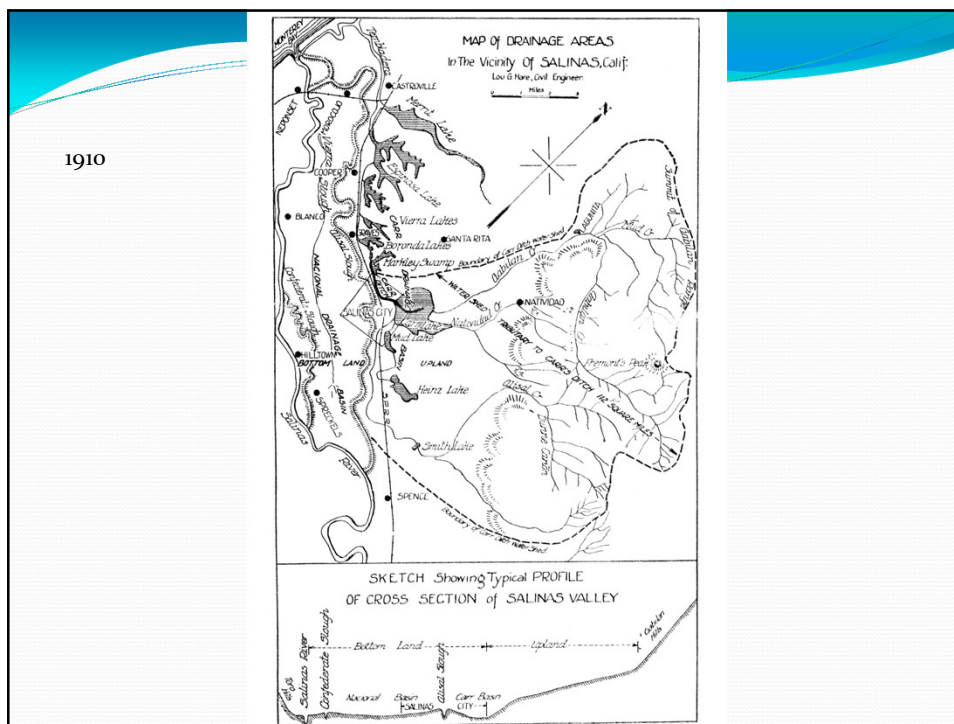
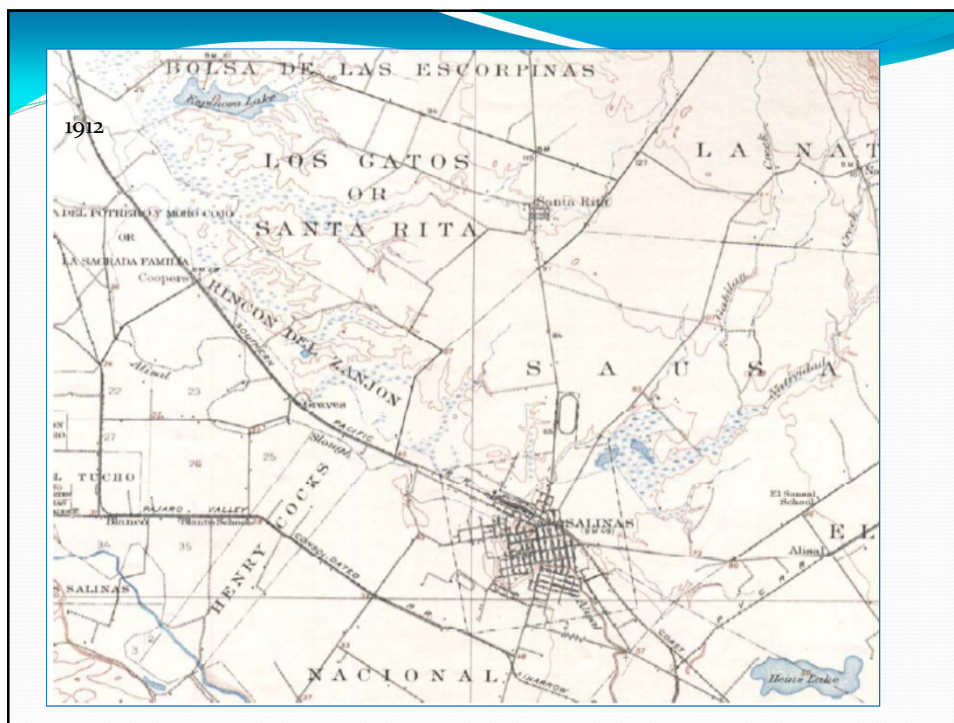
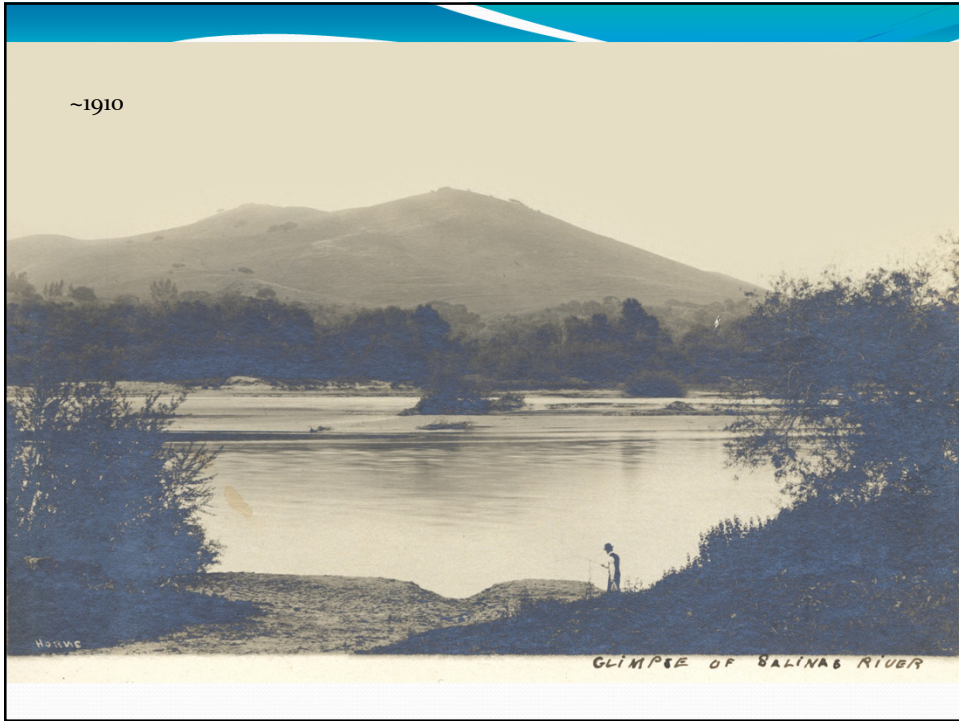


1910



1912



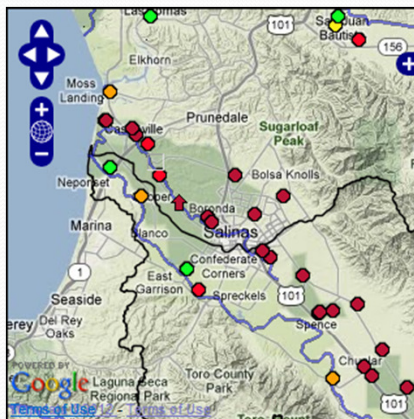






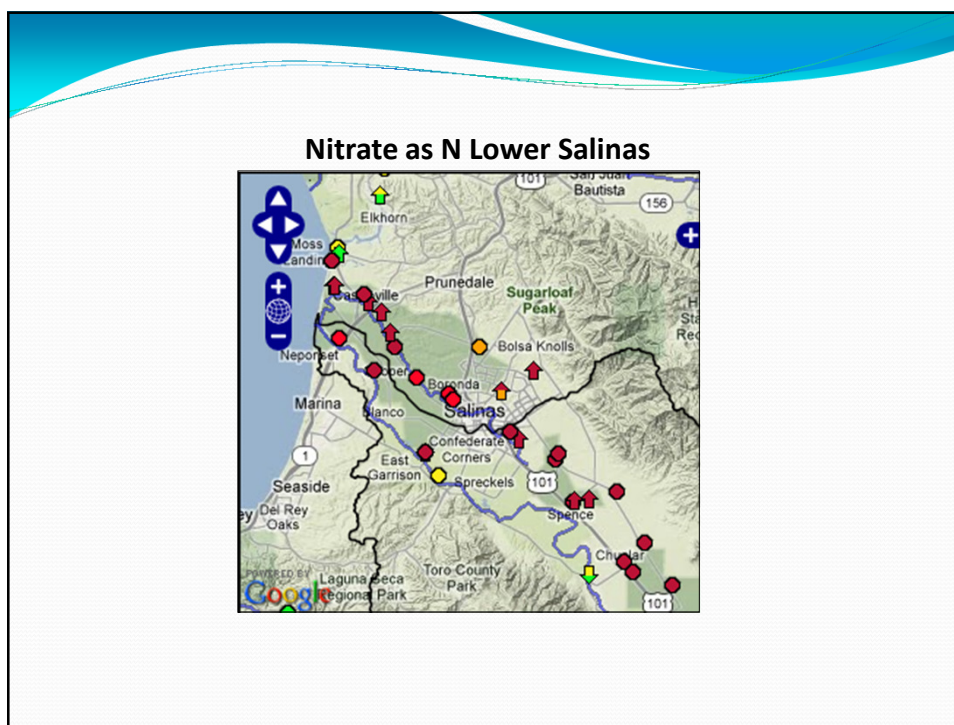
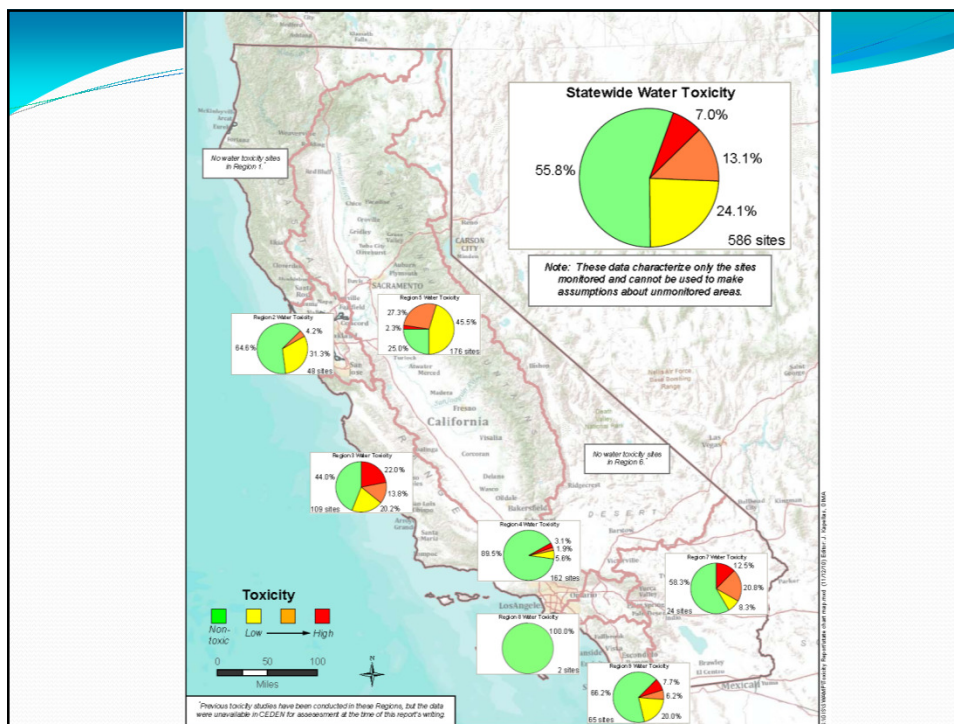


Toxicity – Invertebrate Survival in Water Lower Salinas

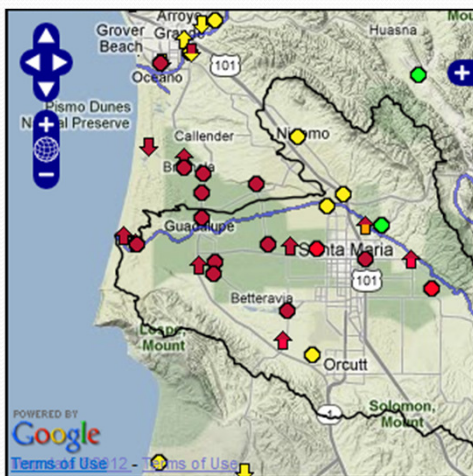


Toxicity – Invertebrate Survival in Water Lower Santa Maria

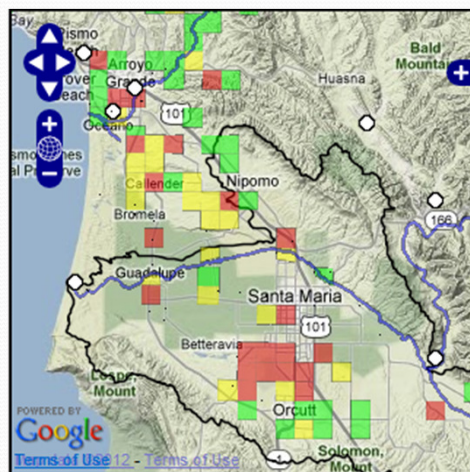




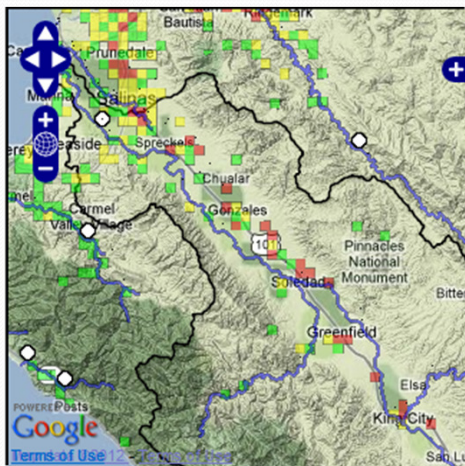
Nitrate as N Lower Santa Maria



Local Groundwater Lower Santa Maria



Local Groundwater Lower Salinas



PACIFIC INSTITUTE

The Human Costs of Nitrate-contaminated Drinking Water in the San Joaquin Valley

Executive Summary
March 2011

In Collaboration With
COMMUNITY WATER CENTER **CLEAN WATER FUND**

The cover features a close-up photograph of a young girl drinking from a glass. The Pacific Institute logo is in the top right corner. The title and subtitle are centered below the photo. At the bottom, logos for the Community Water Center and Clean Water Fund are displayed.



“Ocean discharge of freshwater microcystins was confirmed for three nutrient-impaired rivers flowing into the Monterey Bay National Marine Sanctuary... Deaths of 21 southern sea otters, a federally listed threatened species, were linked to microcystin intoxication.”

Miller MA, Kudela RM, Mekebri A, Crane D, Oates SC, et al. (2010) Evidence for a Novel Marine Harmful Algal Bloom: Cyanotoxin (Microcystin) Transfer from Land to Sea Otters. PLoS ONE 5(9): e12576. doi:10.1371/journal.pone.0012576

Central Coast Regional Water Quality Control Board goals:

- **Eliminate toxic discharges of ag pesticides to surface and ground waters**
- **Reduce nutrient discharges to surface waters**
- **Reduce nutrient discharges to groundwater**
- **Minimize sediment discharges from agricultural lands**
- **Protect aquatic habitat**

Table 1. General Comparison of All Alternatives

Comparison of All Alternatives ¹ based on Agricultural Order Requirements ²					
Authority	Legal Requirement	Confirmation of Compliance	Point of Compliance	Milestone(s) to Measure Progress	Time to Compliance
Porter-Cologne, Basin Plan	Eliminate toxic discharges of agricultural pesticides to surface waters and groundwater	FARM BUREAU AG GROUP OSR ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU OSR ENV 2011 ORDER	FARM BUREAU OSR ENV 2011 ORDER
Porter-Cologne, Basin Plan	Reduce nutrient discharges to surface waters to meet nutrient standards	FARM BUREAU AG GROUP OSR ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU OSR ENV 2011 ORDER	FARM BUREAU OSR ENV 2011 ORDER
Porter-Cologne, Basin Plan	Reduce nutrient discharges to groundwater to meet nitrate standards	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER	ENV 2011 ORDER	ENV 2011 ORDER
Porter-Cologne, Basin Plan	Minimize sediment discharges from agricultural lands	FARM BUREAU AG GROUP OSR ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU OSR ENV 2011 ORDER	FARM BUREAU OSR ENV 2011 ORDER
Porter-Cologne, Basin Plan	Protect aquatic habitat	OSR ENV 2011 ORDER 2004 WAIVER	ENV 2011 ORDER	ENV 2011 ORDER	ENV 2011 ORDER

¹Alternatives:
 FARM BUREAU = CA Farm Bureau Federation and other Ag Organizations, December 3, 2010 version
 AG GROUP = Agricultural Industry representatives, March 17 and May 4, 2011, as for third-party groups or "coalitions"
 OSR = OSR Enterprises, Inc.
 ENV = Monterey Coastkeeper and other Environmental Organizations
 2011 ORDER = 2011 Draft Agricultural Order
 2004 WAIVER = Existing 2004 Conditional Waiver for Irrigated Agriculture
²Requirements established as framework for development of Draft Ag Order in December 2008

- Our organizations continue to support adoption of the February 2010 Draft Order, as it is most protective of water quality and adequate to fulfill your statutory duties;

- Our organizations conditionally support adoption of the Staff Proposal, contingent on several additions and revisions as follows.

After two years from the implementation of this Order, any operation that discharges to a waterbody impaired for toxicity and continues to show water or sediment toxicity in the previous two (CMP) toxicity tests immediately moves to tier 3 unless it can be shown by the operation that the toxicity is caused by legacy contaminants such as DDT/DDE.

A vegetated buffer strip of at least 30 feet shall be maintained along all Tier 2 and 3 streams based on the National Hydrography Dataset Plus (NHDPlus,) and a vegetated buffer strip of at least 50 feet shall be maintained along lakes, wetlands, estuaries, and other natural bodies of standing water.