**

Do we really need riparian vegetation and vegetated buffers?



Do we really need riparian vegetation and vegetated buffers?

- **In many areas, surface water recharges groundwater.**
- **Riparian zones and vegetated buffers sequester nutrients, filter sediments (and associated pesticides), and degrade contaminants.**
- **Many critical beneficial uses are dependent upon riparian HABITAT.**
- **Monterey Ag Commissioners “economic analysis” grossly over-estimated impact.**
 - **Did not consider or balance or even mention health impacts, impacts to urban users, and impacts to other beneficial uses**

Do we really need riparian vegetation and vegetated buffers?

California Department of Pesticide Regulation Report:

Budd, R. 2010. Use of Constructed Wetlands to Remove Pesticides from Agricultural Tailwaters. Presented at the 239th Annual ACS National Meeting, San Francisco, CA March 22, 2010

Conclusions: **“Wetlands efficient at removing pesticides from water column”**

- **“Concentrations reduced 52-94% for pyrethroids, 52-61% for chlorpyrifos”**
- **“Loads out reduced > 95% for pyrethroids, 68 – 98% for organophosphates”**
- **“Potential sediment toxicity reduced to below LC50 values”**

Do we really need riparian vegetation and vegetated buffers?

California Department of Pesticide Regulation Report:

Zhang, X. 2010. Mitigation Efficacy of Vegetated Buffers in Reducing Non-Point Source Pollution: A critical review and meta-analysis.

Presented at the 239th Annual ACS National Meeting San Francisco, CA. March 22, 2010.

Conclusion: **“Vegetated buffers are effective in removing agricultural non-point source pollution”**

- **“20m buffer remove > 88% sediment”**
- **“20m buffer removes about 90% and 97% of N and P from runoff “**
- **“30m buffer remove ~93% pesticides”**

Do we really need riparian vegetation and vegetated buffers?

Wenger, S. 1999. A review of the scientific literature on riparian buffer width, extent and vegetation. Institute of Ecology. University of Georgia, Athens, Georgia.

Reviewed over 140 sources:

- **“Scientific research has shown that vegetative buffers are effective at trapping sediment from runoff and at reducing channel erosion.”**
- **“To maintain aquatic habitat, the literature indicates that 10-30 m (35-100 ft) native forested riparian buffers should be preserved or restored along all streams.”**
- **“Removal of riparian forests has a profoundly negative effect on stream biota.”**

Do we really need riparian vegetation and vegetated buffers?

Rupprecht, R., Kilgore, C., Gunther, R. 2009. Riparian and Wetland Buffers for Water-Quality Protection, A review of current literature. Stormwater. Nov. – Dec. 2009

Reviewed over 137 sources:

- **“The majority of published studies and technical reports supports the conclusion that vegetated buffers adjacent to wetlands and stream channels provide substantial benefits for protecting and enhancing water quality. “**
- **“For stream bank stability, temperature control, minimizing degradation from direct impacts, and pollutant removal capacities, substantial benefits are achieved within the first 50 feet of vegetated buffer width...”**

Do we really need riparian vegetation and vegetated buffers?

Where can we “give” some?

- Maybe: New FDA Food Safety marketing agreement will require vegetated instead of scorched earth buffers.
- Mayyyybe: 100 feet could be reduced to a lesser number. What does the science support?

Concentration vs Load

The most basic beneficial uses we are to protect are:

- Swimmable
- Fishable
- Drinkable

What matters to a swimmer? **Concentration**

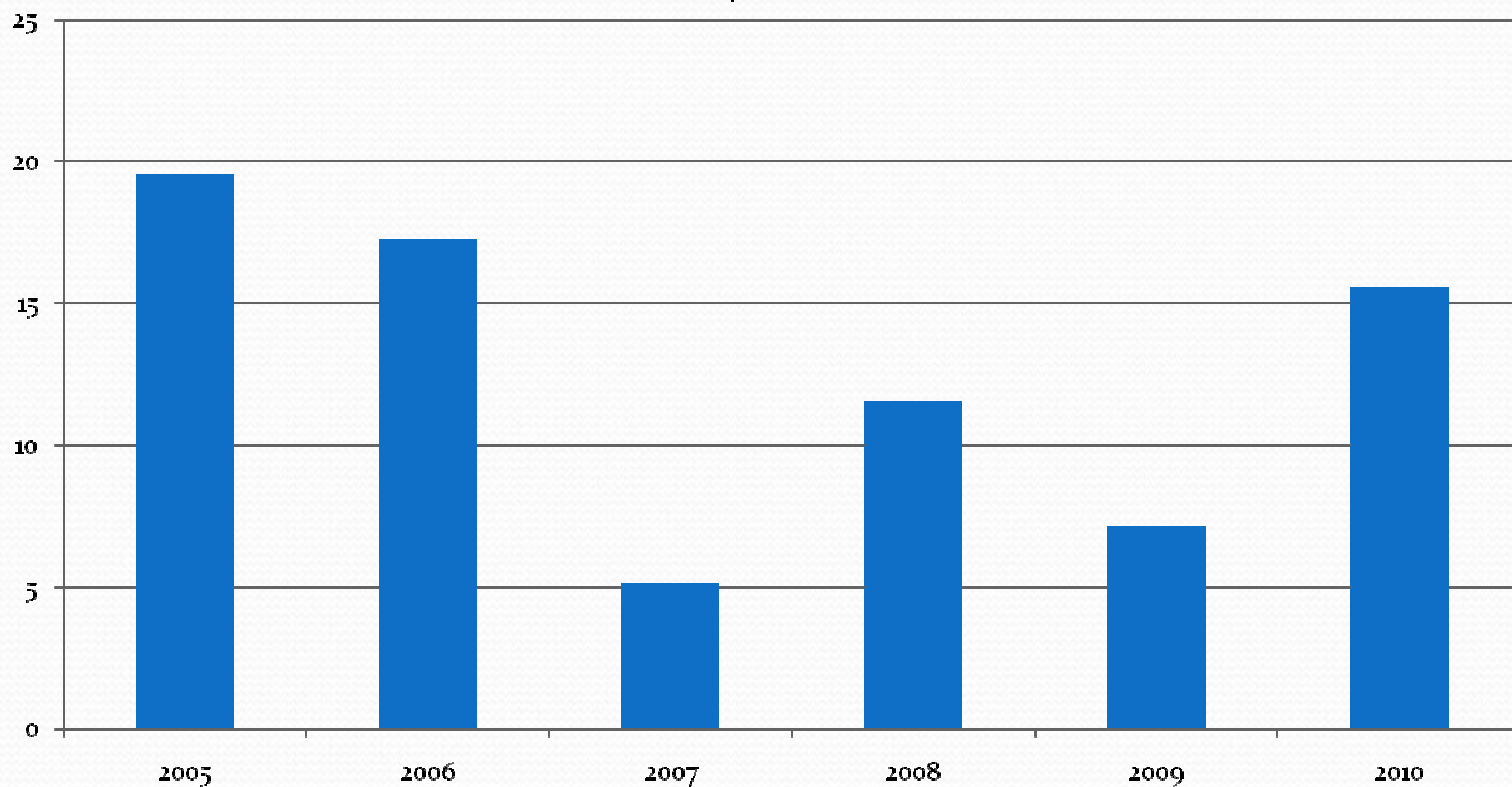
What matters to a fish? **Concentration**

What matters to drinking water? **Load and Concentration**

Concentration vs Load

Inches of Rainfall - Santa Maria

Normal = 14.01



Should the Board Require Educational Credits?

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- **Who? Owner? Grower? Does grower stay the same over 5 years?**
- **Are you going to enforce education credits?**
- **Is education a RWQCB strength?**
- **We suggest RWQCB set clear and concise STANDARDS and enforce those standards.**
- **There are PLENTY of contractors and agencies offering technical assistance (free and fee)**

This is what you have.



This is where you say you want to go:

Healthy Aquatic Habitat – By 2025, 80 percent of Aquatic Habitat is healthy, and the remaining 20 percent exhibits positive trends in key parameters.

Proper Land Management – By 2025, 80 percent of lands within an watershed will be managed to maintain proper watershed functions, and the remaining 20 percent will exhibit positive trends in key watershed parameters.

Clean Groundwater – By 2025, 80 percent of groundwater will be clean, and the remaining 20 percent will exhibit positive trends in key parameters.

What will get you there?

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