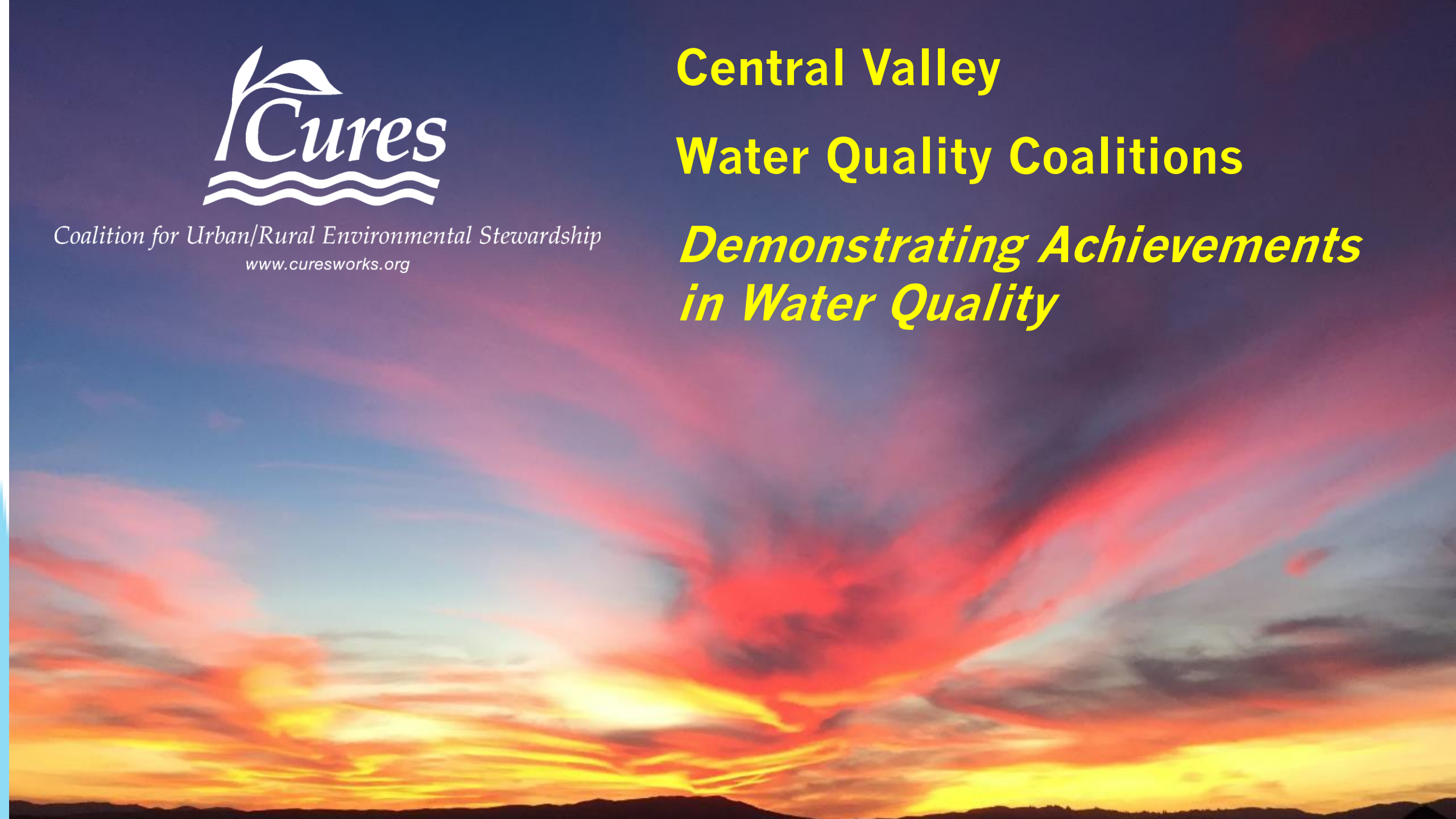

Cures
Coalition for Urban/Rural Environmental Stewardship
www.curesworks.org
Central Valley
Water Quality Coalitions
Demonstrating Achievements
in Water Quality

- Non-profit organization
- Founded 1997
  - 22th Anniversary
- Agricultural, Urban projects
- Promote stewardship, Best Management Practices (BMPs)
  - Pesticides
  - Nitrogen Fertilizers

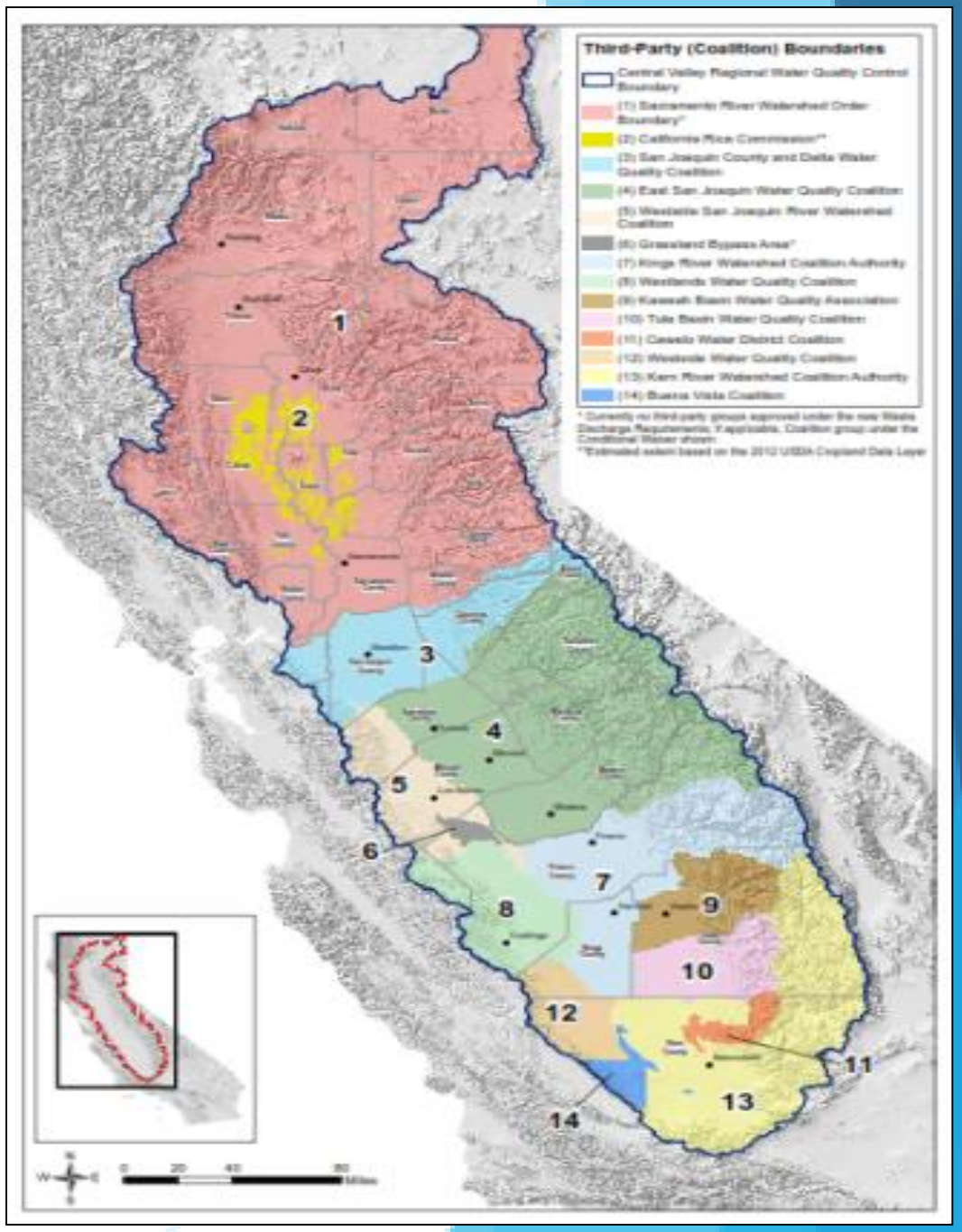
Board of Directors

- ❑ **Almond Board of California**
- ❑ **Western Growers Association**

- ❑ **Bayer Crop Science**
- ❑ **California League of Food Producers**
- ❑ **Corteva (Formerly Dow-DuPont)**
- ❑ **Ducks Unlimited**
- ❑ **Syngenta**
- ❑ **Western Plant Health Association**
- ❑ **Almond/walnut grower**

Central Valley Coalitions
Region 5

- Sacramento Valley Water Quality Coalition
  - Bruce Houdesheldt
- California Rice Commission
  - Tim Johnson
- San Joaquin County & Delta Water Quality Coalition
  - Michael Wackman
- Westside San Joaquin River Watershed Coalition
  - Joseph C. McGahan
  - David Cory
- East San Joaquin Water Quality Coalition
  - Parry Klassen
  - Wayne Zipser
- Westlands Coalition
- Southern San Joaquin Valley Water Quality Coalition
  - 7 watershed coalitions under one umbrella organization for policy issues



East San Joaquin Water Quality Coalition

- In operation since 2003
  - **16 years!**
- 3,341 Landowner / operators
- 701,009 irrigated acres
  - Madera, Merced, Stanislaus, Tuolumne, Mariposa counties

ESJWQC Approach

East San Joaquin Water Quality Coalition

What we are not …

- *Commodity group / farm organization*
- *Lobbying organization*

What we are …

- *We hold a "group permit" for our members*
- *Operate efficiently as possible*
- *Provide info to make tough decisions*

State Water Board Adopts "**Precedential**" Order Based On Challenges to ESJWQC General Order (2012)

- New WDR/Order Adopted February 4, 2018

- All Central Valley WQ coalitions revised WDR based on ESJWQC Precedential Order
  - All other WDRs adopted on February 7, 2019
  - Identical to ESJWQC regulations

Central Valley Coalition Model
Working on new WDR

- ESJ / CV coalitions collaborated to get best regulation possible
  - **Goal: keep new reporting to a minimum**
- Without Coalition approach could be in position of Central Coast
  - Edge of field monitoring proposed because surface water issues unresolved
  - ESJWQC members have virtually no pesticides exceedances in surface water

- **Challenge Today: minimizing excess nitrogen to groundwater**
  - **Challenge for all California irrigated agriculture**

WDR Options for Irrigated Lands Compliance

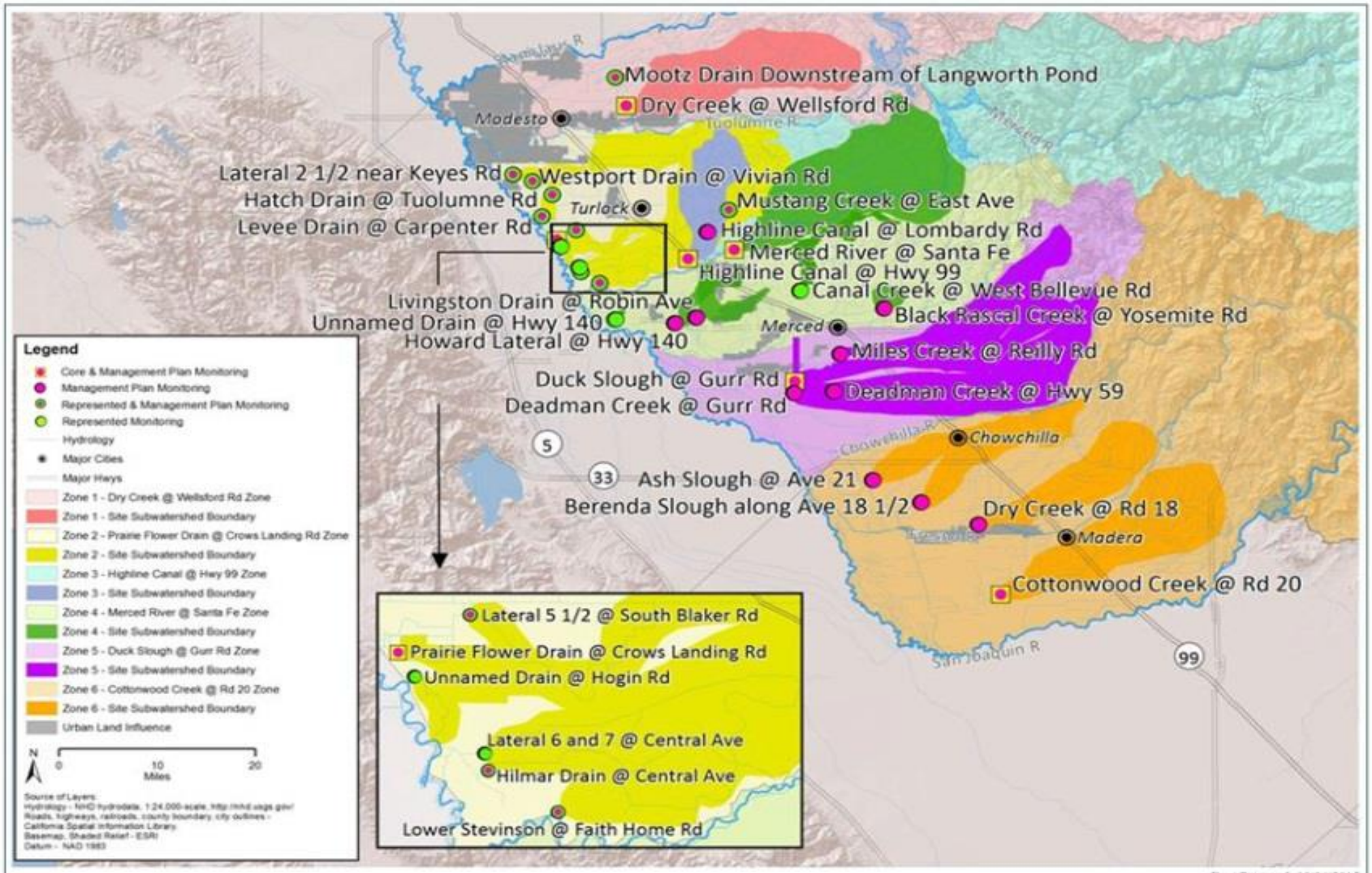
All owners/operators of irrigated cropland in the Central Valley have two options:

(1) File Individually (General Order or Individual Permit)

- *Pay separate fee to State*
- *Hire specialty consultant to complete paper work (or do yourself)*
- *Complete plans, monitoring and reports similar to coalition*

(2) Join Third Party Group

- *13 regional groups formed in Central Valley*
  - *Rice only commodity specific coalition*



Date Prepared: 10/14/2015
ESJWQC

ESJWQC Monitoring Sites Zone Boundaries & Urban Land Influence

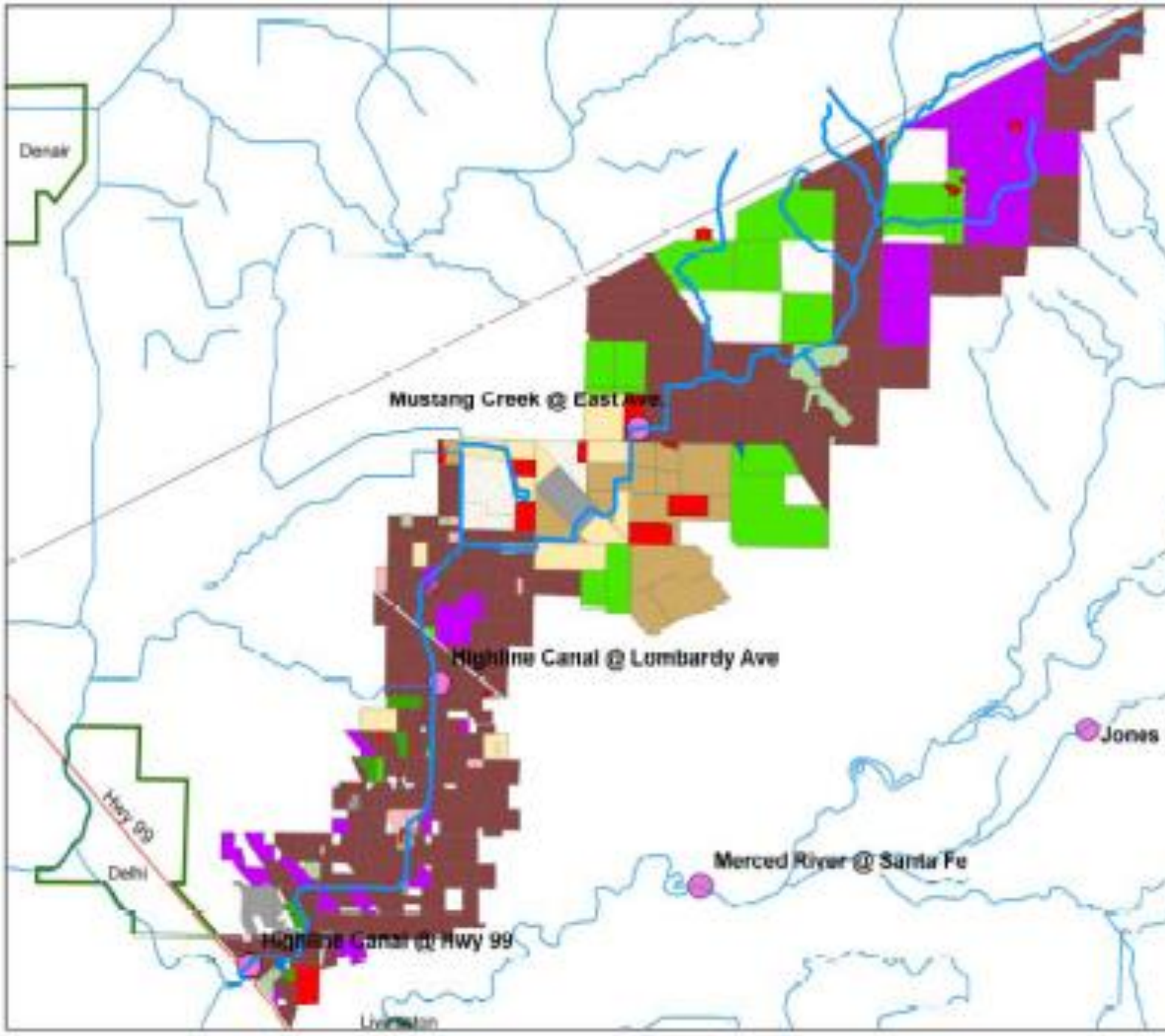
ESJ Watershed Management Plans

- Management Plan triggered by 2 or more pesticide exceedances/toxicity
  - 22 Watersheds with Management Plans in ESJ Region in 2008
- Identified Priority Watersheds
  - Watersheds with most pesticide exceedances / toxicity to indicator species

Step One:

Identify members with parcels adjacent to waterways

- Used GIS Mapping to Identify High Risk Fields
  - Mapping performed upstream of each monitoring site
    - Fields bordering waterways
    - Fields that drain into waterways



Step Two:
ESJ staff meets with members

- Discuss current management practices used on fields next to waterways
- Complete survey of practices (for watershed-wide report)

Step Three: Water/Sediment monitoring proceeds

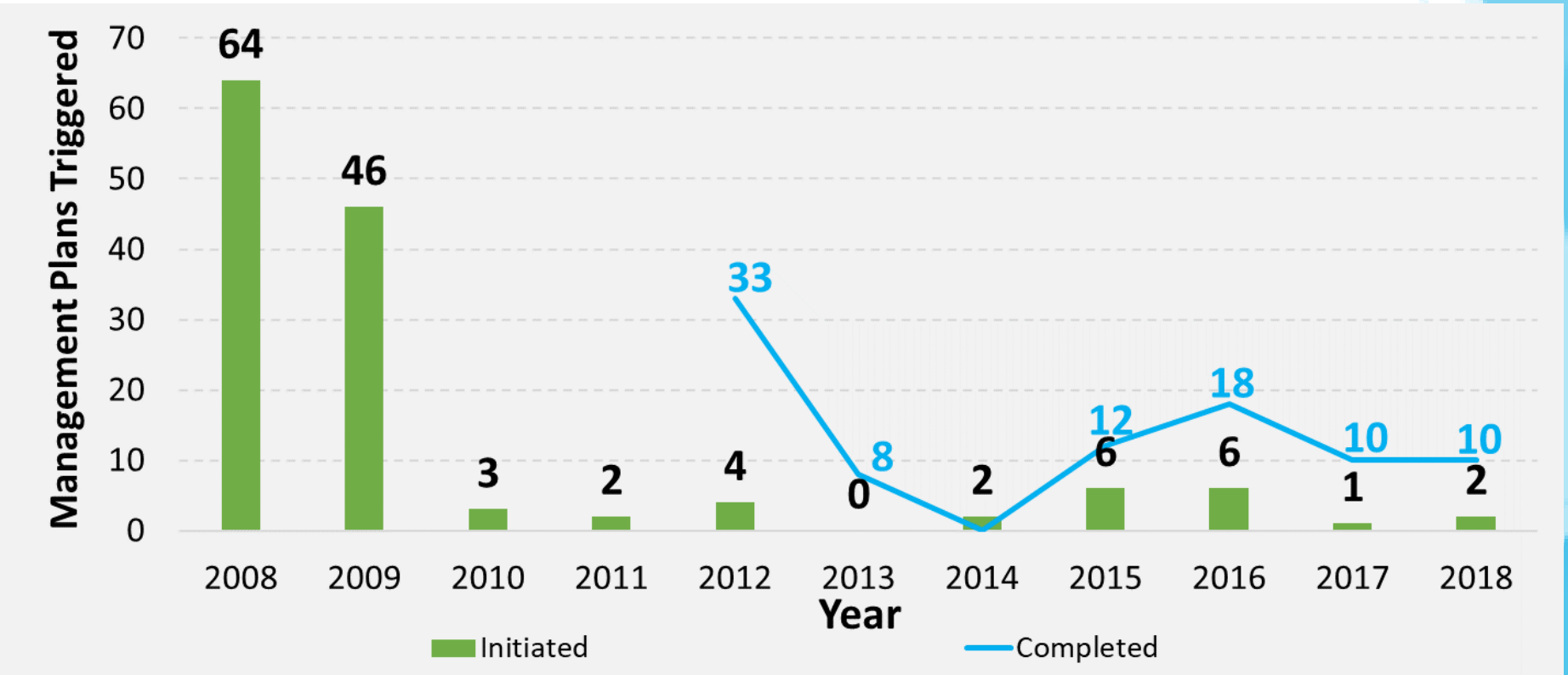
- Since 2004, ESJWQC has collected **80,880+** samples

Results of ESJ Efforts
Completion of Management Plans

- From 2012-2016, 78 management plans completed
  1. 3 years of no exceedances
  2. Demonstrate implementation of effective practices
  3. Petition Regional Board for plan completion
  4. EO approves completion in writing
- Continue surface water sampling

Management Plan Success

2008-2018




Completed Management Plans
40
35
30
25
20
15
10
5
0
2012
2013
2014
2016
Year
Toxicity
Pesticides
Metals
Nutrients
Bacteria
Field Parameters

Strategy for New Challenge
Nitrate in Groundwater

1. Understand nitrogen applied, nitrogen removed through ***"Crop coefficients"***

2. Set up groundwater basin **"Trend Monitoring"** network

3. Establish **"Groundwater Protection Targets"**
    1. Where are we now
    2. Where are improvements needed

Strategy for New Challenge

Nitrate in Groundwater

With nitrogen fertilizer ***we are on our own***

- What is correct number?
  - University of California
  - Fertilizer suppliers
- Options to prove numbers are correct
  - We do own research
  - Rely on UC numbers

Strategy for New Challenge
Nitrate in Groundwater

Crop Coefficients: **"The Number"**

- Indicates amount of nitrogen to efficiently grow a crop
  - Little to no excess for leaching to groundwater
- Some crops have "Good Numbers" i.e. research supports number
- Some crop coefficient need more studies

Converting Yield to Nitrogen Removed

- **Crop Coefficients** are used to convert pounds of harvested material to pounds of N removed
- Example
  - Crop conversion coefficient for almonds is 0.068* pounds of N removed per pound of yield
  - **If yield is 2000 lbs then crop needs 136 lbs/N acre**
    - Pounds of N removed = 2000 lbs yield * 0.068 = 136 pounds of N removed with harvest

* Developed by UC Davis (Dr. P Brown)

State Water Board Precedential Order for all Central Valley Coalitions

- Crop Coefficient defined
  - Yield per acre x Coefficient = Pounds of N removed

- Coalitions to publish crop coefficients for
  - 95% of crops by March 2021
  - 99% of crops by March 2023
  - Currently <50% of crops have “reliable” crop coefficients

“Crop Coefficients”

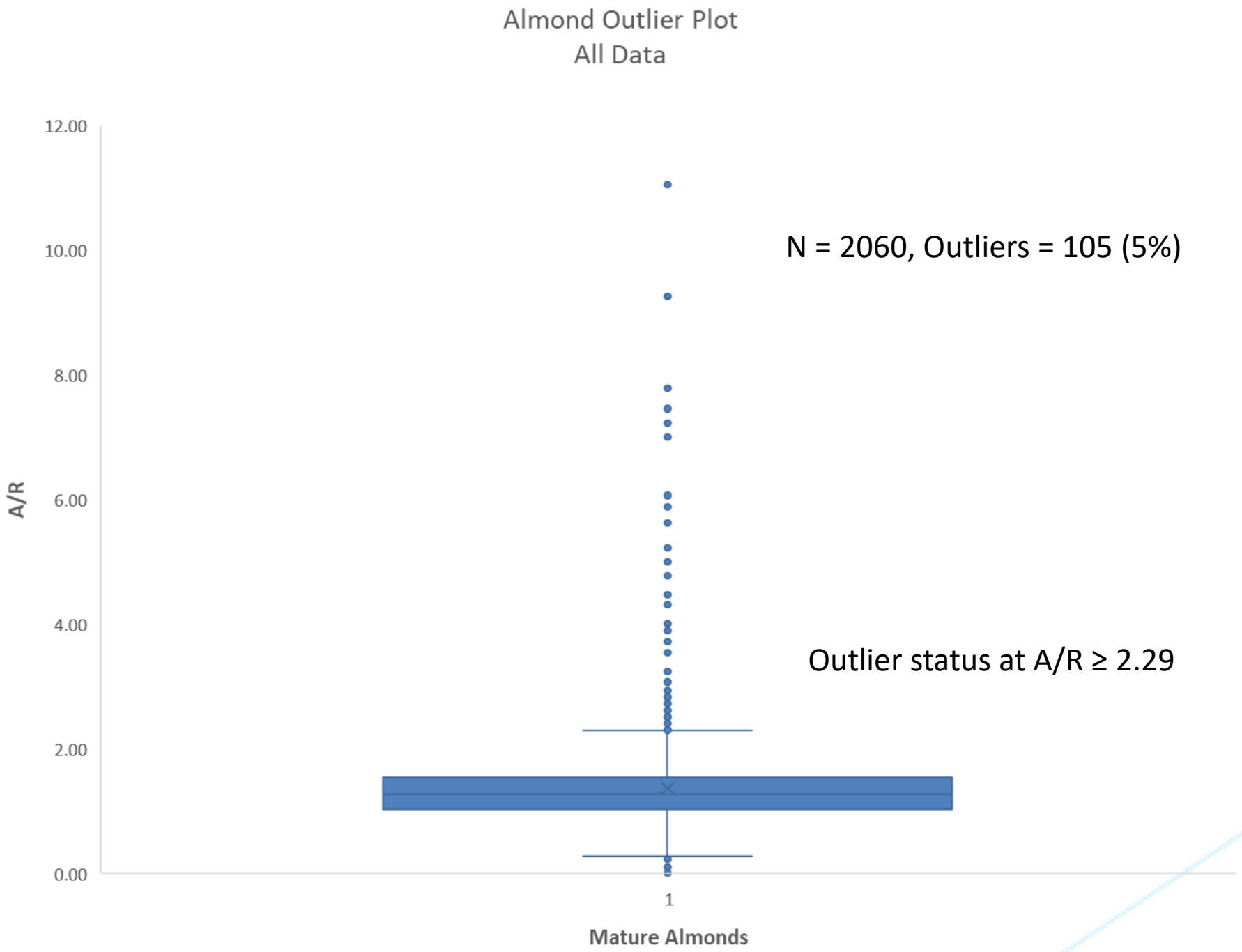
- Reliability of coefficients is variable
  - UC Davis gathered and reviewed all available coefficients
  - ESJWQC then reviewed/ranked coefficients
    - Good
    - Reasonable
    - Poor
- Currently, no plans to spend resources to improve coefficients ranked as reasonable or poor
  - Coalition welcomes discussing improvement with commodity groups

Grower Performance and Groundwater Quality

- Reducing A – R means less N leached to groundwater
- Reflected in improved groundwater quality over time
  - May take decades for improvements
  - Some areas improvement in short time
- Key
  - Use management practices to reduce leaching potential

Metric for Grower Performance – A/R

- Used to determine outliers
- Accumulate A/R values for crops across coalition region
- Propose outlier identification method
  - Calculate the Interquartile Range
    - Box and whisker plot
  - Calculate outliers with standard approach



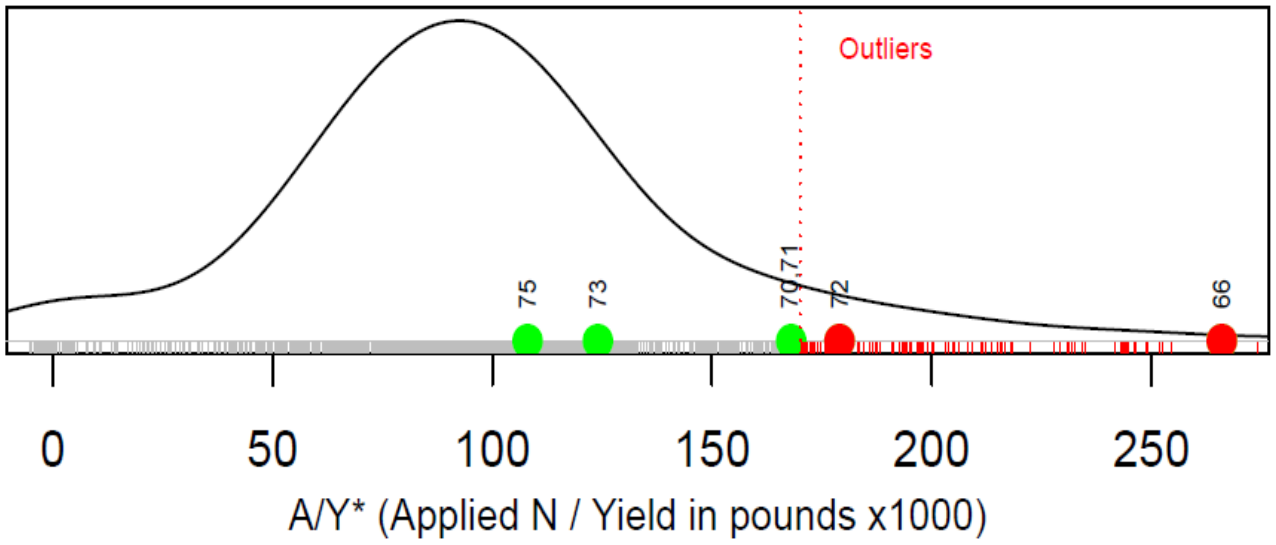
N = 2060, Outliers = 105 (5%)

Outlier status at A/R ≥ 2.29

How Do Your Management Units Compare To All Other Almonds Growers?

835 Coalition members reported on **2143** Almonds Management Units.
Median A/Y* = **97** A/Y* values larger than **170** are considered outliers.
Median A = **171** pounds/acre

Your A/Y* Compared To All Other Almonds Growers



Registration is optional
Free for
ESJWQC members

Web Portal

https://www.esjmemberlogin.com/

Features

- 24/7 access to membership information including enrolled parcels, invoice, and upcoming events
- Submit your
  - Farm Evaluation (FE) survey
  - Irrigation/Nitrogen Management Plan (NMP) Summary Report
- Assign parcels to secondary contact
  - They login and complete surveys

Member Dashboard

5 NMP Summary Report
Complete and submit your 2017 NMP SR.

6 Farm Evaluation Survey
Complete and submit your 2017 FE.

7 Document Repository
View and print submitted paperwork and invoices.

Cures

Coalition for Urban/Rural Environmental Stewardship

NEONICITINOID INSECTICIDE STEWARDSHIP PROGRAM

BAYER

Bayer CropScience

Gowan®

The Go To Company

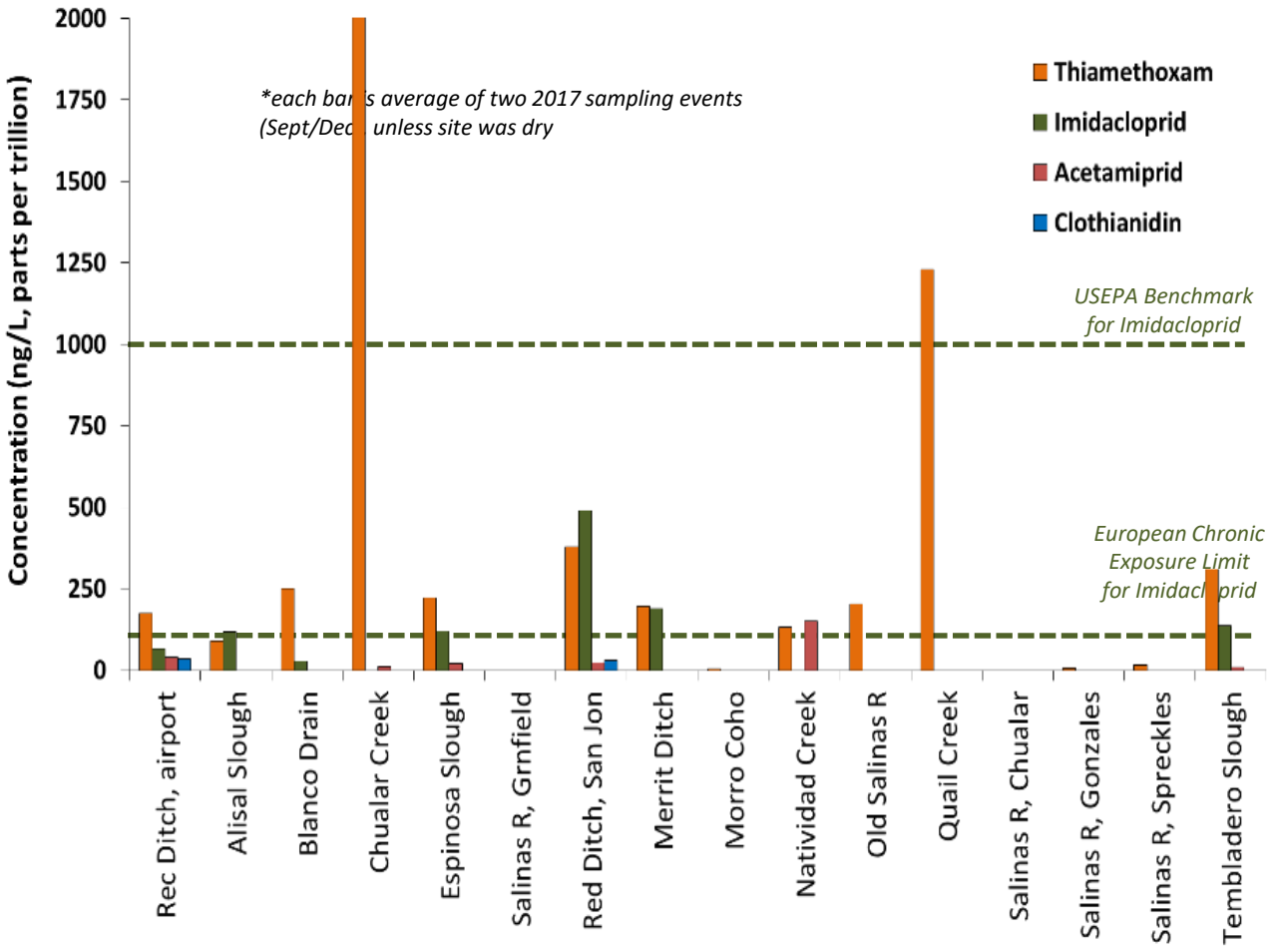
syngenta

VALENT®

Neonicotinoid Insecticide Stewardship Program

1. Identify potential Best Management Practices (BMPs) by Crop Use Category
    1. Interview growers/Pest Control Advisors, suppliers on potential practices
2. Develop and Publish Neonic BMP Brochure: *Vegetable Crops*
    1. Summary of BMPs to protect surface water
3. Pesticide Applicator Outreach
    1. 25 minute video on application BMPs for neonics
    2. Survey participants on use levels of BMPs
4. Presentations at Grower/Applicator/PCA Outreach and Educational Meetings
    1. Presentations at Continuing Education meetings on surface water issue, potential BMPs

Salinas Valley Neonicotinoid Detections



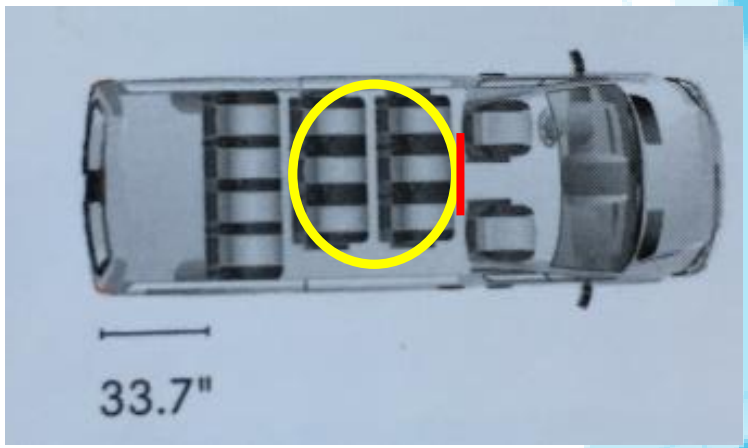
Neonicotinoid Product Stewardship Focus

Primary Transport Mechanisms for Pesticides to Surface Water

- **Irrigation runoff**
  - Sprinklers or furrow/flood
    - Minimize or eliminate sediment transport
- **Stormwater runoff**
  - Avoid applications prior to storm events
  - Retain water on-site (not practical in large storm events)
- **Spray drift management / over spray of waterways**
  - Set back / buffer between sensitive areas and field
  - Spray field edges when wind blowing away from waterways

Mixing and loading spills can be transported by either

Pesticide Applicator Outreach



Is this the culprit?

East San Joaquin Water Quality Coalition

Schedule On-farm Training

Pesticide BMP Video

English or Spanish

Parry Klassen

559-288-8125