



Agriculture Water Quality SAC MPR Update



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Overview

- Water quality conditions in MBNMS potentially related to agriculture
- History of AWQA
- Current and future AWQA activities
- Management Plan Review Ag Outreach
- Proposed Water Quality Action Plan Outline



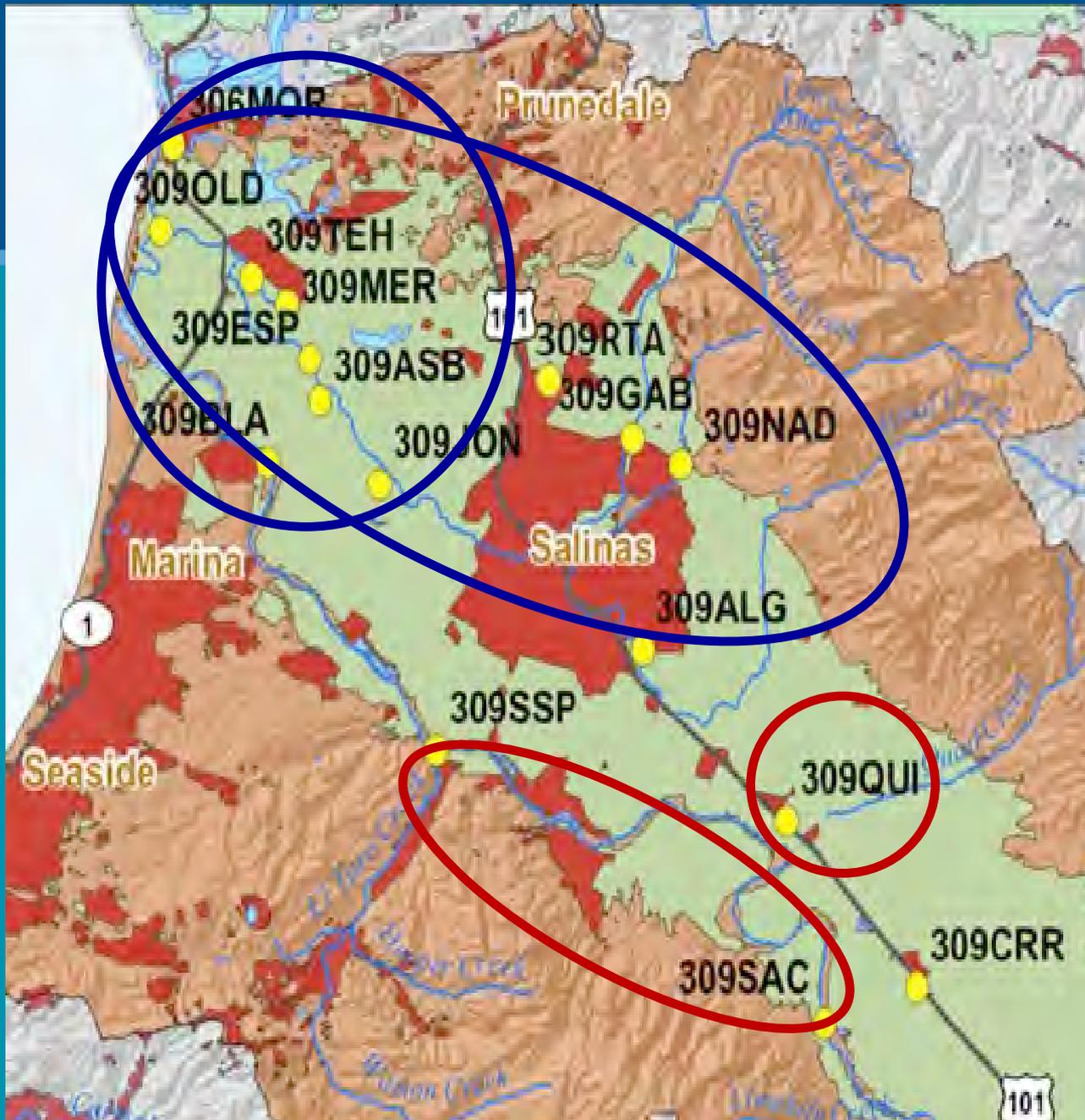
Condition Report Findings 2009-2014

- Ambient toxicity of waterbodies draining to MBNMS due to pesticides (toxaphene, DDT, diazinon, chlorpyrifos, pyrethroids, neonicotinoids)
- 51 impaired waterbodies draining to MBNMS (303d list just updated this year)
- Increased frequency of algal blooms in bay (*Pseudo-nitzschia*, *Akashiwo sanguinae*). Microcystin, freshwater toxin, widespread and correlate with high nutrient loading
 - PO₄ loads increasing in Pajaro and Salinas R
 - NO₃ showing slight decrease in loads (drought?) but still high

Condition Report Findings (cont.) 2009-2014

- Declines in persistent organic pollutants (POPs) in mussels including dieldrin and DDT
- PCBs, DDT and PAHs in water and sediment at levels of concern for marine species, especially sea otters
 - POPs 5-20x higher than Alaskan sea otters
- Current use pesticides and DDT (Smalling et al. 2013) in water, sediment and sand crab/fish tissue

Water Quality in Lower Salinas Valley 2005- 2016



AWQA History

- ❖ 4 Year Stakeholder Process to develop the Ag and Rural Lands Action Plan (1999)
- ❖ AWQA formed to implement Ag and Rural Lands Plan, supported by congressional earmark until 2008.
- ❖ AWQA Activities:
 - Formed Watershed Working Groups
 - Farm Water Quality Planning short courses & Farm Plan Technical Assistance
 - Supported Scientific response to Food Safety following 2006 *E.coli* outbreak
 - Provide Technical Information to Regional Board Staff regarding the Ag Order
 - Calendar & Updates of Ag Events
 - Website Tools for Conservation Management



AWQA fills a unique niche to successfully:

- Coordinate outreach, research, implementation, and technical assistance
- Raise awareness
- Identify opportunities for collaboration and integration
- Share information, resources, tools
- Build relationships
- Maintain communication



Current AWQA Issues/Topics

- Irrigation and Nutrient Management
 - Nitrate Removal Technologies – bioreactors, wetlands, etc.
- Best Management Practice Implementation
- Nutrient Modelling
 - Storm Water Resource Plans, Conservation Innovation Grant (USDA)
- Central Coast Action Tracker
- Watershed Working Groups



Vegetated ditch at UCCE Spence farm

AWQA Future Issues

- Ag Plastic Use, recycling and disposal
- Grants to sustain BMP work and Nitrate removal studies
- Annual Compliance Form –
 - BMP section suggest improvements to RWQCB
- Assist growers with TNA and nutrient budgeting
- Soil Health



Azevedo Bioreactor



Site Tour, Small Scale Bioreactor

MPR Ag Outreach

- AWQA meeting devoted to Agriculture Action Plan in 2015
- Ag Industry MPR forum on Nov. 9, 2016
- WQPP Committee meeting on Feb. 2, 2017



2017
AgKnowledge
Class

Strategies:

- 1. Provide Outreach and Encourage Stewardship of Water Quality**
- 2. Communicate findings of projects and monitoring conducted by the WQPP**
- 3. Facilitate and coordinate regional efforts to improve water quality through the Water Quality Protection Program Committee (and MOA), Agriculture Water Quality Alliance, stormwater programs and Integrated Regional Water Management programs**
- 4. Understand the Land-Sea connection**
- 5. Quantify effectiveness of management practices**
- 6. Monitor and reduce pollutant loads flowing into MBNMS**

1. Provide Outreach and Encourage Stewardship of Water Quality

Activity:

1.1 Foster MBNMS stewards through volunteer citizen science programs throughout MBNMS watersheds.

1.2 Participate in events, panels, festivals, planning/working groups, and trainings to support partners and broaden the reach and knowledge of water quality issues.

1.3 Highlight successful efforts of individuals, cities and agriculture operations through MBNMS volunteer of the year, AWQA recognition, and other opportunities.

1.4 Provide relevant MBNMS water quality messaging for use internally and in partner print and digital/media materials.

2. Communicate findings of projects and monitoring conducted by the WQPP

Activity:

2.1 Regionally support, coordinate and implement volunteer citizen science water quality monitoring programs throughout MBNMS watersheds. (See Education Team Action Plan)

2.2 Increase the public's understanding of effects of pollutants on marine ecosystems and on issues that affect them directly such as contaminated seafood.

2.3 Better convey and promote water quality results and reports for resource managers and the public.

2. Communicate findings of projects and monitoring conducted by the WQPP

Activity:

2.4 Regularly update the SIMoN portal with MBNMS water quality monitoring results.

2.5 Regularly upload MBNMS water quality data to the California Environmental Data Exchange Network (CEDEN) to make data available to the public.

2.6 Coordinate a water quality forum every two years to share information.

2.7 Highlight water quality issues and research needs at MBNMS Research Activity Panel meetings.

3. Facilitate and coordinate regional efforts to improve water quality through the WQPP (and MOA), AWQA, stormwater programs and Integrated Regional Water Management programs

Activity:

3.1 Promote examples of successful, innovative and effective practices, technologies and systemic approaches to reduce pollutant loads.

3.2 Review, evaluate, and comment on ordinances, regulations and permits that may have an effect on MBNMS resources.

3.3 Participate in, and support urban and agriculture sustainability efforts, especially as they relate to climate change and pollutants of concern.

3.4 Assist in the development of Storm Water Resource Plans to better understand and identify opportunities for water retention, groundwater recharge, and improved water quality. Promote regional cooperation and strategies.

3. Facilitate and coordinate regional efforts to improve water quality through the WQPP (and MOA), AWQA, stormwater programs and Integrated Regional Water Management programs

Activity:

3.5 Assist in establishing watershed working groups in sub-watersheds to demonstrate collective solutions to reducing pollutant loads, better leverage resources and meet regulatory requirements.

3.6 Coordinate and facilitate WQPP Committee, Agriculture Water Quality Alliance (AWQA) and Citizen Watershed Monitoring Network meetings.

3.7 Ensure the Water Quality MOA is current and any action items are implemented.

3.8 Develop new partnerships and strive to maintain and improve existing relationships.

4. Understand the Land-Sea connection

Activity:

4.1 Promote investigation into the effects of pollutants on marine ecosystems. Develop a list of research questions where insufficient knowledge exists or new emerging issues are raised, that can be provided to local researchers and students.

4.2 Facilitate discussion and coordinate efforts to develop an integrated regional monitoring program and data reporting that will leverage resources and provide a long-term, robust data set to inform management decisions.
(See Research Team Action Plan)

4.3 Collect and assimilate pertinent data to better respond to MBNMS Condition Report questions.

4. Understand the Land-Sea connection

Activity:

4.4 Pursue opportunities for incorporating or expanding monitoring programs to measure plastic debris, and other pollutants of concern, in surface waters and the ocean.

4.5 Contribute to harmful algal bloom (HAB) research by partnering with local researchers/resource agencies to provide water samples that will add to the pool of knowledge to better understand cause and effects of HABs.

5. Quantify effectiveness of management practices

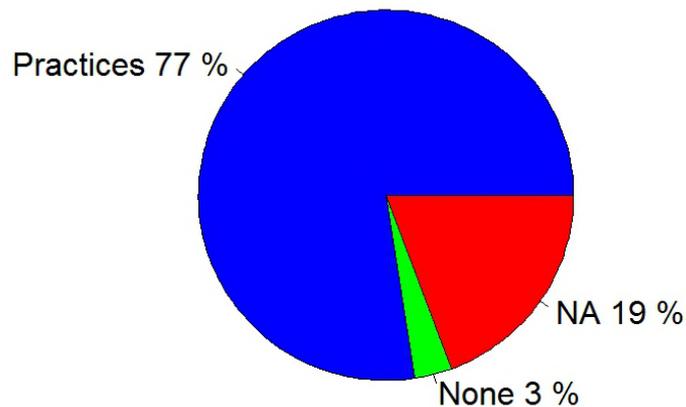
Activity:

5.1 Promote innovative projects to better understand their effectiveness at improving water quality.

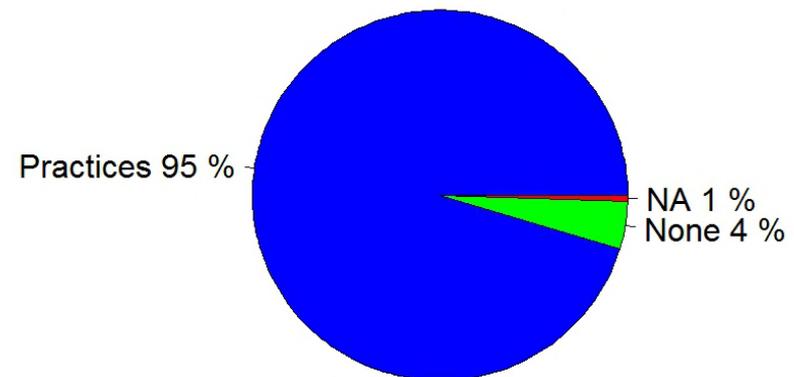
5.2 Manage and encourage use of Central Coast Action Tracker (CCAT) online portal.

5.3 Measure effectiveness of management practices including municipal infrastructure repairs and maintenance as well as on and off farm practices.

Ranches Implementing BMPs 2015



Ranches Implementing BMPs 2016



6. Monitor and reduce pollutant loads flowing into MBNMS

Activity:

6.1 Reduce pollutant discharges to storm drains and surface waters through source tracking.

6.2 Promote and increase use of “human source” and “rapid” indicators in monitoring programs to better track pollutant sources and devise solutions.

6.3 Increase availability of online tools and resource materials with information to reduce pollutant loads from agriculture operations.

6.4 Through 24-hour emergency response system, respond to any unusual discharges that threaten MBNMS resources. (See Resource Protection Action Plan)



Questions?

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