

California – Thoughts on Agricultural Water Quality and Water Quality Regulations



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[We] represent the agricultural community in the development and implementation of voluntary, cost-effective, producer-directed programs to protect water quality on the California Central Coast .

Education
Outreach
Coordination
Facilitation
Innovation

Examples of What We Do

SEDIMENT MANAGEMENT

- Initiated a multi-species safe harbor agreement for sediment basins.

INTEGRATED PEST MANAGEMENT

- Developed a Lygus bug scouting video for Hispanic strawberry growers.
- Finalized an EPA Sustainable AG Index Survey of growers in two counties.

IRRIGATION AND NUTRIENT MANAGEMENT

- Collaborated to develop standard operating procedures for irrigation and nutrient mgt.
- Worked with ten growers in Santa Clara on irrigation efficiency and distribution uniformity.
- Conducted three irrigation and nutrient management workshops.
- Met with Certified Crop Advisors to discuss building technical capacity in the private sector.

PESTICIDE MANAGEMENT

- Conducted a pesticide mitigation demonstration projects in Santa Maria.
- Commented on Calif. Dept. of Pesticide Regulation draft surface water regulations.

RANGELAND WATER QUALITY

- Revising the Rangeland Water Quality Plan and educational seminars.
- Coordinated a peer review of the Cattlemen's Central Coast NPS Grazing document.

CO-MGT OF WATER QUALITY AND FOOD SAFETY

- Facilitated a Technical Advisory Committee Meeting to plan outreach on Co-management of Water Quality/Food Safety research data.
- Participated in the Farm Food Safety Conservation Network.

COLLABORATIONS:

- Involved with a variety of collaborations and meetings that do not have immediately measurable results but establish connections, create relationships and impart information which will lead to tangible water quality improvement.

TMDL AND REGULATORY PROGRAMS:

- Participating in the stakeholder processes for four Total Maximum Daily Load processes which address: fecal coliform, sediment, chlorpyrifos/diazinon, pesticides, and nutrients.

CONDITIONAL AG WAIVER

- The Coalition is providing technical assistance to a team formed to draft an alternative Conditional Waiver proposal from agriculture. The group is formed by seven county Farm Bureaus, California Federation of Farm Bureaus and Western Growers Association.

Central Coast



California Water Supply Issue

- 1940 Export of Delta Water begins to regional users
- 1959 Moneys approved for SWP
- 1973 SWP Aqueduct completed to southern California
- 1992 Delta Protection Commission formed
- 1987-1992 Drought - Delta Fish species decline
- 1993 Delta smelt listed on ESA
- 1994 Cal-Fed formed and establishes record of decision in 2000
- 2004- 2009 Drought – fish populations declines
- 2004 USBR sued because of inadequate water flows
- 2005 California Water Plan (Ag vs. Urban vs. environmental uses)
- 2007 Judge Wanger ruled SWP and Central Valley Project were violating ESA
- 2008 Water allocations reduced because of drought
- 2009 Legal wrangling continued while impacts were felt
- 2010 **Judge Wanger - Biops did not account for how water allocation reductions damage human environment and they did not use best available science.**

California Surface Water Regulatory History

- 1949 Nine Regional Water Quality Control Boards formed
- 1967 State Water Resources Control Board was formed
- 1969 Porter Cologne Water Quality Control Act ratified in California
- 1972 CWA – NPDES Program for Point Sources
- 1987 CWA directed states to develop plans to deal with Non Point Sources (NPS).
- 1982 23 Non-conditioned Waivers were granted
- 1988 First SWRCB NPS plan – not part of State Water Code
- 1999 SWRCB legislatively required to develop guidance for NPS, imposed fees for WDRs and imposed a 5 year term on Waivers
- 1999 Regional Boards required to review terms of Waivers
- 2000 Regional Boards began to discuss **Conditional Ag Waivers**

Regulatory History

- **2000** Imperial Valley Sediment TMDL developed
- **2002** Central Valley adopted first Conditional Ag Waiver
- **2003** Central Valley Ag Waiver contested and Irrigated Ag Program adopted
- **2003** Imperial Valley adopted sediment TMDL
- **2004** NPS Implementation Policy (3 regulatory vehicles for NPS are WDRs, Waivers and Prohibitions)
- **2004** Central Coast adopted Conditional Ag Waiver
- **2005** LA Region adopted Conditional Ag Waiver
- **2007** Central Valley began negotiating next Conditional Ag Waiver
- **2009** San Diego Region adopted Conditional Ag Waiver
- **2009** DPR began crafting Surface Water Regulations
- **2009** Central Coast negotiations to renew Conditional Ag Waiver Failed
- **2010** SWRCB anticipates Central Coast Conditional Ag Waiver will be petitioned and possibly appealed

Aquatic and Riparian Endangered Species Stipulated Injunctions

- **2002 Washington Toxics Case – Salmon – 55 pesticides**
- **2004 WTC - EPA found negative effects determinations for 37 pesticides**
- **2006 Red Legged Frog – 66 pesticides**
- **2007 San Francisco Bay - 11 species - 75 pesticides, Ag and Urban**
- **2008 NMFS completed biological opinion on chlorpyrifos, diazinon and malathion for Washington Toxics case**
- **2009 EPA completed RLF effects determinations**
- **2009 EPA initiates restrictions on chlorpyrifos, diazinon and malathion as a result of NFMS decision**
- **2010 Registrants countersue EPA on ESA restrictions based on NFMS biological opinion**
- **2010 San Francisco Bay Stipulated Injunction decision**

Central Coast

- 1) **Enrollment** with RWQCB
- 2) Attend **15 Continuing Education Hours** of RWQCB approved courses
- 3) Complete and implement **Farm Water Quality Plan**
- 4) Participate in and pay invoice for the **Cooperative Monitoring Program**
- 5) **Implement Management Practices** as outlined in Farm Plan

Its All About Management Practices!

Note: Conditional Ag Waiver Established Authority over Groundwater and Protection of Aquatic Species

2004 Conditional Ag Waiver Data results

- 50 Monitoring Sites
- Monthly sampling,
- Water Toxicity – 4X/ year
- Sediment Toxicity and BI sampling – 1X/year
- Nitrate exceedances
- Water column toxicity –
 - OP pesticides indicated and confirmed
 - Pyrethroid pesticides indicated, not confirmed
- Sediment toxicity and reduced BI diversity correlates with water column toxicity

Spiraling Regulatory Conflicts

Water Quality Protection

- Utilize Vegetative Practices
- Run-off reduction
 - Increased NO3 Concentrations
 - Less fresh water available for coastal estuaries and habitats

Food Safety

- Remove Vegetation
- Impacts wildlife habitat
- Unable to filter sediments

Aquatic or Riparian Species Protection

- Establish Riparian Cover
- Mandate water availability and water quality
- ESA court decisions affecting pesticide uses vs.
- FIFRA registration of alternative products or technologies

2009 Central Coast Conditional Ag Waiver

Points of Conflict between Ag and CCRWQCB:

- **2009 Process -**

- 2004 Waiver answered: “Is there a problem?” **YES!**
- 2009 Proposed Waiver failed to take next step: What is the source of the problem?
- RWQCB went straight to punitive process and regulation
- RWQCB Staff abandoned collaborative approaches

- **Riparian and Pesticide Jurisdiction**

- **Water Quality Objectives**

- **Groundwater and Surface Water Characterization**

- **Grower Monitoring and Reporting**

February 2010 RWQCB Staff Proposal

Grower Requirements

- Augmented Enrollment
- Increased Farm Water Quality Planning
- Nutrient Budget w/ CCA sign-off
- Prohibition against excessive fertilizer use
- Mapping and photo-documentation of riparian areas and/or Riparian Protection Plan
- Spray buffers
- Riparian buffers
- Erosion control and Sediment Mgt Plan
- Groundwater Mgt Plan
- Meet IE and DU goals
- Upgrade irrigation systems
- Document all irrigation, pesticide and fertilizer use

February 2010 CCRWQCB Staff Proposal

Grower Requirements

- On farm water monitoring and reporting
- Tailwater containment
- Plug abandoned wells
- No foliar fertilizer or pesticide application 3 days prior or 3 days after a rain
- Use best available technologies to mitigate pesticide discharges
- Meet mandated reporting and implementation timelines
- Meet unreasonable water quality objectives

Monterey County Economic Impact from Proposed Buffer Zones

**Note: Ag value of Monterey County is \$3,826,791,000
Fifth Largest Ag County in U.S.**

- 1) Loss from buffers of 14,343.36 acres in three main watersheds.
- 2) Loss of production value \$237+Mill and loss of property tax due to changes in land use.
- 3) Increase in demand for social services

Economic Analysis - CCRWQCB Proposal

Minimum and maximum costs per by commodity:

- **Avocados = \$705.45 - \$2,189.94/acre**
- **Cool Season vegetables = \$528.11 – 660.74/acre**
- **Wine Grapes = \$469.05 - \$519.05/acre**

Economic Analysis - Current Proposal

Central Coast Losses

- **Business revenue =**
\$231,453,102.33 and \$298,707,620.54
- **Lost tax revenue =**
\$ 19,624,441 - \$25,326,816
- **Lost labor income =**
\$87,302,937 - \$112,670,999
- **Lost 2,572 to 3,320 jobs will be lost**
- **Total Output Losses are between:**
\$364,393,461 and \$470,277,123

2010 Central Coast Conditional Ag Waiver

Ag's Alternate Proposal:

- **Address Surface and Groundwater and Riparian issues separately – maybe use different regulatory mechanisms?**
- **Education**
 - All enrollees must complete 5 hours of water quality related education within 5 years.
- **Growers will Create a Farm Plan**
 - Farm Plans are kept on site or in the farm offices
 - Annual Farm Reports by each grower
 - All growers will update their Farm Plans after renewal of the Ag Waiver
 - Farm Plans are available for inspection by CCRWQCB staff
 - Business operational records are proprietary and remain confidential

2010 Central Coast Conditional Ag Waiver

Ag's Proposal:

● Monitoring

- Continuation of the Cooperative Monitoring Program
- Voluntary and Confidential SMART Sampling
- Revised CMP Follow-Up Monitoring

● Growers Will Implement MPs

- Summarize water quality related practices
- Evaluate effectiveness of practices
- Implement and/or maintain practices designed to improve water quality
- Fit practice implementation to the unique circumstances of each farm

What Impacts MP Implementation

- **Grower Awareness and Education**
- **Economic**
 - Median Income by County vs. average income
 - Cost of MP
 - More recently Credit Limitations or Restricted Markets
- **Institutional Barriers**
 - Permitting
 - Food Safety
- **Conflicting Regulatory Programs and Policies**
 - Court Decisions: Endangered Species Act/FIFRA
 - Market Impacts: Food Safety/Water Quality/Aquatic Species Protection

Are Technical Solutions Available?

- **Assumption - there is a silver bullet and we can eliminate water quality impairment through MP implementation**

Versus

- **Reality - we have an arsenal of partially effective management practices that may or may not eliminate exceedances, even if/when used collectively.**

Looking for Solutions

Source Controls - Ag



Pollution Prevention –



Solutions May be in the Private Section but There are Challenges

- Lack of understanding of individual issues
- Unable to see the big picture
- Needs to see how developing mitigations fit with corporate mission
- Innovations come from smaller, under-capitalized companies/entities
- Must have a return on investment
- Possibly, no short-term incentive
- Market retention may not be a strong enough incentive

What works?

Growers

- Kinesthetic learning is critical
- Must make sense economically
- Must be easy to explain and easy to use
- Must be adaptable within the framework of the farming system
- Must address an acknowledged problem that needs to be solved
- No better alternative can exist
- Must support the growers' value systems

What Works?

Regulatory

- Must create a “carrot and stick”
- Must take psychology of change into account and sufficient time is given for change to occur
- Can’t cancel tools before replacements are found
- Can’t unreasonably outpace technological “fixes”



Psychology of change

- The change continuum **is fragile and can be undone**
- *Regulation* is not actual improvement
- *A plan* is not actual improvement
- Actual improvement takes \$ and trained persons
- Actual improvement results from muddy shoes



What Can Private Industry Do?

- Look for mitigations or replacement products for products that will eventually be lost because of water quality, endangered species, or air quality issues
- Do research, initial development and field demonstrations for new technologies and products
- Forge problem specific coalitions to find solutions and move those solutions into the marketplace

Potential Environmental Mitigations

- Enzymatic Products:
Landguard
- Trap crops/bug vacuums
- Bio-pesticides
 - Examples
 - Mustard Meal
 - Natural Oils
- Pheromones
- Seed treatments for soil insects
- Efficient use of baits
 - Strategic placement
 - Reduces amount of a.i.
- Creative uses of PAM
 - Irrigation system injection
 - Treated Waddles
 - Innovative applications
 - Treatment of winter fertilizer amendments
- Nitrate/Urea/Ammonia remediation technologies
- Nanotechnologies
- Use eco-friendly emulsifiers and solvents
- Improved formulas and application techniques

What Should Be Done?

One Idea:

- Public/Private Sector “Incubators”
- Research occurs on land which has been set aside through a long-term, tax-incentive easement
- Land is managed by non-profit
- Growers commercially farm the easement
- Production practices **MUST** take research into account
- Coordinated, programmatic investment in future
- Funding is through non-regulatory agency and administered by private foundation or non-profit

Critical Question



Is the cumulative impact of accelerated and conflicting regulation leading to a food production train wreck which will affect the entire nation?

Is this becoming a national security issue?

What Happens to Central Coast Ag without Solutions to Pollution?



What Happens without Solutions?



What Happens to Ag?



Thank you



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