



STATE WATER RESOURCES CONTROL BOARD IRRIGATED LANDS REGULATORY PROGRAM

CALIFORNIA BIORESOURCES ALLIANCE ANNUAL SYMPOSIUM

JOHNNY GONZALES – NOVEMBER 2017





1 – North Coast Region

2 – San Francisco Bay Region

3 – Central Coast Region

4 – Los Angeles Region

5 – Central Valley Region

6 – Lahontan Region

7 – Colorado River Basin Region

8- Santa Ana Region

9 – San Diego Region

California Crops



North Coast

Eureka



Central Valley

South Lake Tahoe

Sacramento

Napa

San Francisco

San Francisco Bay



Monterey

Central Coast

San Luis Obispo

Lahontan



Santa Barbara

Los Angeles

Victorville

Colorado River

Los Angeles

Palm Springs

Malibu

Santa Ana

Laguna Hills

San Diego

San Diego



PESTICIDES IN SURFACE WATER IN CALIFORNIA

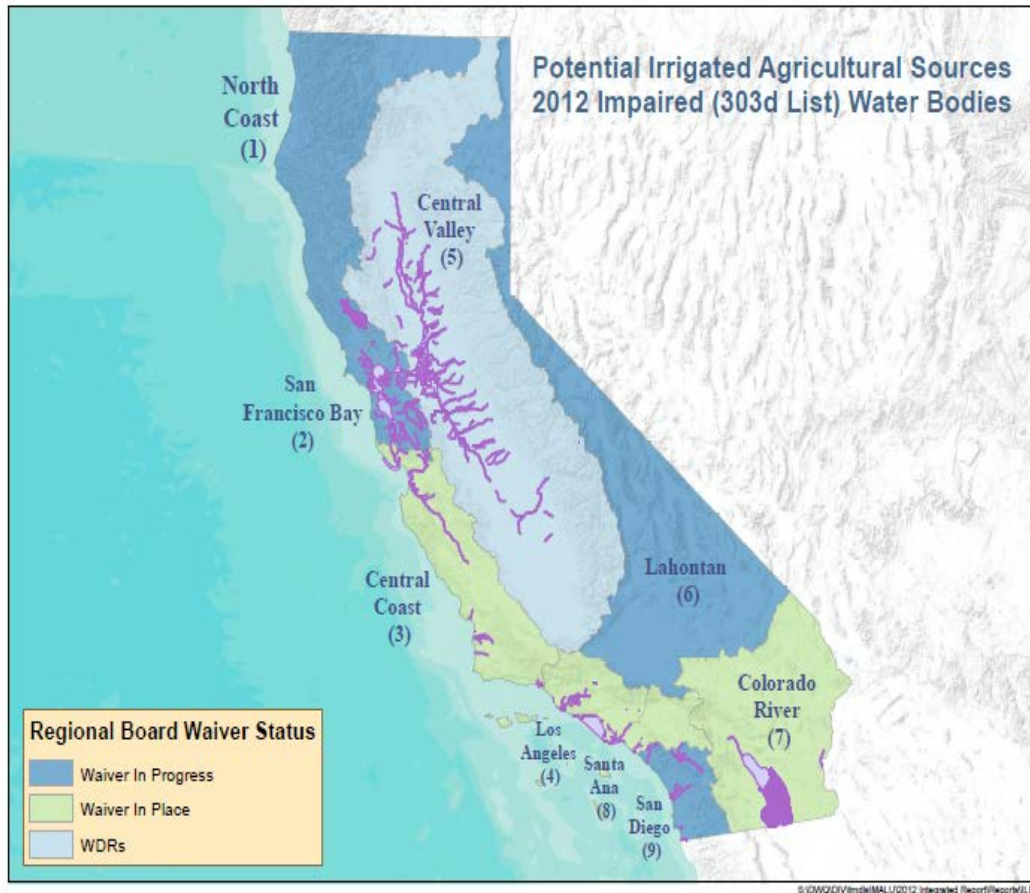
- CURRENT SURFACE WATER DATA > 100 DETECTED, > 20 EXCEEDING STANDARDS
 - IMPACTS AT LOW CONCENTRATIONS
- DOZENS OF WATERBODIES 303(D) LISTED
 - URBAN AND AGRICULTURAL SOURCES
- COMMON CAUSE OF TOXICITY STATEWIDE
- IMPACTS TO AQUATIC LIFE
 - POTENTIAL EFFECTS ON DELTA FISH
- DRINKING WATER CONCERNS

BASIN PLAN REQUIREMENTS RELATED TO PESTICIDES

- NO PESTICIDES IN WATER AT AMOUNTS THAT AFFECT BENEFICIAL USES
- PESTICIDES IN SEDIMENTS OR AQUATIC LIFE SHALL NOT AFFECT BENEFICIAL USES
- NO TOXIC SUBSTANCES IN TOXIC AMOUNTS
- SOME SPECIFIC NUMERIC OBJECTIVES & TMDLS
- IMPLEMENTATION AND MONITORING REQUIREMENTS

SCOPE OF IMPACT

IMPAIRED WATERS STATEWIDE

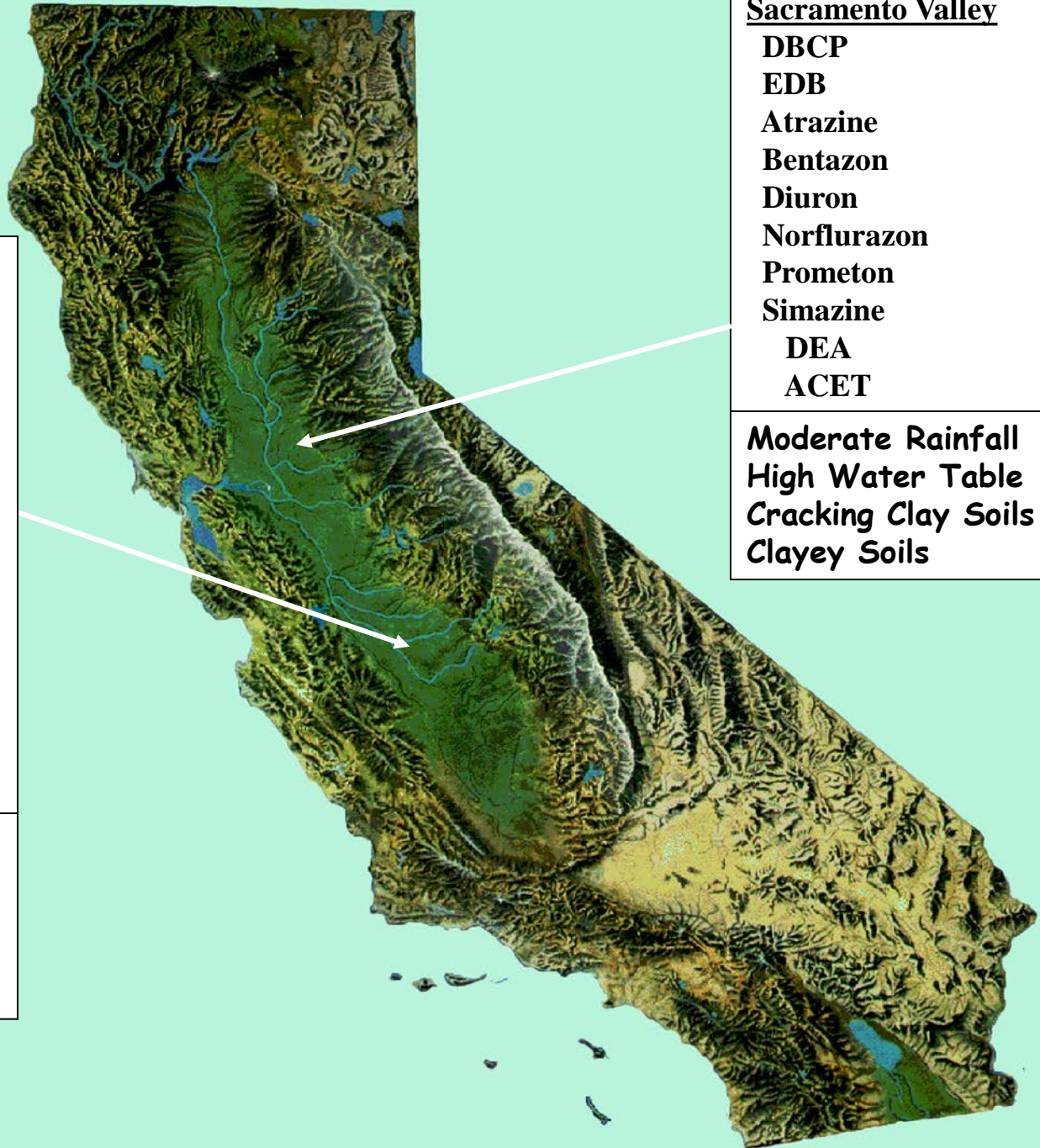


SURFACE WATER IMPACT OF PESTICIDE USE

PESTICIDE IMPAIRED WATERS
THAT ARE 303(D) LISTED:

- 4,582 MILES OF RIVERS, STREAMS AND COASTLINE
- 793,253 ACRES OF LAKES, RESERVOIRS, BAYS, ESTUARIES, OCEAN AND WETLANDS
- THESE IMPAIRMENTS ARE LARGELY DUE TO AGRICULTURAL SOURCES, BUT ALSO MAY BE FROM URBAN RUNOFF





San Joaquin Valley
DBCP
1,2-D
EDB
TPA
Atrazine
Bentazon
Bromacil
Diuron
Norflurazon
Prometon
Simazine
DEA
ACET
DACT

Low Rainfall
Coarse Soils
Hardpan Soils
Clayey soils
High Water Table

Sacramento Valley
DBCP
EDB
Atrazine
Bentazon
Diuron
Norflurazon
Prometon
Simazine
DEA
ACET

Moderate Rainfall
High Water Table
Cracking Clay Soils
Clayey Soils

Strategy to Address Impacts

Statewide Regulatory Program to Control Agricultural Pesticide Use



- STATE REGIONAL BOARDS ARE DEVELOPING OR IMPLEMENTING AGRICULTURAL REGULATORY PROGRAMS (IRLP).
- STATE WATER BOARD ACTIVITIES TO ADDRESS PESTICIDE IMPAIRMENT INCLUDE:
 - MULTI-AGENCY AGREEMENT WITH DEPARTMENT OF PESTICIDE REGULATION (DPR)
 - REVIEW DPR PESTICIDE STUDIES AND RE-EVALUATIONS.
 - PROMOTE DPR INTERFACE WITH ILRP.
 - INTERFACE WITH COUNTY AGRICULTURE COMMISSIONERS TO ADDRESS PESTICIDE ISSUES
 - DPR PESTICIDE REVIEW AND EVALUATION COMMITTEE
 - CALIFORNIA ASSOCIATION OF PEST CONTROL ADVISERS/CERTIFIED CROP ADVISERS (CAPCA/CCA) BOARD OF DIRECTORS



FERTILIZERS AND SOIL AMENDMENTS

Land Application or Disposal?

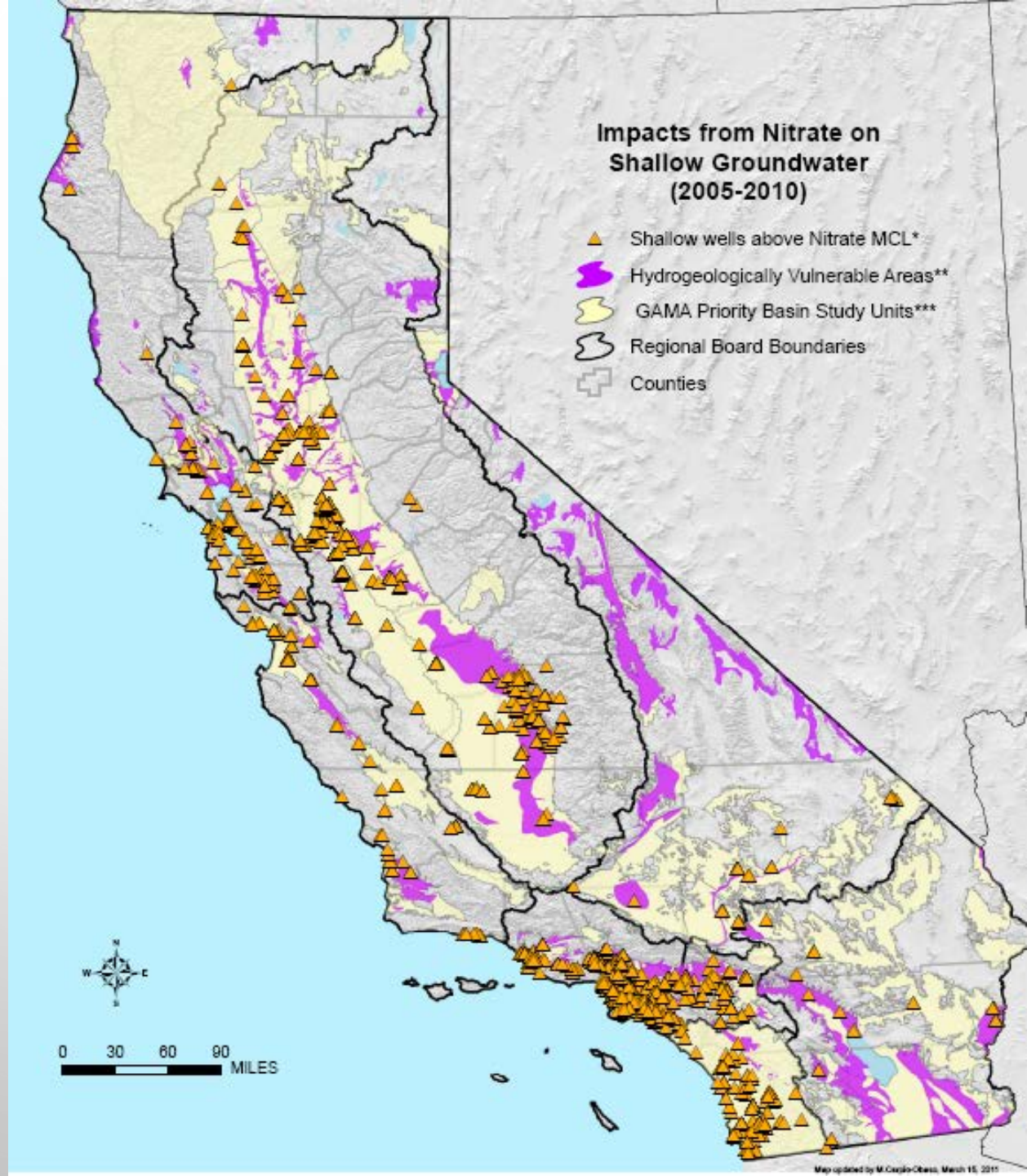


Contamination



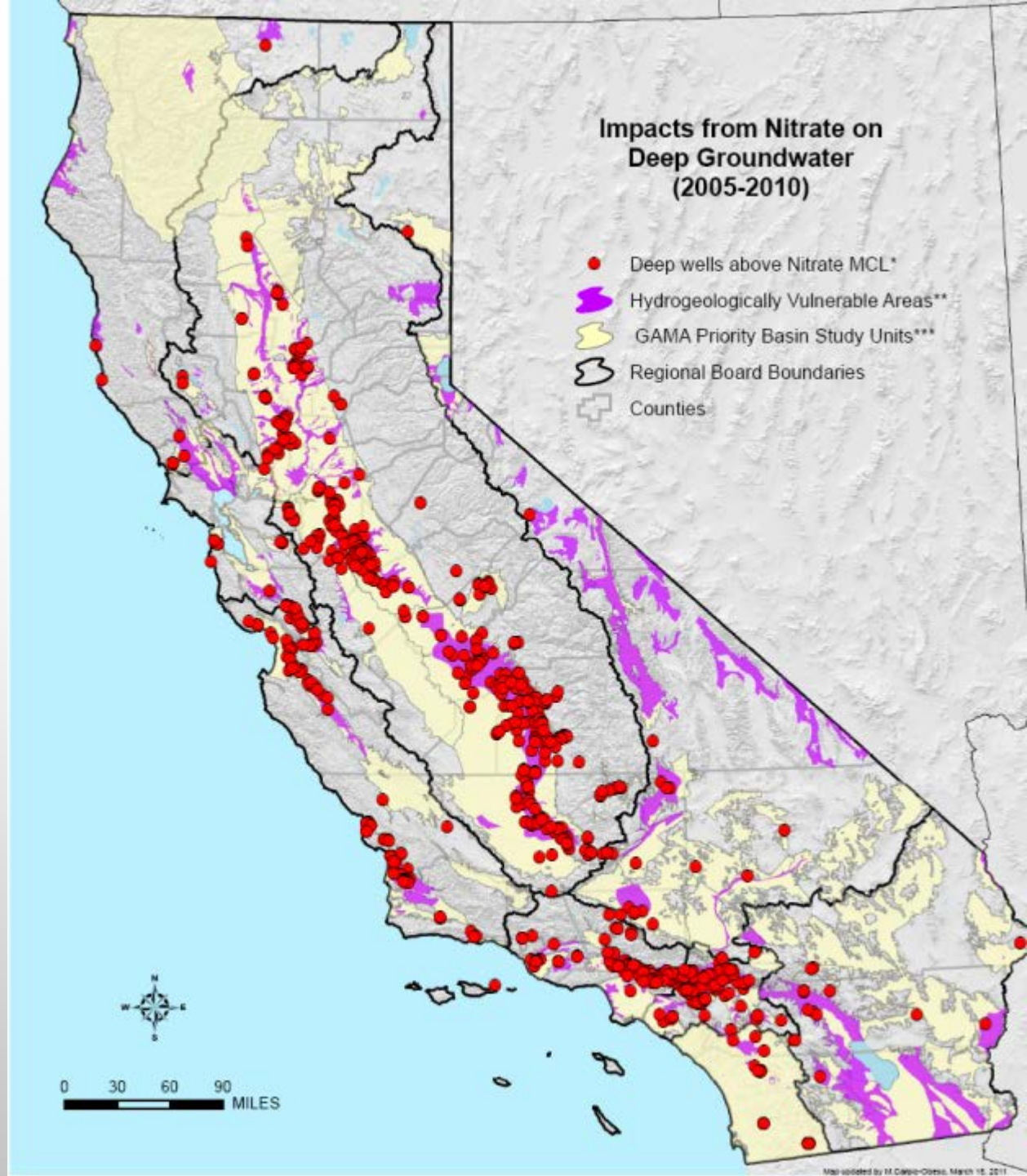
Hydrogeologically Vulnerable Areas and GAMA Priority Basins

Nitrate above MCL in Shallow Wells



HYDROGEOLOGICALLY VULNERABLE AREAS AND GAMA PRIORITY BASINS

NITRATE ABOVE MCL IN PUBLIC SUPPLY WELLS



IRRIGATED LANDS REGULATORY PROGRAM

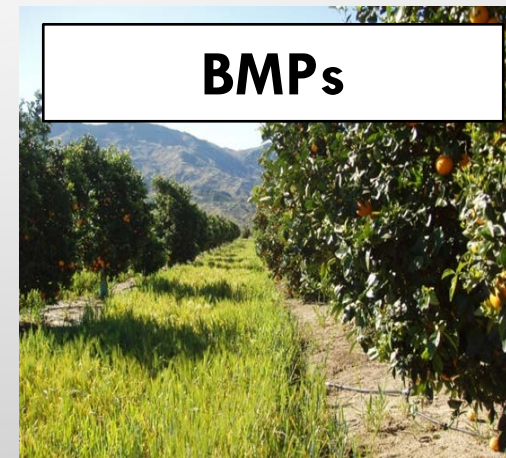
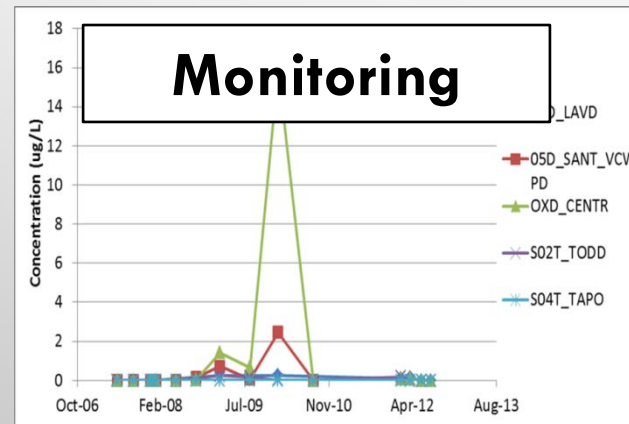
ISSUE

- MANY SURFACE WATER BODIES IN CALIFORNIA ARE LISTED ON THE FEDERAL CLEAN WATER ACT SECTION 303(D) LIST AS BEING IMPAIRED BY AGRICULTURAL SOURCES.

OBJECTIVE

- TO MONITOR, ASSESS, AND CONTROL THE IMPACT TO RECEIVING WATERS CAUSED BY DISCHARGES FROM IRRIGATED AGRICULTURAL LANDS.
- IMPROVE WQ BY REQUIRING AND ASSISTING GROWERS TO DEVELOP AND IMPLEMENT MANAGEMENT PLANS AND PRACTICES

IRRIGATED LANDS REGULATORY PROGRAM

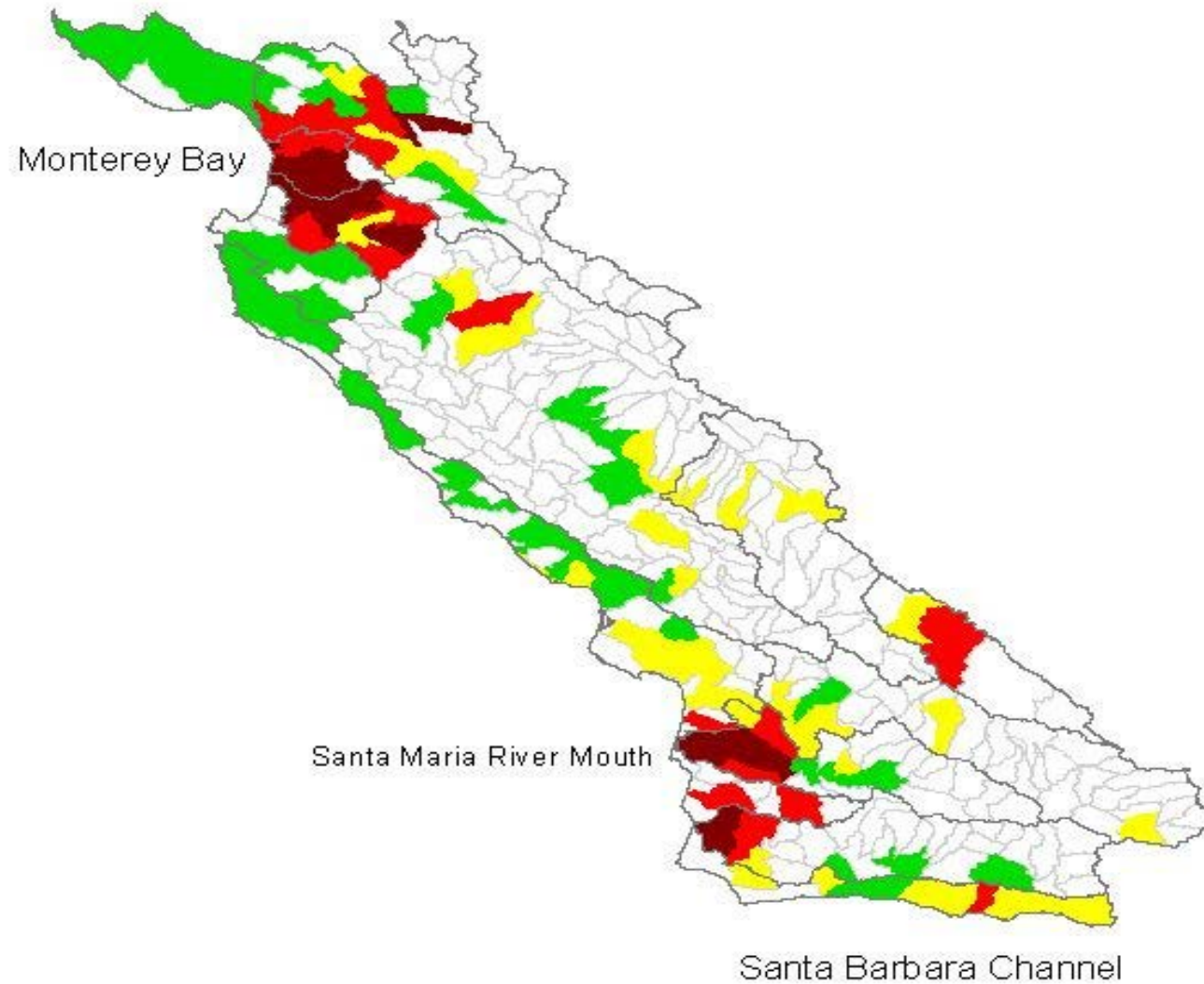


****Coalition groups are key to implementation***

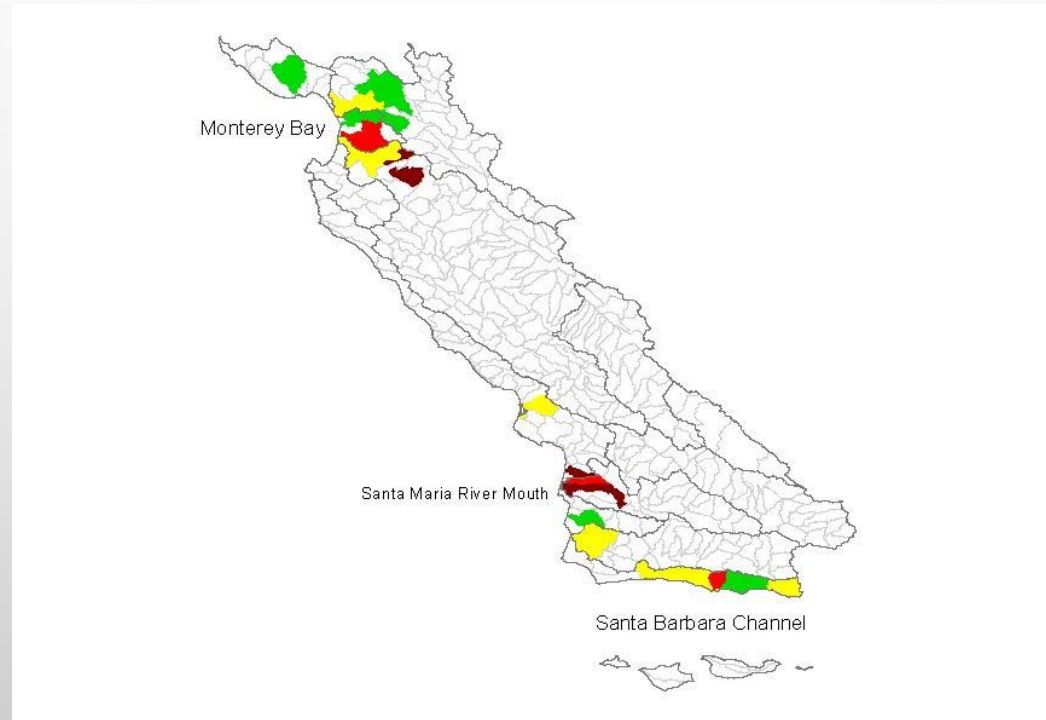
CENTRAL COAST WATER QUALITY IMPACTS (ASSOCIATED WITH AGRICULTURAL AREAS)

- HIGH NITRATE CONCENTRATIONS
 - (SURFACE AND GROUNDWATER)
- WIDESPREAD PESTICIDE TOXICITY

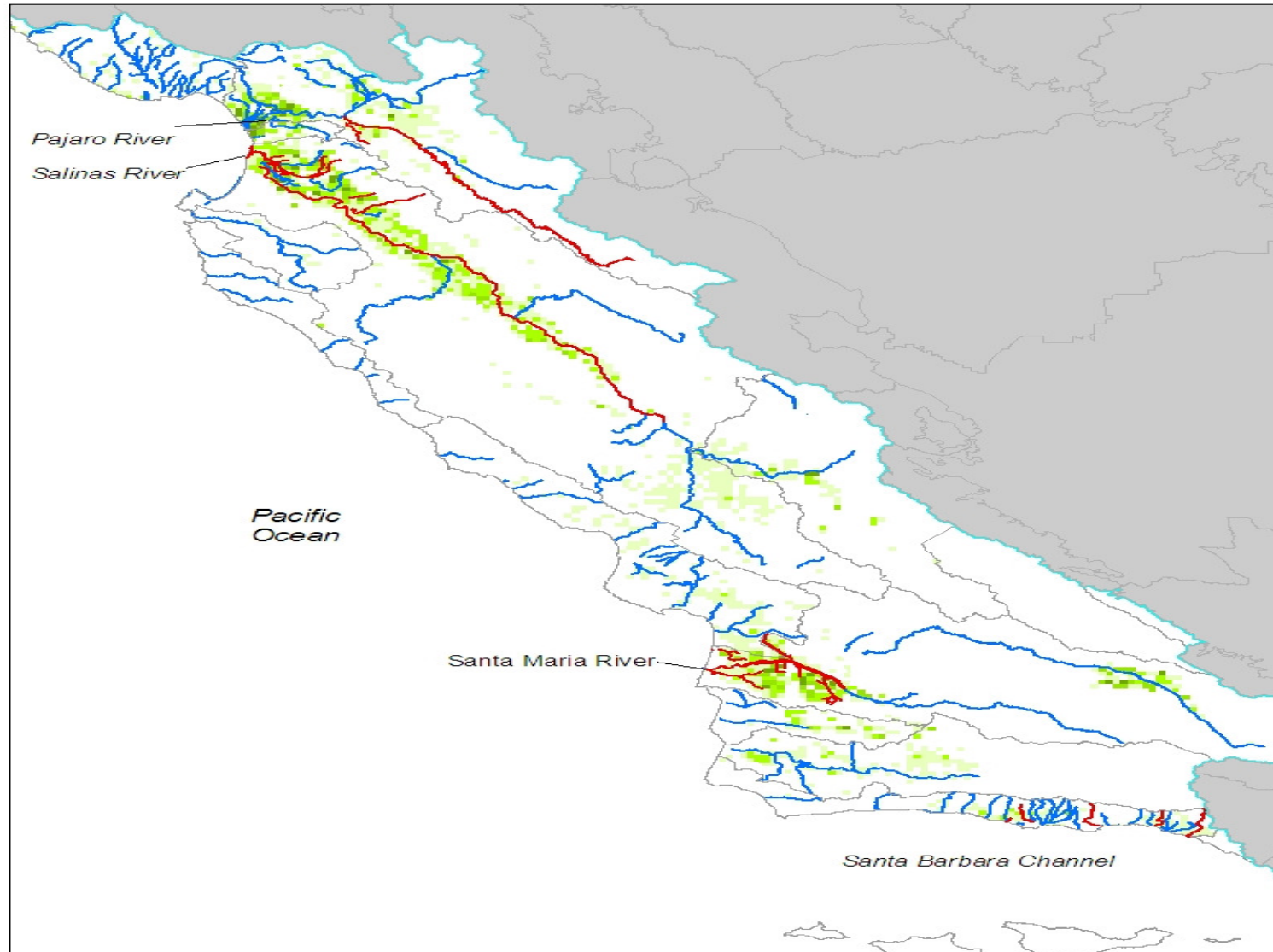
CENTRAL COAST SURFACE WATER IMPACTS



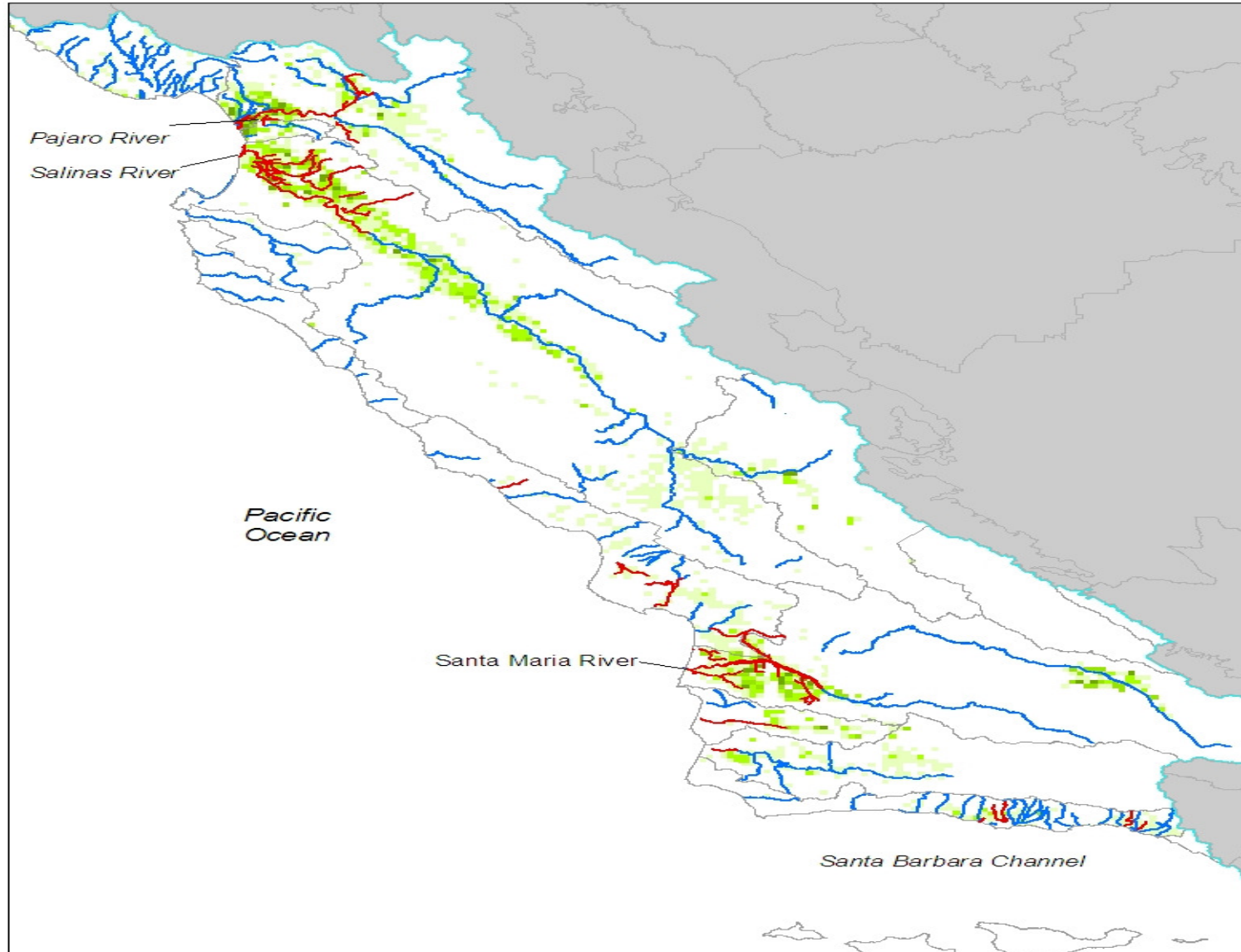
CENTRAL COAST - TOXICITY



CENTRAL COAST PESTICIDE IMPAIRED WATERBODIES

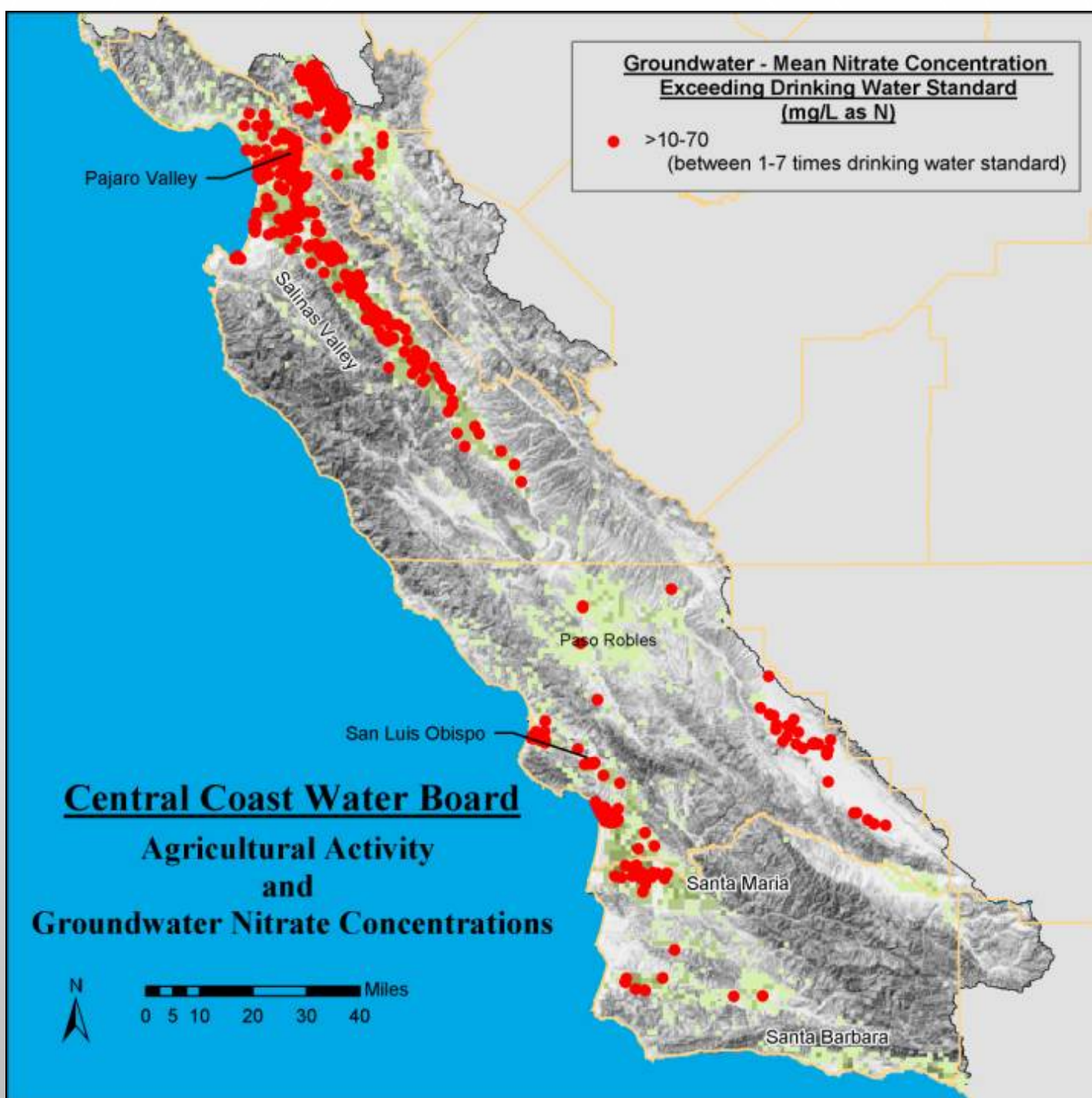


CENTRAL COAST - NITRATE



CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARD

- Central Coast agriculture depends on groundwater for irrigation
- 83% of the region water supply comes from groundwater
- Nearly 100% of domestic water supply in rural areas



CENTRAL COAST WATER BOARD SOLUTIONS TO THE NITRATE PROBLEM

- BASED ON THREE-PRONGED STRATEGY CONSISTING OF:
 1. INFORMING AND PROTECTING WATER USERS FROM KNOWN PUBLIC HEALTH THREATS DUE TO NITRATE POLLUTION,
 2. IMPLEMENTING SOURCE CONTROL TO REDUCE NITRATE LOADING OVER TIME, AND
 3. SUPPORTING ONGOING MONITORING AND ASSESSMENT TO DOCUMENT MEASURABLE IMPROVEMENTS IN SOURCE REDUCTION AND GROUNDWATER AND DRINKING WATER QUALITY.

WATER BOARD GOALS GIVEN THE GROUNDWATER PROBLEMS

- Reduce Nitrogen loading to groundwater
- Reduce excessive application of N fertilizers
- Protect drinking water sources

AGRICULTURAL ORDER 3 TIERS - CRITERIA

- Crops known to have higher nitrate loading impacts
- Size of farm operation
- Chemicals known to cause pollution
- Drains to toxic or pesticide impaired waterbody
- Proximity to an impaired waterbody or public water drinking well

TIERS AND CRITERIA

BASED ON RELATIVE RISK TO WATER QUALITY AND DISCHARGE

TIER 1 (LOWER RISK)

- NO CHLORPYRIFOS OR DIAZINON APPLIED,
- NO IMPAIRED SURFACE WATER, AND
- IF NITROGEN LOADING CROP, MUST BE LESS THAN 50 ACRES AND NOT NEAR IMPACTED PUBLIC DRINKING WATER WELL.
- OR CERTIFIED SUSTAINABLE-IN-PRACTICE (SIP).

TIER 2

- CHLORPYRIFOS OR DIAZINON APPLIED,
- IMPAIRED SURFACE WATER, OR
- IF NITROGEN LOADING CROP AND BETWEEN 50-500 ACRES OR NEAR IMPACTED PUBLIC DRINKING WATER WELL.

TIER 3 (HIGHER RISK)

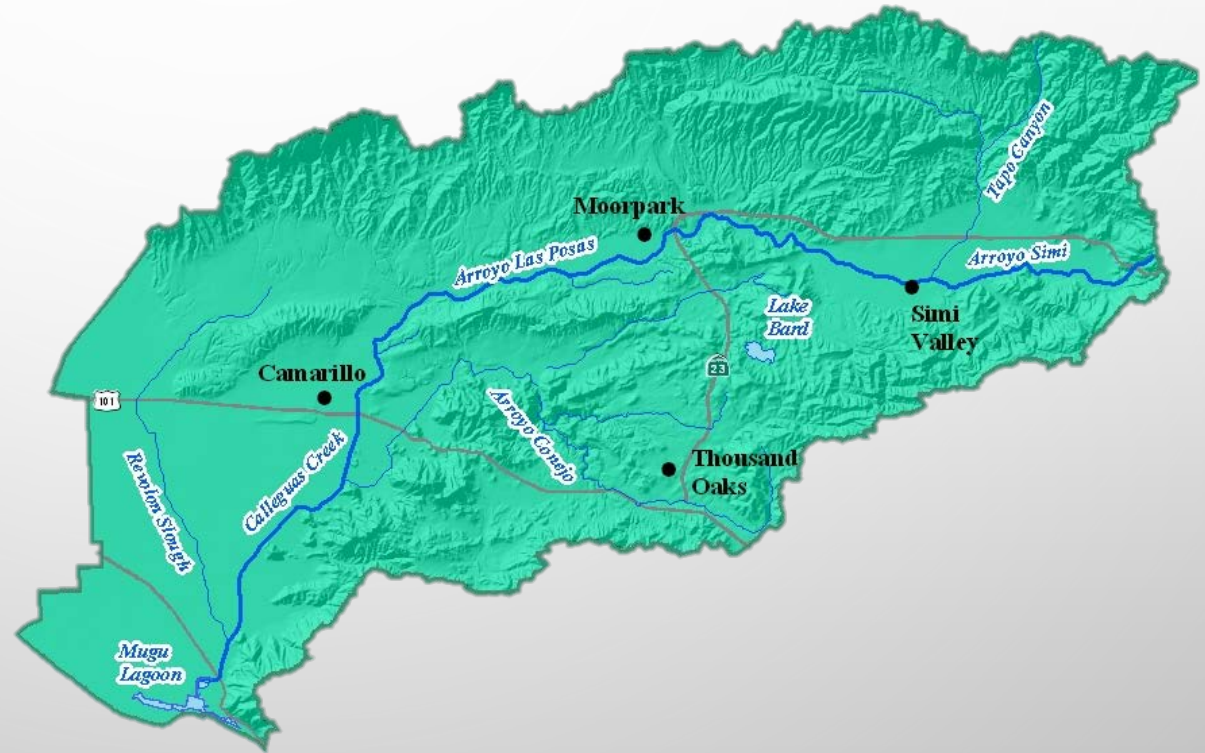
- CHLORPYRIFOS OR DIAZINON APPLIED, AND DISCHARGE TO IMPAIRED SURFACE WATER; OR
- IF NITROGEN LOADING CROP AND GREATER THAN OR EQUAL TO 500 ACRES.

WATER BOARD EVALUATION

- Growers must demonstrate progress to reduce loading
- Evaluate what they are doing and make improvements if needed
- Fine tune their fertilizer application decisions. Are applications reasonable given the existing information (Crop N uptake, removal in literature)

LOS ANGELES REGIONAL WATER QUALITY BOARD

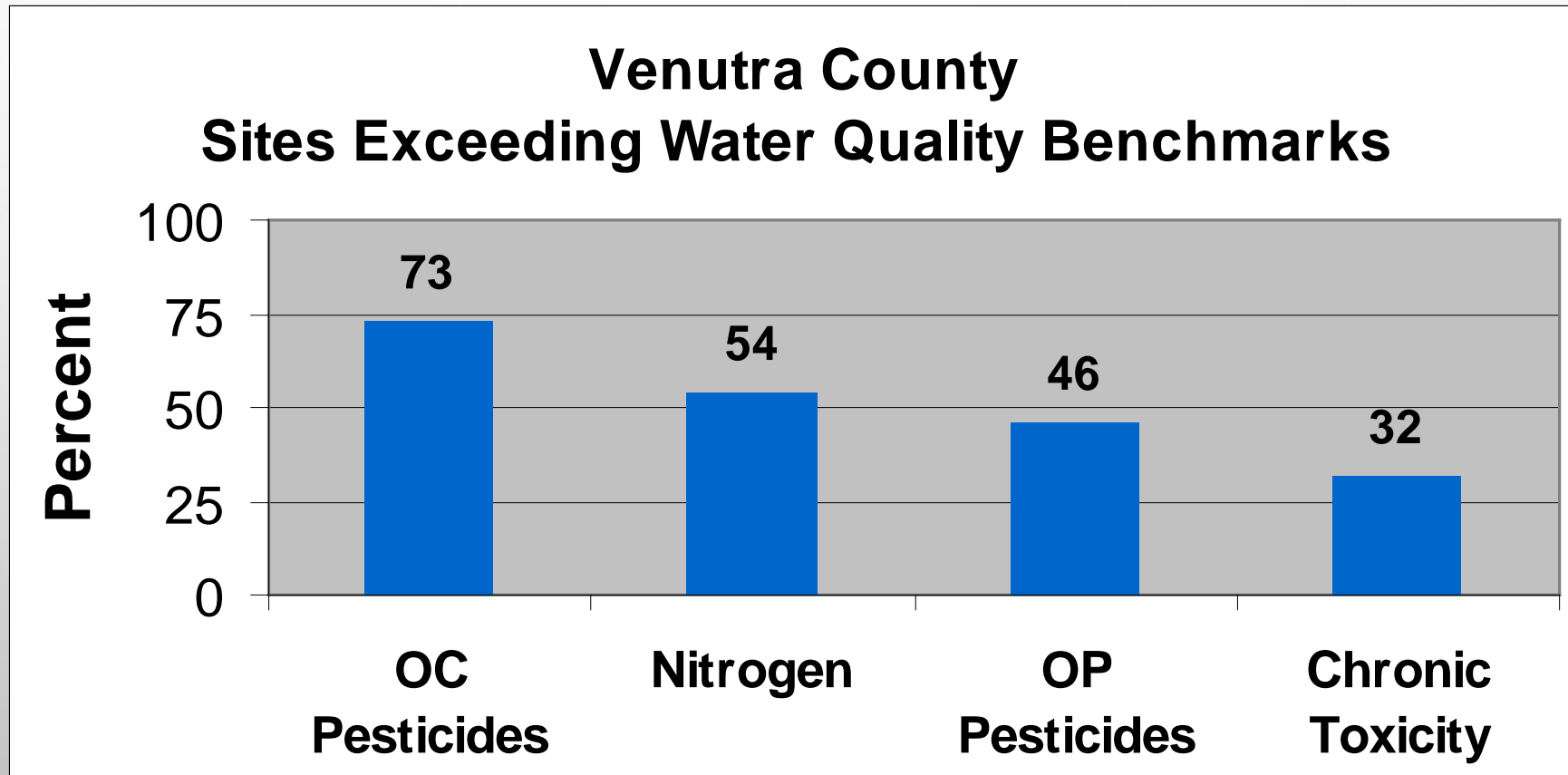
- LOCATED IN VENTURA COUNTY
- IMPAIRED WATERSHED
 - ALL REACHES IMPAIRED
 - NEARLY 30 POLLUTANTS
 - 7 TMDLS



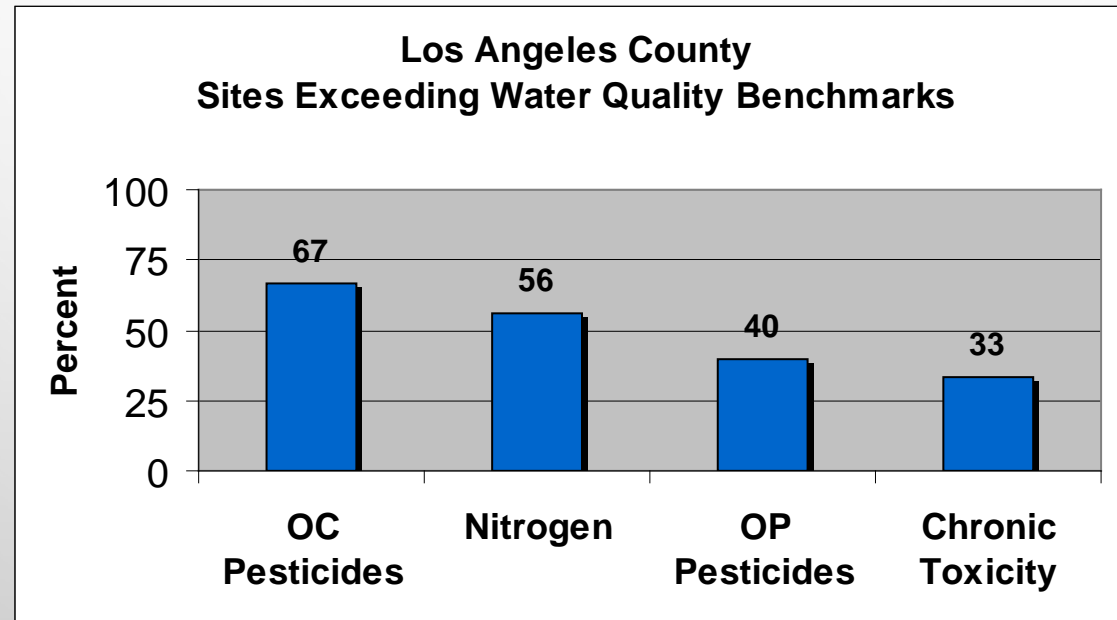
LA REGION – WATER QUALITY MONITORING

- **MONITORING SITES**
 - **VENTURA COUNTY – 21 SITES**
 - **LOS ANGELES COUNTY – 16 SITES**
- **CONSTITUENTS MONITORED**
 - **PESTICIDES**
 - **NUTRIENTS**
 - **SALTS**
 - **TOXICITY**
- **MONITORING RESULTS COMPARED TO WATER QUALITY BENCHMARKS IN CONDITIONAL WAIVER**

WATER QUALITY MONITORING - RESULTS



WATER QUALITY MONITORING - RESULTS



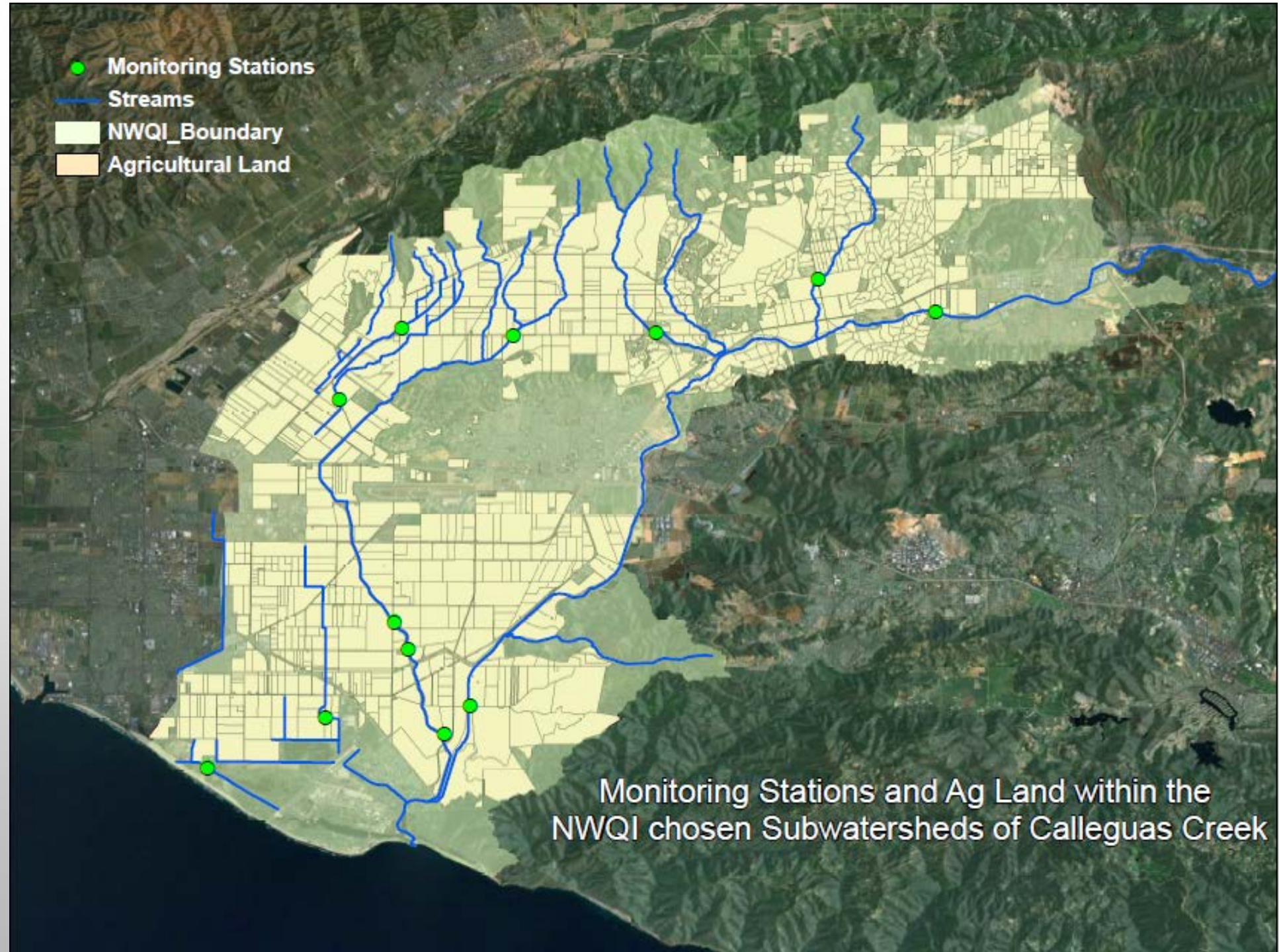
BMP IMPLEMENTATION

- **MONITORING RESULTS TRIGGER BMP IMPLEMENTATION**
- **PRIORITIZED BMP IMPLEMENTATION**
 - **DRAINAGE AREAS WITH MULTIPLE EXCEEDANCES**
 - **DRAINAGE AREAS WITH TMDLS**
- **BMPS INSTALLED IN PRIORITY AREAS - 2009 & 2010**
- **2010 MONITORING REPORTS EXPECTED TO DEMONSTRATE BMP EFFECTIVENESS**

IRRIGATED LANDS REGULATORY PROGRAM

- CONDITIONAL WAIVER FOR IRRIGATED AGRICULTURAL LANDS
- VENTURA COUNTY AGRICULTURAL IRRIGATED LANDS GROUP (VCAILG) – ASSOCIATION OF GROWERS COMPLYING WITH THE ILRP
 - REPRESENT NEARLY 90% OF THE GROWERS IN THE CALLEGUAS CREEK WATERSHED
- MONITORING IN CALLEGUAS CREEK – 5 YEARS OF DATA

- Monitoring Stations
- Streams
- NWQI_Boundary
- Agricultural Land



Monitoring Stations and Ag Land within the NWQI chosen Subwatersheds of Calleguas Creek

COORDINATION WITH AGENCIES AND INFORMING GROWERS

- CLOSE COLLABORATION BETWEEN NRCS STAFF AND REGIONAL BOARD
- CULTIVATED A RELATIONSHIP BETWEEN NRCS, VCAILG, AND THE VENTURA COUNTY RCD
- VCAILG SPREAD THE WORD
- BMP TOUR AND NETWORKING



The following information is provided as a service to VCAILG members.

Funds available for water-quality projects

Applications are being accepted for \$2.5 million made available to Ventura County growers this year through a federal incentive program to improve water quality.

The funding is provided through the Environmental Quality Incentives Program (EQIP), administered by the Natural Resources Conservation Service (NRCS). EQIP is a voluntary program to promote agricultural production and environmental quality. The \$2.5 million in new assistance can be used for improvements in irrigation systems and nutrient management (such as moisture sensors, irrigation upgrades and nutrient analysis) as well as traditional erosion-control projects.

The payments are limited to \$300,000 per person through 2014. Farmers will be reimbursed by direct deposit to a bank account of their choice for 50 percent to 90 percent of actual project costs. Disadvantaged farmers can receive an advance of up to 30 percent.

All VCAILG members who are considering irrigation or nutrient-management improvements in the near future are encouraged to download and submit the three-page [application](#) (consisting of 12 yes/no questions) before June 15 to be considered for this year's funding. Field visits by NRCS staff will help determine the specific projects chosen for assistance.

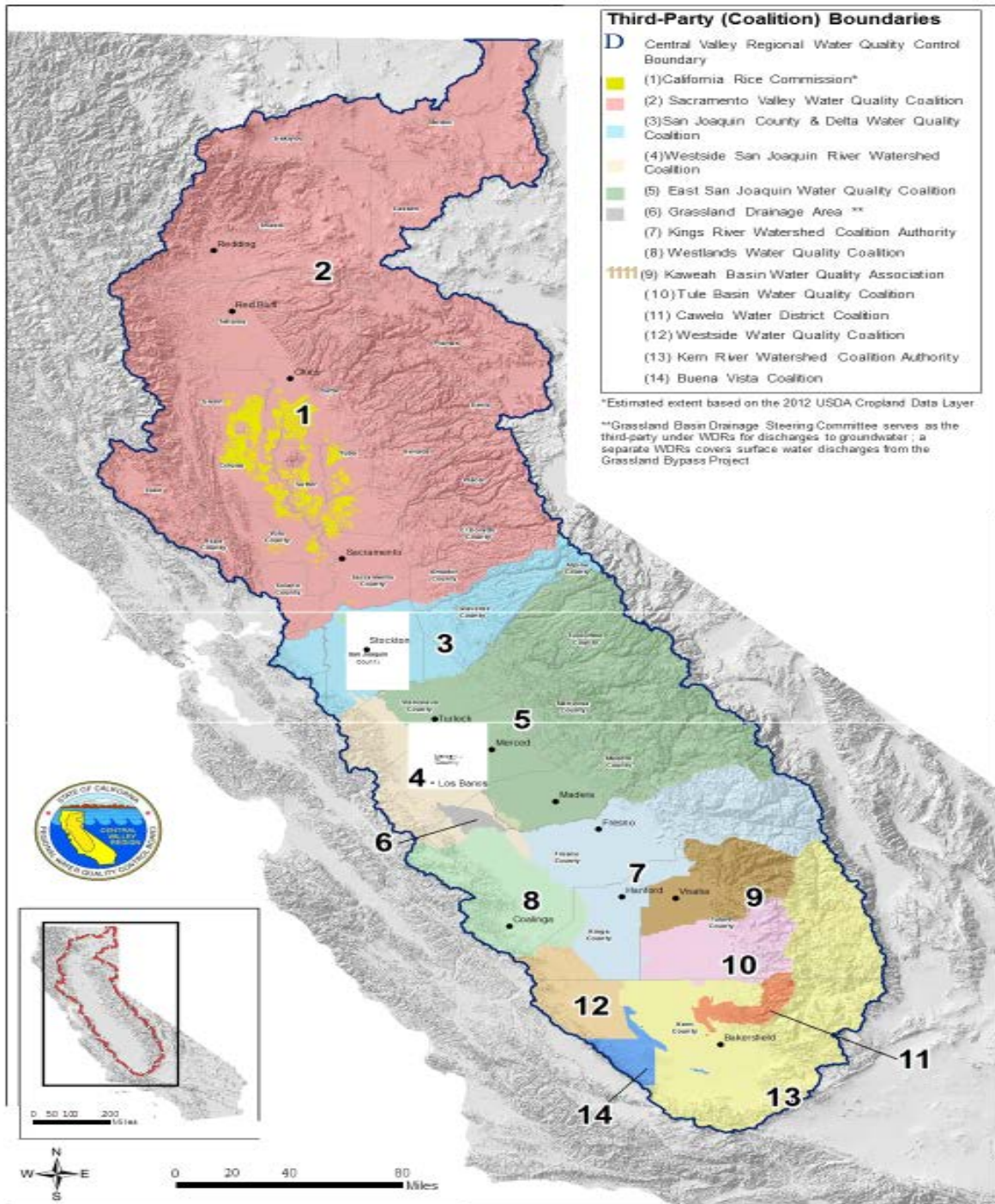
Implementation of Best Management Practices to address water-quality impacts from irrigation tailwater and storm runoff is a key requirement of the Conditional Waiver, which regulates agricultural discharges in Ventura County. The EQIP funding provides VCAILG members a cost-effective means of taking important steps to demonstrate commitment to improving water quality and complying with the waiver. Growers with operations in the Calleguas Creek watershed will be

CONCLUSIONS

- CLOSER COLLABORATION DEVELOPED BETWEEN
 - EPA
 - VCAILG
 - LOCAL NRCS OFFICE
 - FARM BUREAU
 - STATE BOARD
 - REGIONAL BOARD STAFF
 - RCD
- CONCENTRATED MONEY/EFFORT IN A WATERSHED WITH SEVERE WATER QUALITY IMPAIRMENTS
- NWQI ASSISTANCE ESSENTIAL IN ACHIEVING ILRP GOALS
- WATER QUALITY IMPROVEMENTS WILL BE DEMONSTRATED THROUGH MONITORING DATA

CENTRAL VALLEY ILRP OVERVIEW

- 35,000 IRRIGATED AGRICULTURAL OPERATIONS 7 MILLION ACRES OF LAND
- ILRP REGULATES WASTE DISCHARGES FROM IRRIGATED LANDS USING SEVEN [GEOGRAPHIC](#) AND ONE [COMMODITY-SPECIFIC](#) GENERAL ORDERS FOR GROWERS THAT ARE PART OF A THIRD-PARTY GROUP (COALITIONS)
- [14 COALITIONS](#) HELPING GROWERS COMPLY WITH THE GENERAL ORDERS AND ARE WORKING WITH GROWERS AT SLIGHTLY DIFFERENT STAGES OF IMPLEMENTATION.
- THERE IS ALSO A GENERAL ORDER FOR GROWERS WHO CHOOSE TO BE REGULATED [INDIVIDUALLY](#).
- ILRP CONSISTS OF 0.7 PY (REDDING), 6.8 PY (FRESNO) AND 11.2 PY (SACRAMENTO) FOR A TOTAL OF 18.7 PYS FOR THE REGION.



LESSONS LEARNED....

- **WATER QUALITY CONCERNS AT SOME ILRP MONITORING SITES**
- **LESS TOXICITY TO MINNOW AND SEDIMENT IN ZONE 1**
- **TYPE OF TOXICITY IMPLICATES INSECTICIDES**
- **UNANTICIPATED WIDESPREAD TOXICITY TO ALGAE**
- **OP PESTICIDES COMMON**

LESSONS LEARNED....

- **SEDIMENT TOXICITY AROUND 30%**
- **SOME PREDOMINANT PESTICIDE DETECTIONS**
 - **OP PESTICIDES**
 - **SIMAZINE AND DIURON**
 - **DDT AND BREAKDOWN PRODUCTS**
- **OTHER COMMON EXCEEDANCES**
 - **SALINITY**
 - **PATHOGENS**
 - **PH AND DO**

CENTRAL VALLEY WATER BOARD SOLUTIONS TO THE NITRATE PROBLEM

- COMPREHENSIVE PLAN SINCE 2006 TO ADDRESS NITRATE CONTAMINATION IN GROUNDWATER
- PLANS TO ADDRESS NITRATE PROBLEM BASED ON A FOUR-PRONGED STRATEGY CONSISTING OF:
 1. IRRIGATED LANDS REGULATORY PROGRAM,
 2. BASIN-WIDE SALINITY AND NITRATE MANAGEMENT PROGRAM,
 3. GROUNDWATER QUALITY PROTECTION STRATEGY, AND
 4. DAIRY PROGRAMS WASTE DISCHARGE REQUIREMENTS.

ILRP GOALS

- PREVENT DISCHARGES FROM IRRIGATED LANDS FROM CAUSING OR CONTRIBUTING TO EXCEEDANCES OF WATER QUALITY OBJECTIVES
 - THROUGH ORDER IMPLEMENTATION,
 - APPROPRIATE COMPLIANCE AND ENFORCEMENT, AND
 - COORDINATION WITH ALL INTERESTED PARTIES.
- PRESERVING BOTH THE HUMAN RIGHT TO SAFE, CLEAN, AFFORDABLE, AND ACCESSIBLE WATER, AND A HEALTHY AND SUSTAINABLE IRRIGATED AGRICULTURE.
- ORDER IMPLEMENTATION INCLUDES OVERSIGHT OF COALITION AND GROWER ACTIVITIES AND MANAGEMENT OF WATER QUALITY DATA.
- COMPLIANCE AND ENFORCEMENT ACTIVITIES INCLUDE MAXIMIZING GROWER ENROLLMENT AND ORDER COMPLIANCE.
- COORDINATION IS FACILITATED THROUGH REGULAR STAKEHOLDER MEETINGS AND OTHER VENUES.

PERFORMANCE TARGETS FOR FY 2016-17

TARGET

- GROUNDWATER QUALITY MANAGEMENT PLAN REVIEWS 14
- ANNUAL REPORT REVIEWS 13
- MANAGEMENT PRACTICE EVALUATION PLAN REVIEWS 2
- ISSUE PESTICIDE EVALUATION PROTOCOL 1
- NON-ENROLLMENT INSPECTIONS 2000
- ON-FARM INSPECTIONS STAKEHOLDER MEETINGS 115
- DRAFT SURFACE WATER QUALITY STATUS AND TREND REPORT 1
- ACTIVELY PARTICIPATE IN STATE WATER BOARD PETITION PROCESS 1

MAJOR ACCOMPLISHMENTS

ADOPTION OF ALL ILRP GENERAL ORDERS

- INITIATED IN 2003 WITH ADOPTION OF A CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS (WDRS) FOR DISCHARGES FROM IRRIGATED LANDS TO SURFACE WATERS.
- RECENT ADOPTION OF GENERAL ORDER WDRS INCLUDES REGULATION OF WASTE DISCHARGES TO GROUNDWATER.
- INVOLVED SIGNIFICANT STAKEHOLDER PARTICIPATION AND DEVELOPMENT OF A PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT. THE PROGRAM CONTINUES TO MAINTAIN A VERY HIGH LEVEL OF STAKEHOLDER INPUT.

SURFACE WATER SUCCESSES

- *MANAGEMENT PLAN COMPLETIONS* – REQUIRES GROWERS TO IMPLEMENT IMPROVED PRACTICES TO ELIMINATE IDENTIFIED WATER QUALITY PROBLEMS CAUSED BY AGRICULTURAL POLLUTANTS.
- HAS RESULTED IN SUCCESSFUL COMPLETION OF ~160 MANAGEMENT PLANS FOR PESTICIDES, AQUATIC TOXICITY, SEDIMENT TOXICITY, TRACE METALS, LEGACY PESTICIDES, AND OTHER PARAMETERS.
- *DELISTING OF CWA SECTION 303(D) IMPAIRED WATERS* – ILRP MANAGEMENT PLAN COMPLETIONS CONTRIBUTED SIGNIFICANTLY TO DE-LISTINGS OF DIAZINON IN REACHES OF THE SAN JOAQUIN, FEATHER AND SACRAMENTO RIVERS.
- ADDITIONAL DELISTINGS OF DIAZINON, CHLORPYRIFOS, AND DIURON WILL BE PURSUED BASED PREDOMINANTLY ON ILRP MANAGEMENT PLAN EFFORTS.

MAJOR ACCOMPLISHMENTS

COMPLIANCE AND ENFORCEMENT SUCCESSES

- INCREASED ENROLLMENT ACREAGE – WITH CURRENTLY 5.6 MILLION ACRES ENROLLED IN THE ILRP, ENROLLMENT OF IRRIGATED LANDS HAS INCREASED ABOUT A MILLION ACRES SINCE THE ADOPTION OF THE NEW GENERAL ORDERS. ILRP STAFF AND COALITION EFFORTS TO ENROLL THE REMAINING IRRIGATED ACREAGE (ESTIMATED AT ABOUT 1.4 MILLION ACRES) ARE ONGOING.
- ENFORCEMENT COORDINATION WITH COALITIONS – ILRP STAFF SUCCESSFULLY USED “LAST CHANCE” PHONE CALLS AND COORDINATION WITH COALITIONS TO BRING SEVERAL GROWERS INTO COMPLIANCE (EITHER WITH THE REQUIREMENT TO OBTAIN REGULATORY COVERAGE OR TO SUBMIT A FARM EVALUATION) BEFORE FORMAL ENFORCEMENT WAS INITIATED.

DEVELOPMENT OF GROUNDWATER PROTECTION STRATEGY

- THE ILRP RELIES ON GROWER IMPLEMENTATION OF MANAGEMENT PRACTICES TO PROTECT GROUNDWATER QUALITY. THE COALITIONS IDENTIFY PRACTICES THAT ARE PROTECTIVE OF GROUNDWATER QUALITY WITH HELP FROM SCIENTISTS AND OUTSIDE EXPERTS USING FIELD LEVEL DATA FROM GROWERS, FIELD STUDIES AND MODELING.

ONGOING ISSUES

- MORE FOCUSED OUTREACH TO SMALL GROWER OPERATIONS, ESPECIALLY THOSE WITH NON-ENGLISH SPEAKING OPERATORS, IS NEEDED FOR COMPREHENSIVE IMPLEMENTATION OF THE PROGRAM.
- PROGRAM MUST PROVIDE TRANSPARENCY AND FLEXIBILITY TO EVOLVE WITH BEST AVAILABLE SCIENCE IN PROTECTING WATER QUALITY.

STATEWIDE ILRP MULTI-AGENCY APPROACH

- NATURAL RESOURCE CONSERVATION SERVICE
- RESOURCE CONSERVATION DISTRICTS
- UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION
- COUNTY AGRICULTURAL COMMISSIONERS
- DEPARTMENT OF PESTICIDES REGULATION
- CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURAL

ILRP MULTI-AGENCY TEAM CONCEPT

- THE MULTI-AGENCY TEAM CONCEPT APPROACH WOULD BE CHARGED WITH DEVELOPING SPECIFIC MPS AS DEMONSTRATION PROJECTS TO ADDRESS PRIORITIZED AREAS OF AGRICULTURAL RELATED WATER QUALITY IMPAIRMENT.
- THE MULTI-AGENCY TEAM SHOULD INCLUDE AGENCIES ASSOCIATED WITH THE POLLUTANTS OF CONCERN:
 - **PESTICIDES** – DEPARTMENT OF PESTICIDES REGULATION AND COUNTY AGRICULTURAL COMMISSIONERS;
 - **NUTRIENTS** – CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE AND COUNTY AGRICULTURAL COMMISSIONERS; FOR BMPS – RESOURCE CONSERVATION DISTRICTS, NATURAL RESOURCES CONSERVATION SERVICE, UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION, FARM BUREAU'S.

ILRP NEXT STEPS

- ONGOING ASSESSMENT OF MONITORING DATA
- COALITIONS TO DEVELOP MANAGEMENT PLANS TO ADDRESS IMPAIRED WATERS OF THE STATE
- PRIORITIZE WATER QUALITY IMPAIRED AREAS
 - ASSIST GROWERS TO DEVELOP AND IMPLEMENT MANAGEMENT PLANS TO ADDRESS PRIORITY IMPAIRED WATERS OF THE STATE
- FOLLOW-UP MONITORING TO ASSESS PERFORMANCE
- ADDRESS NON-FILERS

ADDITIONAL INFORMATION

- SWRCB AGRICULTURAL WEB PAGE

[HTTP://WWW.WATERBOARDS.CA.GOV/WATER_ISSUES/PROGRAMS/AGRICULTURE/](http://www.waterboards.ca.gov/water_issues/programs/agriculture/)

- ILRP MONTHLY REPORTS
- 303(D) LIST OF IMPAIRED WATER BODIES (AGRICULTURE)
- REGIONAL BOARD ILRP MONITORING REPORTS