

Emerging Regulations and Nitrogen Management Planning

Central Valley Water Board

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Almond Board
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Presentation Overview

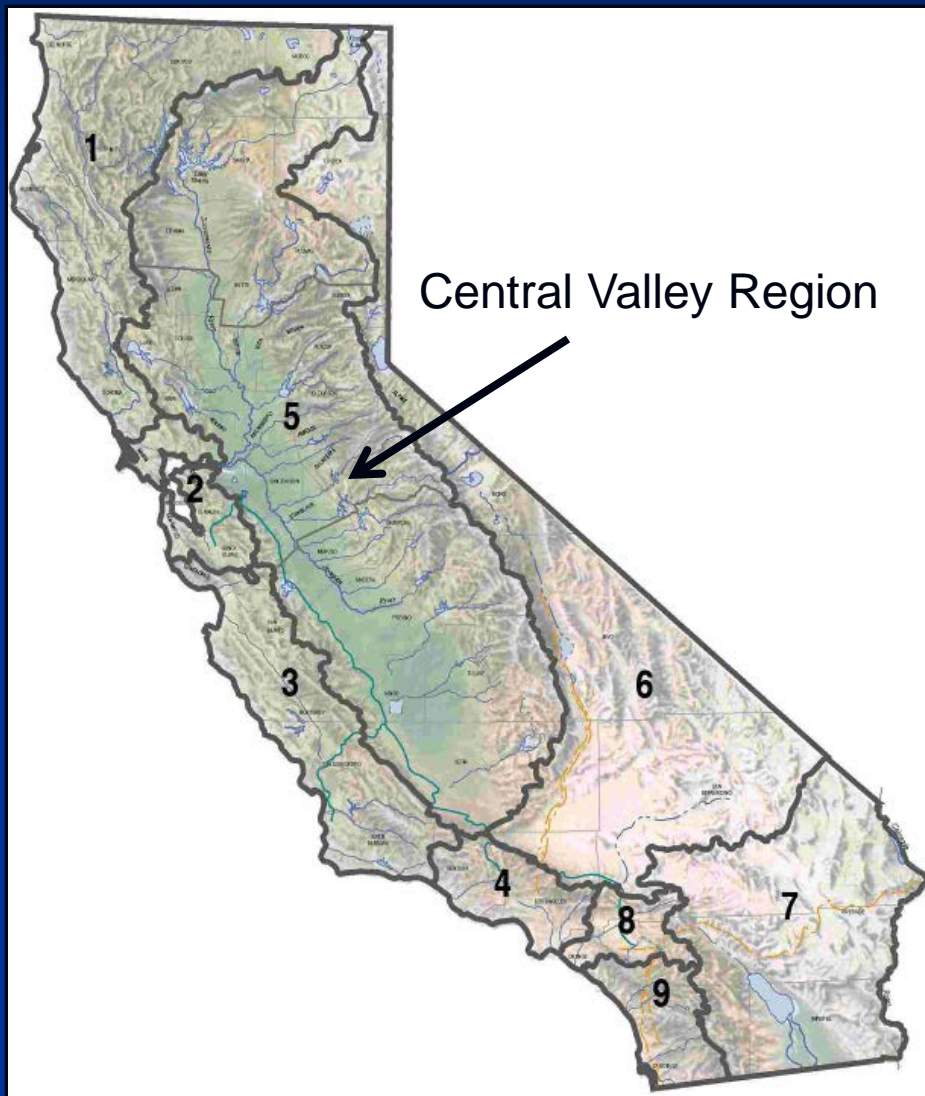
- Background
- Overall Direction
- Current Proposal – Nitrogen Management
- Next Steps

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
- Learn and adapt as we move forward

Nine Regional Water Boards



- Implement State and federal water quality laws based on region specific conditions
- Regulate discharges of waste

Irrigated Lands Regulatory Program

2003 Program

- Surface water protection program only
- Coalition groups provide lead role in interacting with the Water Board
 - 25,000 landowners currently enrolled
 - Five million acres of irrigated land

Direction from Central Valley Water Board, June 2011

- Tailor approach specific geographic areas or commodities
- Include requirements to protect surface and groundwater quality
- Continue with Coalitions (third-parties) as lead to assist growers w/compliance
- General Waste Discharge Requirements (WDRs)

Direction from Central Valley Water Board, June 2011

- Coalition enrollment deadline
 - Join a coalition by May 13, 2013
 - Landlord or tenant may enroll the parcel(s)
 - After that date, landowner must apply to the Water Board to join a coalition
 - After May 15, 2013 additional fees will apply

Direction from Central Valley Water Board, June 2011

- Or ... Obtain coverage under the General WDR as an individual grower
 - (anticipated adoption of this coverage expected May 2013)
 - Costs and requirements anticipated to be the same as an individual permit

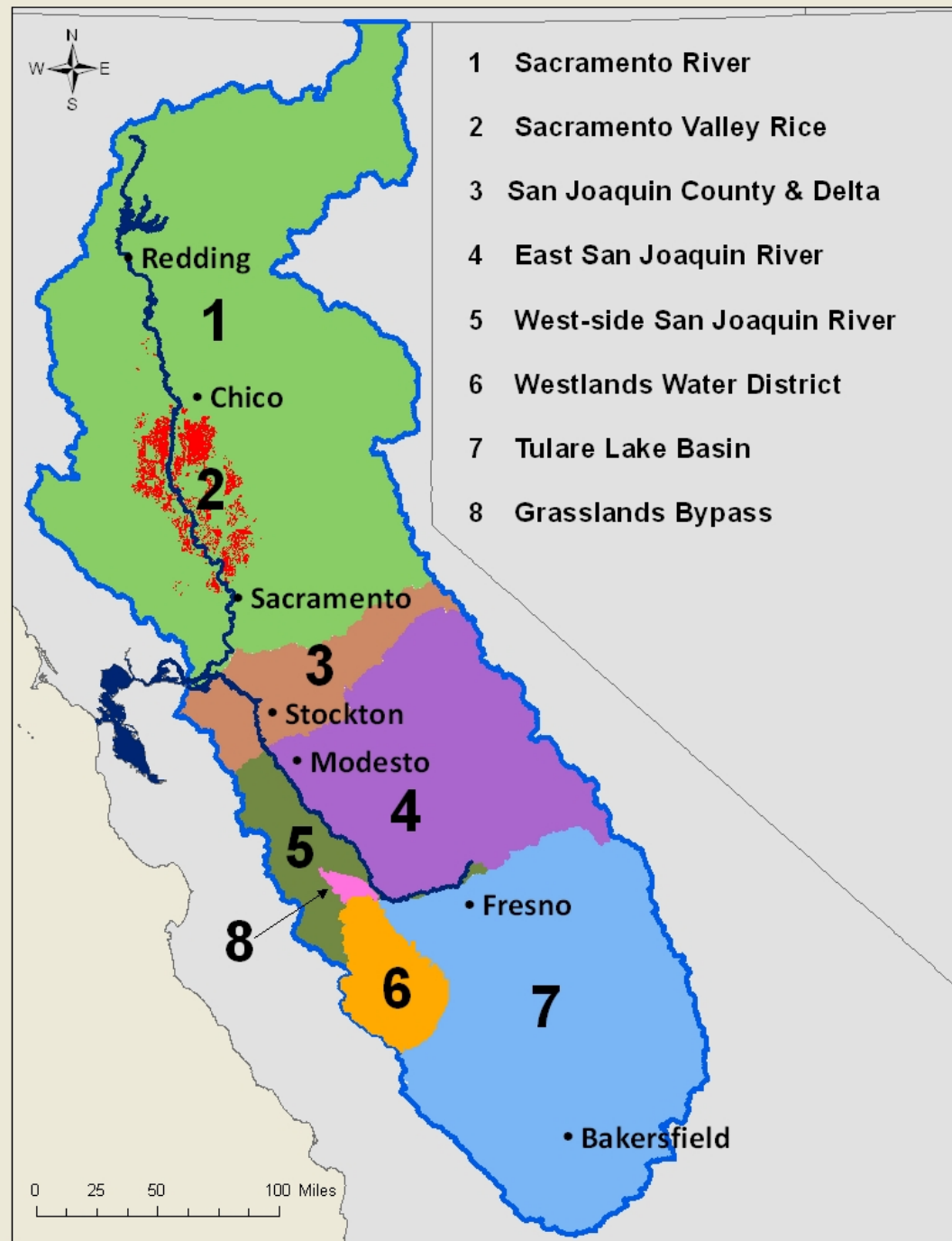
Direction from Central Valley Water Board, June 2011

- Or ... Obtain and individual permit
 - Apply to have your own WDR
 - Monitoring runoff, monitoring wells, technical reports
 - Costs would include administrative fees (example a 10-100 acre = \$750+\$5/acre), plus monitoring and reporting costs.

Direction from Central Valley Water Board, June 2011

- You do not need coverage if:
 - Your commercial lands are covered under the General Order for Existing Milk Cow Dairies or NPDES Dairy General Order
 - Your property is not irrigated or commercial agriculture

Geographic Areas/Commodities Addressed by WDRs



Porter-Cologne Water Quality Control Act (*The California Water Quality Law*)

Applies to:

- “Waters of the state” – any surface water or groundwater
- Discharges of waste to waters of the state

Irrigated Lands Regulatory Program (ILRP)

- Includes commercial operations, managed wetlands, nurseries, and greenhouses
- Surface water discharges
 - surface return flows, storm runoff, tile drainage
- Groundwater discharges
 - Fertilizer/pesticides moving down soil profile, well head, or backflow

Nitrates and Groundwater

- Pollution pathways for nitrates and pesticides are similar
- Nitrates/water soluble pesticides leach through soil to groundwater
- Pathway for nitrates/pesticides
 - Surface runoff
 - Unprotected / improperly sealed wells
 - Over application of nitrogen fertilizer
 - Other conduits to groundwater (e.g., backflow)

Known Nitrate Sources (Regional)

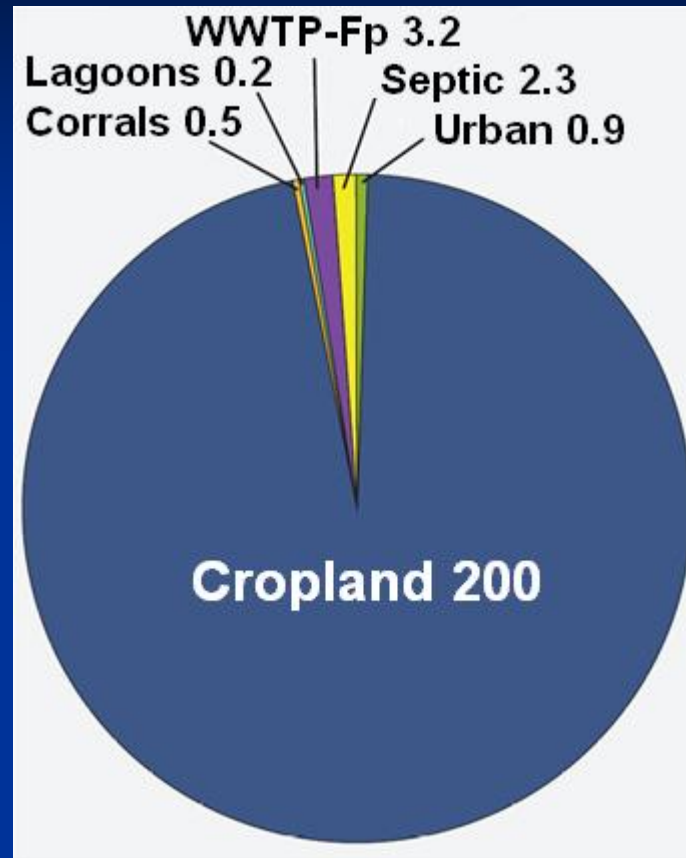


Figure 1. Estimated groundwater nitrate loading from major sources within the Tulare Lake Basin and Salinas Valley, in Gg nitrogen per year (1 Gg = 1,100 t).

<http://groundwaternitrate.ucdavis.edu/files/139110.pdf> ; Viers, J.H., et al (2012). Nitrogen Sources and Loading to Groundwater

Approach for new ILRP

- Identify high/low vulnerability areas
- Focus requirements and plans on High Vulnerability areas
- High Vulnerability areas will be identified by the third-party

Focus on management practice implementation and reporting

Limited monitoring (compared to other programs)

Eastern San Joaquin River Watershed




- 1 million+ acres of irrigated lands

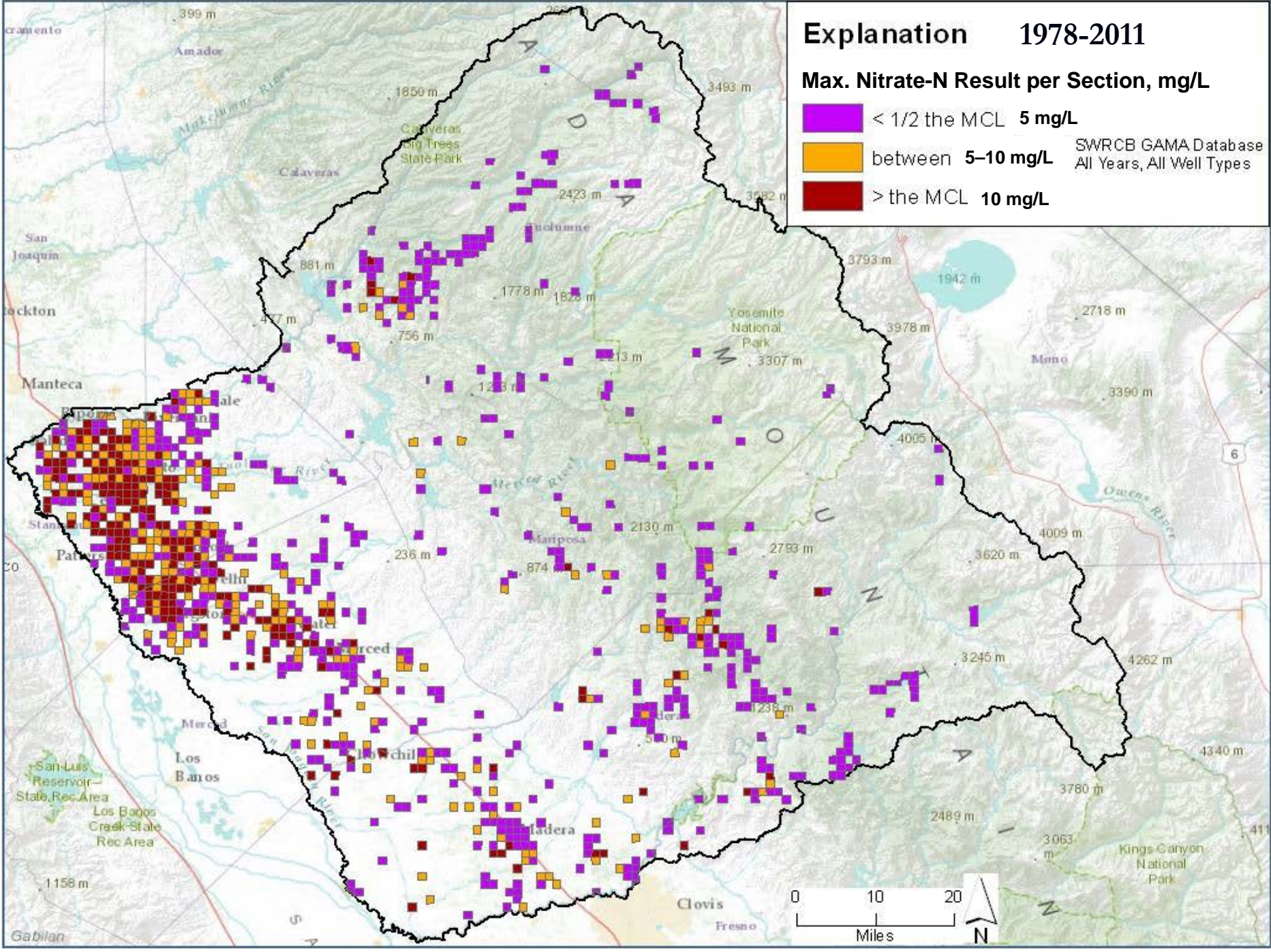
- Major crops:
almonds
hay
corn
grapes
tomatoes
pasture
wheat
cotton
walnuts

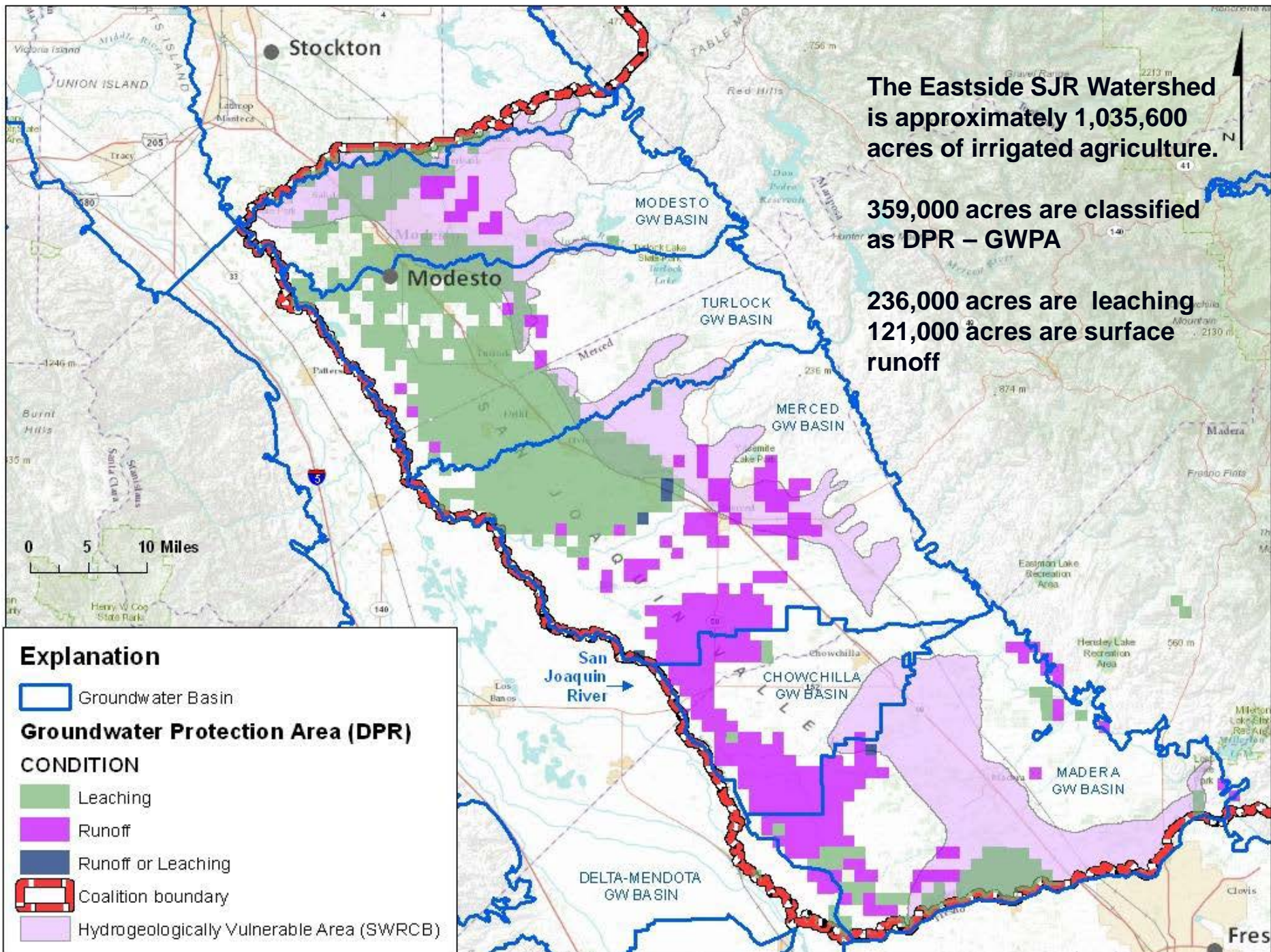


Explanation 1978-2011

Max. Nitrate-N Result per Section, mg/L

-  < 1/2 the MCL 5 mg/L
 -  between 5-10 mg/L
 -  > the MCL 10 mg/L
- SWRCB GAMA Database
All Years, All Well Types











The Eastside SJR Watershed is approximately 1,035,600 acres of irrigated agriculture.

359,000 acres are classified as DPR – GWPA

236,000 acres are leaching
121,000 acres are surface runoff

Explanation

-  Groundwater Basin
- Groundwater Protection Area (DPR) CONDITION**
-  Leaching
-  Runoff
-  Runoff or Leaching
-  Coalition boundary
-  Hydrogeologically Vulnerable Area (SWRCB)





Draft High Vulnerability Groundwater Areas & Farmland Mapping and Monitoring Program (FMMP) Areas

East San Joaquin
Water Quality Coalition

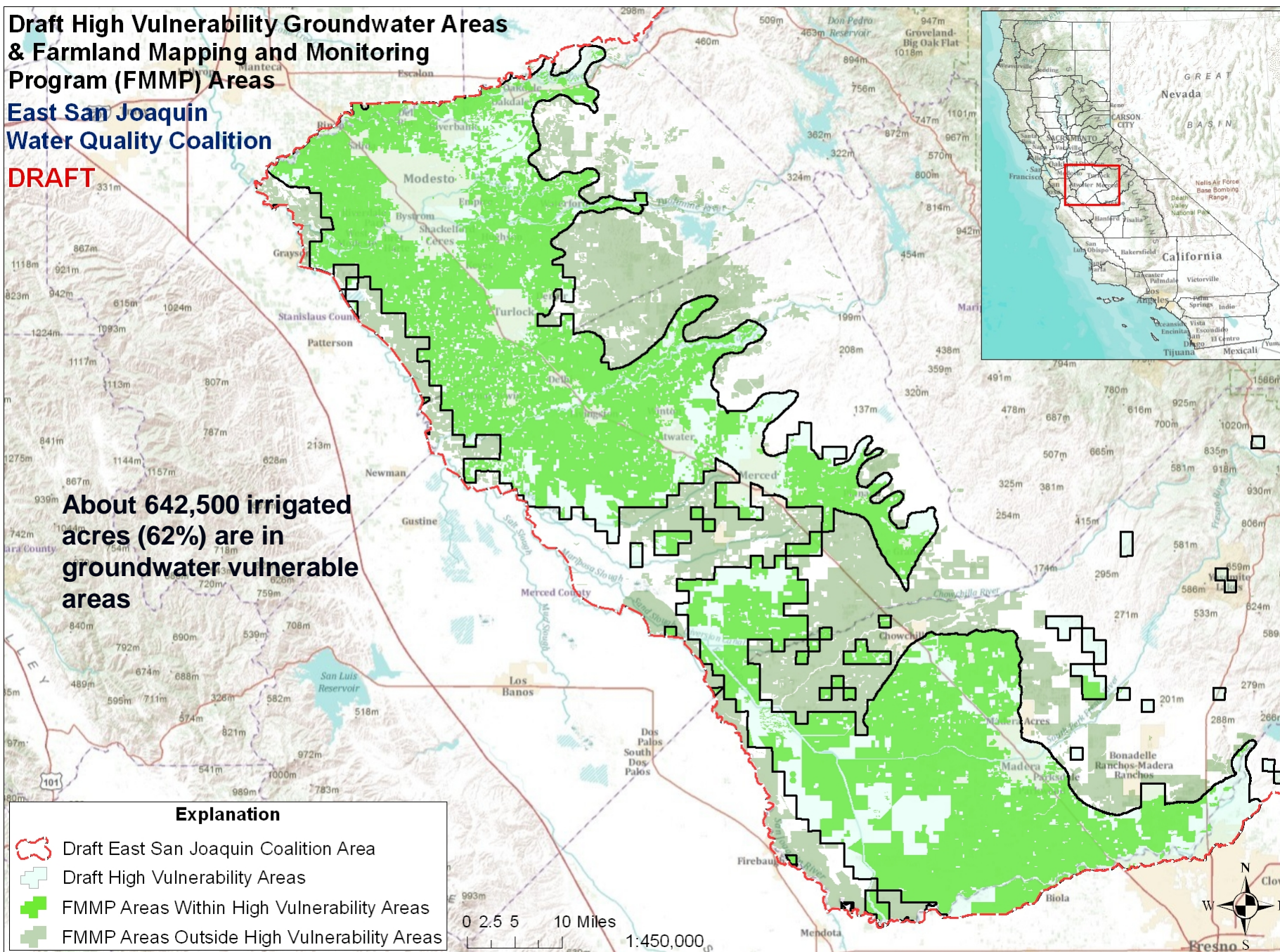
DRAFT

About 642,500 irrigated acres (62%) are in groundwater vulnerable areas

Explanation

-  Draft East San Joaquin Coalition Area
-  Draft High Vulnerability Areas
-  FMMP Areas Within High Vulnerability Areas
-  FMMP Areas Outside High Vulnerability Areas

0 2.5 5 10 Miles
1:450,000



Nitrogen Management Plans

Key mechanism to minimize nitrogen discharge to surface and groundwater

- High Vulnerability Areas
 - CCA certifies nitrogen plans for members
 - CDFA certification program in development
 - Member self-certification with training
 - Nitrogen Management Plan Summary Reports sent to Third-party
- Low Vulnerability Areas - ?
- Third-party/Ag will develop templates

Nitrogen Management Plans

Potential Components of Plan (from draft template prepared by Coalition)

- Crop Nitrogen Demand
 - Crop type; expected yield; nitrogen crop needs to meet yield
- Nitrogen Supply
 - Total N applied – spring, summer, fall, foliar, manure, compost, other
 - Soil N Credits – from previous legume crop; residual from manure; organic matter mineralization; soil test; amount in irrigation
- N Ratio – Total N Available/Crop Need

Nitrogen Management Plans

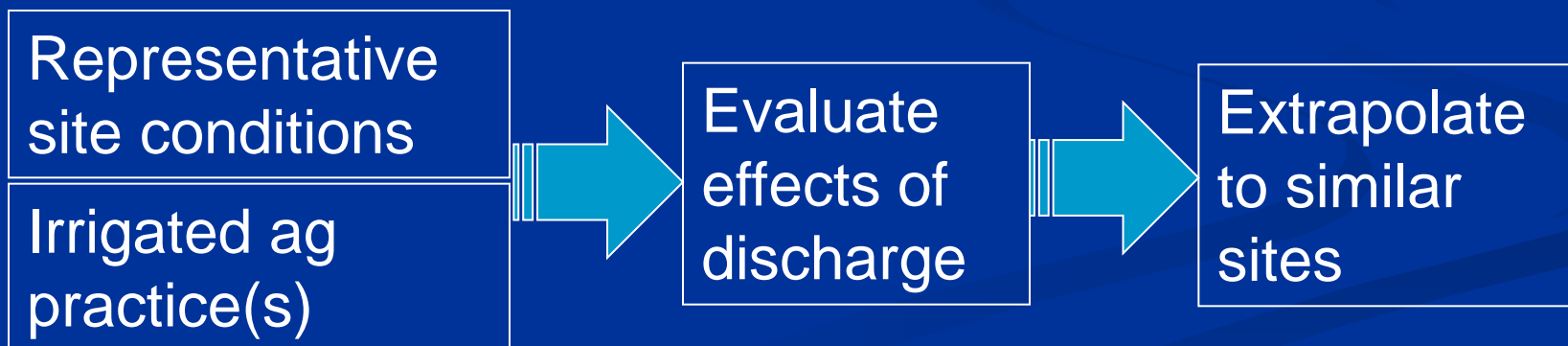
Timelines

- Templates from Third-party
 - 90 days after approval as third-party
- High Vulnerability Areas
 - Small Farming Operations (<60 acres)
 - 1 March 2016 – Nitrogen Management Plan
 - 1 March 2017 – N Management Plan Summary Report
 - Other Farming Operations (=> 60 acres)
 - 1 March 2014 – Nitrogen Management Plan
 - 1 March 2015 – N Management Plan Summary Report

Management Practices Evaluation Program

Evaluate whether specific practices are protective of groundwater quality under various site conditions (third-party requirement)

- Required in high vulnerability areas
- Encourages coordinated approach w/all coalitions, commodity groups, others



What Will the Management Practices Evaluation Program Tell Us?

- For example....
 - Flood irrigation of Almonds on sandy soil
 - protective of groundwater, if nitrogen ratio $< 1.X$
 - Micro irrigation of Almonds on sandy soil
 - protective of groundwater, if nitrogen ration $< 1.Y$
- Will want to evaluate yield/quality

Member/Grower Requirements

Management Practices

- Implement management practices
 - Practices found protective through management practices evaluation program
 - Implement practices consistent with regional management plans
 - Meet performance standards and discharge limitations

Coalition/Third Party Requirements in WDR

- Assess surface and groundwater in region
- Compile nitrogen reports from members in high vulnerability areas
- Provide members information on management practices to protect surface/groundwater
 - Focus on growers who need to improve practices (e.g., high N ratio relative to similarly situated growers)

What's Next?

Implementation begins with the adoption of the Eastern San Joaquin River Watershed Order

Other geographic areas and rice should have Orders adopted within a year

What Does Everyone Want?

Clean Water!

Agricultural coalition approach can help meet that goal – Growers, Commodity Groups have been and **MUST** be actively engaged!

Water Board recognizes critical importance of agriculture in the Central Valley

Working together the progress made in surface water will occur in groundwater

Questions?

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