

Rooted in Compliance :

Nitrogen Reporting Challenges for Central Valley Nurseries

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2024 California Nursery Conference

Watsonville, CA

October 15, 2024

Reporting in the Central Valley



Data reporting began in 2015 with the East San Joaquin Water Quality Coalition



Development of online software for grower reporting

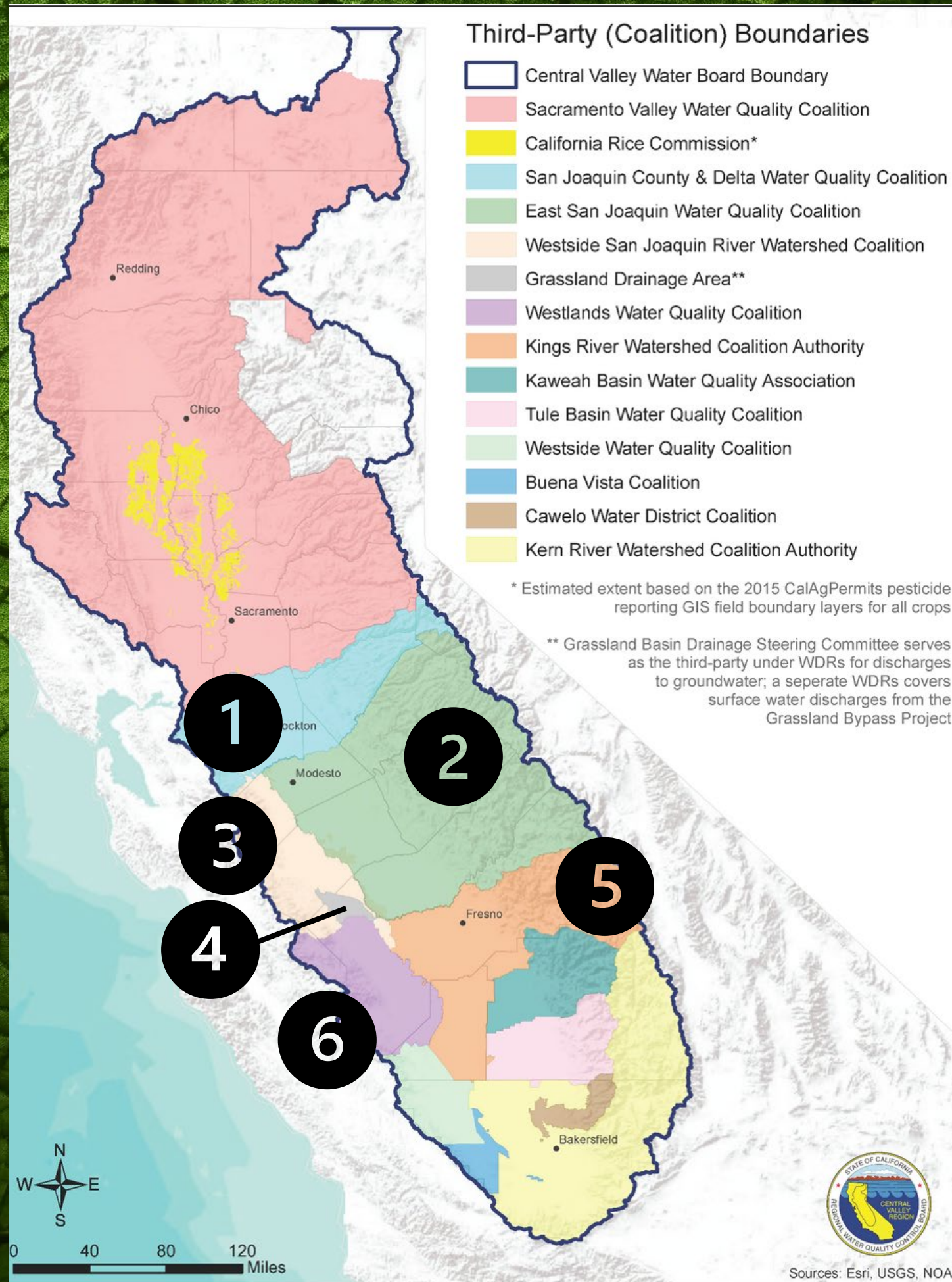


Coalitions aggregate information and report to the Regional Board

- Anonymous Member ID
- Anonymous Parcel ID
- Nitrogen Applied per Acre
- Yield per Acre
- Removed per Acre (if coefficient is available)
- Indication if the parcel is a statistical outlier
- Irrigation and nitrogen management practices



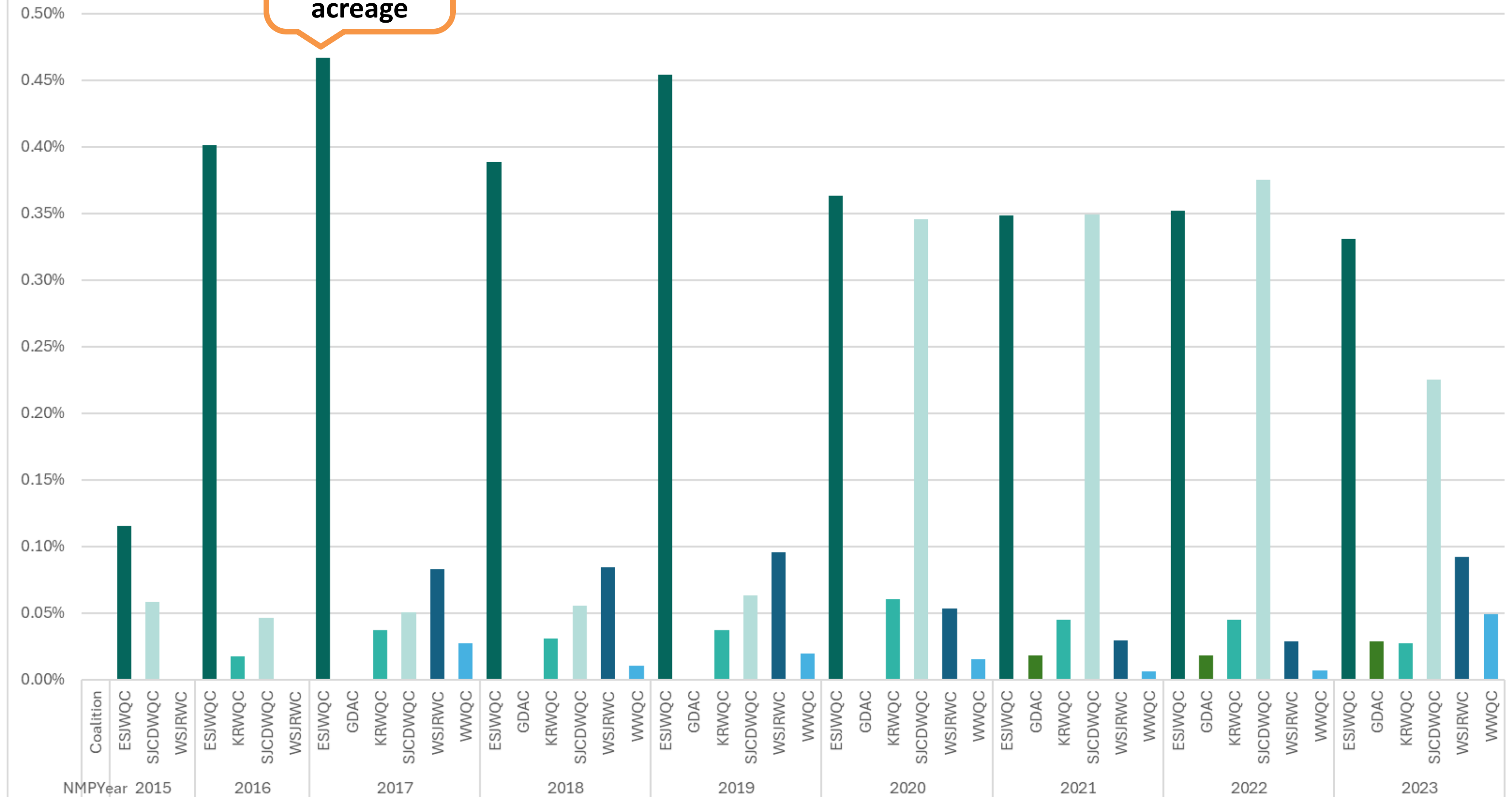
INMP SR Data Managed by MLJ



1. San Joaquin County & Delta Water Quality Coalition
2. East San Joaquin Water Quality Coalition
3. Westside San Joaquin River Watershed Coalition
4. Grassland Drainage Area
5. Kings River Water Quality Coalition
6. Westlands Water Quality Coalition

0.47% of
reported
acreage

Percent of Total Acreage Reported as Nursery Crop by Coalition by Year



Reporting Online

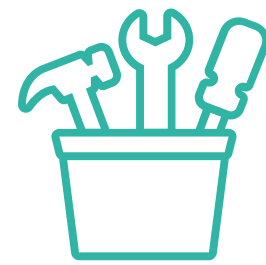
Step 1 MU(s)			Nitrogen Sources				Yield		
Management Unit Description	Total Acres	Specific Crop	N in Irrigation Water (lbs/acre)	Organic Amendments (lbs/acre)	Dry/Liquid Fertilizers (lbs/acre)	Foliar Fertilizers (lbs/acre)	Harvested Yield (Per Acre)	Production Unit	Yield Information
Nursery	73	NURSI	15	0	51	0	25000	Units ▼	Seed or ▼
Potted	50	NURSI	17.15	0	51	0	11103	Units ▼	Seed or ▼

Reporting by Nurseries in the Central Valley

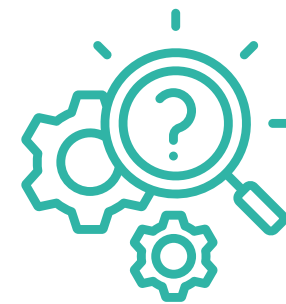
- Yield is reported as “Units”
- Crop options include:
 - Nursery, Potted
 - Nursery, Bare Root
 - Christmas Trees
 - Green Houses
 - Nursery



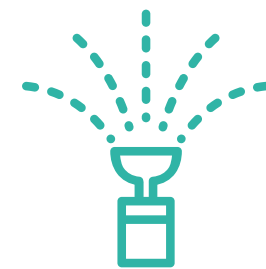
Purpose of the **INMP** Summary Report



Diagnostic tool

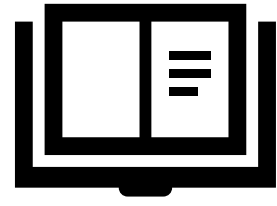


Help Coalitions (and Regional Board)
determine if there is a problem



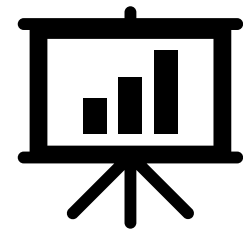
Identify management practices





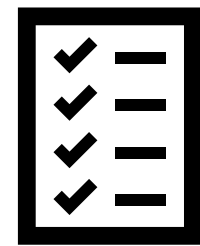
INMP Summary Report

- Nitrogen Applied
- Yield
- Nitrogen Management Practices
- Irrigation Management Practices



Identification of Outliers

- 3 Year Running Totals
- A/R – agronomic metric relative to growers with same crop



Management Practice Implementation Report

- Documentation of existing practices
- Tracking of newly implemented practices



Reduced A/R Ratio

- Outliers are no longer “outliers” due to improved practices, decreased nitrogen applied and/or increased yield (decreased A/R)

GW Quality Management Plan

- Performance Goals / Metrics
- Incorporation of **GWP Values by Township**
 - Reduction of GWP Values as a result of improved practices and reduced A/R ratios



Management Practice Evaluation Program

- Identification of effective practices
- Development of **A/R acceptable ranges**



Groundwater Quality Trend Monitoring

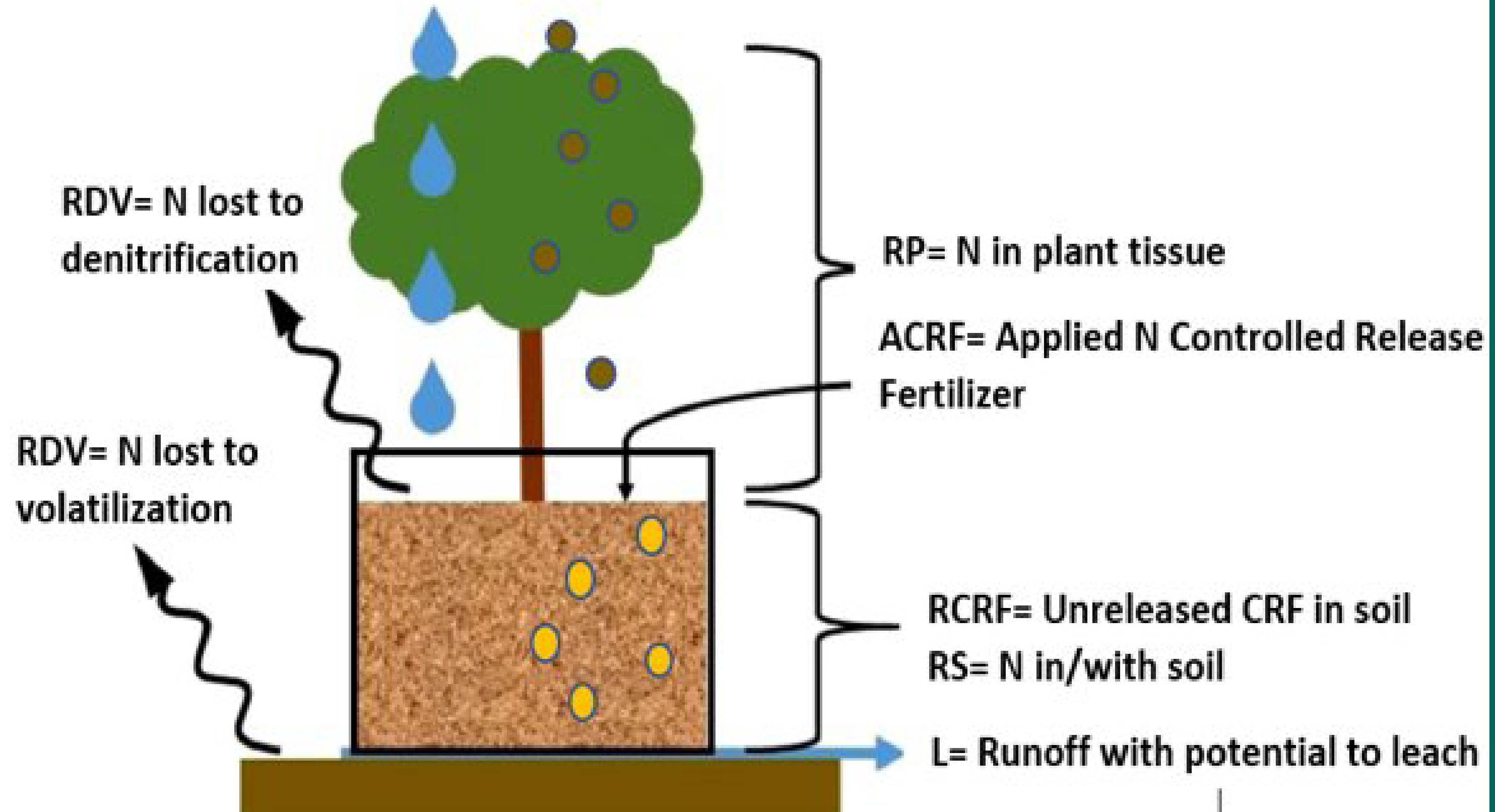


Reporting Challenges

- Typical harvest/yield does not apply
- Extreme volume of inventory
- Plants started and sold over time
- Controlled release fertilizers



AF= N applied other sources
(irrigation, fertigation, topdress)



A photograph showing several small green seedlings in black plastic nursery pots, arranged in rows. The soil is dark and moist.

Nursery Reporting - N Applied, N Removed

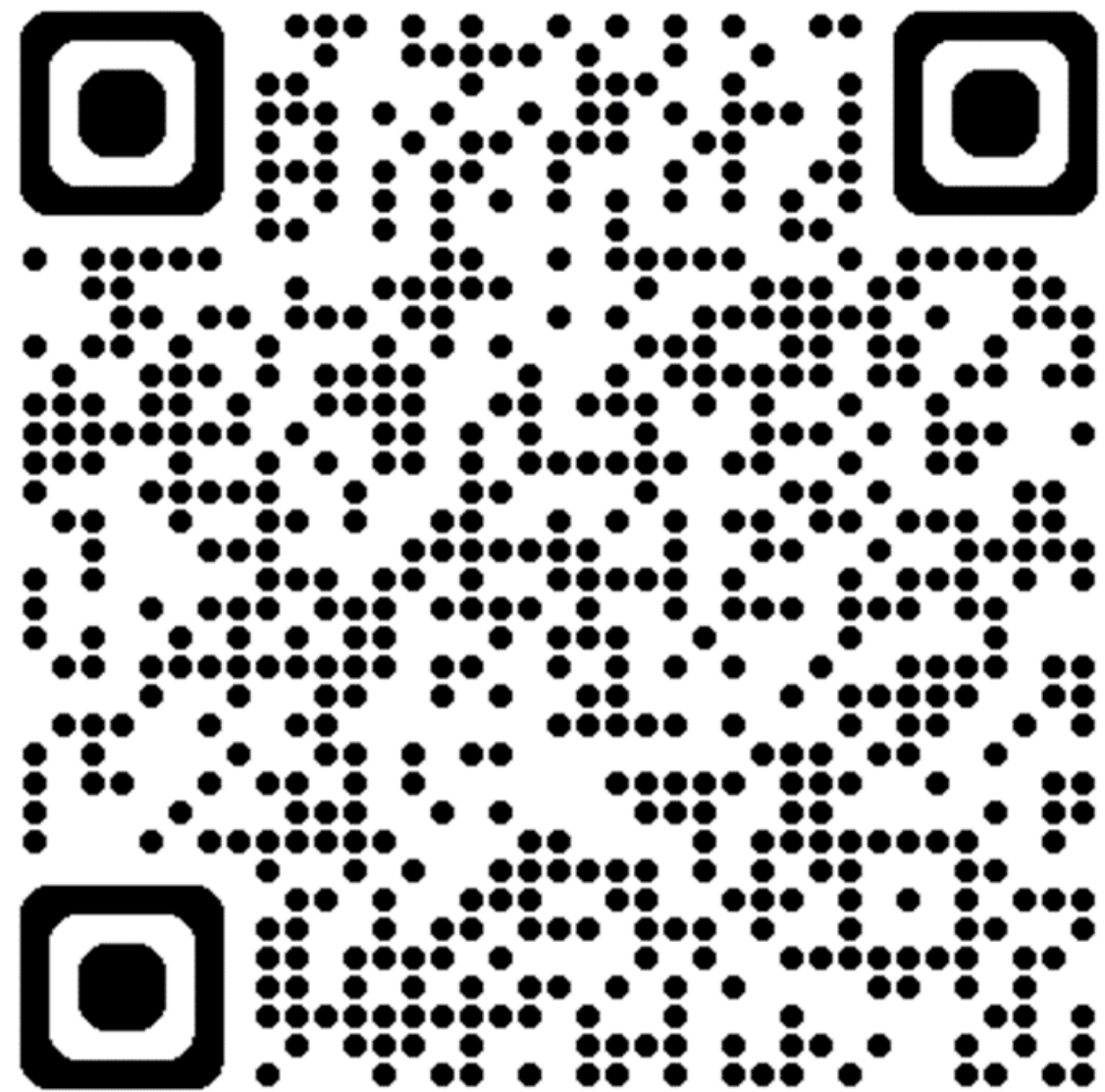
N Applied

- Arithmetic is simple, bookkeeping is difficult
- Need tools to simplify tracking - link to inventory
- Submission to Coalition is done using INMP Summary Report

N Removed

- Make sure that unreleased CRF is counted as removed
- N removed differs based on planting date and sale date
- Only two studies available to obtain N removed values
 - Only about 85 different N removed values can be generated
 - Very little commonality based on genus, family, perennial, annual, etc.
 - Need hundreds or thousands more - likely not possible
- Need creative solutions to generate reasonable N removed coefficients

IN Plan Software Option



IN Plan Services

- Simplifies tracking & reporting nitrogen
 - Can generate alerts of when it is time to repurchase & replant
 - Does all of the calculations; all we need are the initial values
 - Nitrogen reporting requirements can be met and submitted to the Coalition
 - Can generate invoices for clients and suppliers
 - Capable of tracking inventory
-

Nitrogen Reporting

I am looking for...

Hines Nursery

Area Sown

+ Add New Inventory fo

Areas of Acclimatization

+ Add New Inventory fo

1 Gallon Roses

Field Grown Cut Flowers

Starter Shed

.VH

.Rb

Greenhouse

Greenhouse Production

Inventory and

Inventory Information

Group Name:

Plant Name:

Count:

Acres:

Cost Per Unit:

Container Type:

Date Updated:

Notes:

10 March 2020

New set of pots

Add Nitrogen Application

Date Applied:

mm/dd/yyyy

Custom Group Name:

(Group Name)

Fertilizer:

Select from Fertilizers below

Amount Applied (lbs):

0.00

Plant Stock/s:

None selected

Acres:

(Acres)

Notes:

(Optional notes)

Clear All

Cancel

+ Add Nitrogen Application

Add Nitrogen Application

	Amount ...	Amount ...	Date_ Applied
0	0		03/10/2020
0.01	0		07/20/2022

1 - 2 of 2 items

Areas of Acclimatization at a Glance

TOTAL APPLICATION

0.01 lbs



TOTAL NITROGEN APPLICATION

0 lbs



ACREAGE

0.009 acres



NO. OF PLANTS

500



But is this the right tool?

Important to understand the risk of nitrogen use by nurseries
on groundwater

Reporting of data does not necessarily assess the risk



3. *Exceptions to Nitrogen Management and Reporting Requirements*

- a) Any category of Members (such as growers of a particular crop or growers in a particular area) seeking to be exempted from the nitrogen management requirements in this section shall make a demonstration, for approval by the Regional Board, that nitrogen applied to the fields does not percolate below the root zone in an amount that could impact groundwater and does not migrate to surface water through discharges, including drainage, runoff, or sediment erosion.
- b) Some or all growers in the three categories listed below may have alternative nitrogen reporting requirements as specified. The alternative reporting requirements can be applied upon Executive Officer approval that the grower(s) meet the stated criteria.
 - a. Growers that operate in areas with evidence of no or very limited nitrogen impacts to surface water or groundwater; have minimal nitrogen inputs; and have difficulty measuring yield, may report the A value only. The Executive Officer will determine when, if at all, these growers will begin reporting R.
 - b. Diversified socially disadvantaged growers, as defined by the Farmer Equity Act of 2017, with a maximum total acreage of 45 acres; gross annual sales of less than \$350,000; and a crop diversity greater than 0.5 crops per acre (one crop for every two acres), may initially report the A value only. The Executive Officer will determine when these growers will begin reporting R and whether these growers must receive targeted self-certification training. The third-party or the Member may propose alternative methodologies for estimating R to the Executive Officer for approval.
 - c. Growers with a maximum total acreage of 20 acres and a crop diversity greater than 0.5 crops per acre (one crop for every two acres), may initially report the A value only. The Executive Officer will determine when these growers will begin reporting R. The third-party or the Member may propose alternative methodologies for estimating R to the Executive Officer for approval.

Alternative Reporting

WHAT DOES THIS MEAN FOR REPORTING?



REDUCED DATA REPORTING

No longer required to report:

- By MU
- Specific Crop (assumed to be Specialty crop/Mixed vegetable)
- Yield
- Organic Amendment N Contribution
- Nitrogen Efficiency Practices

Reduced irrigation efficiency practices:

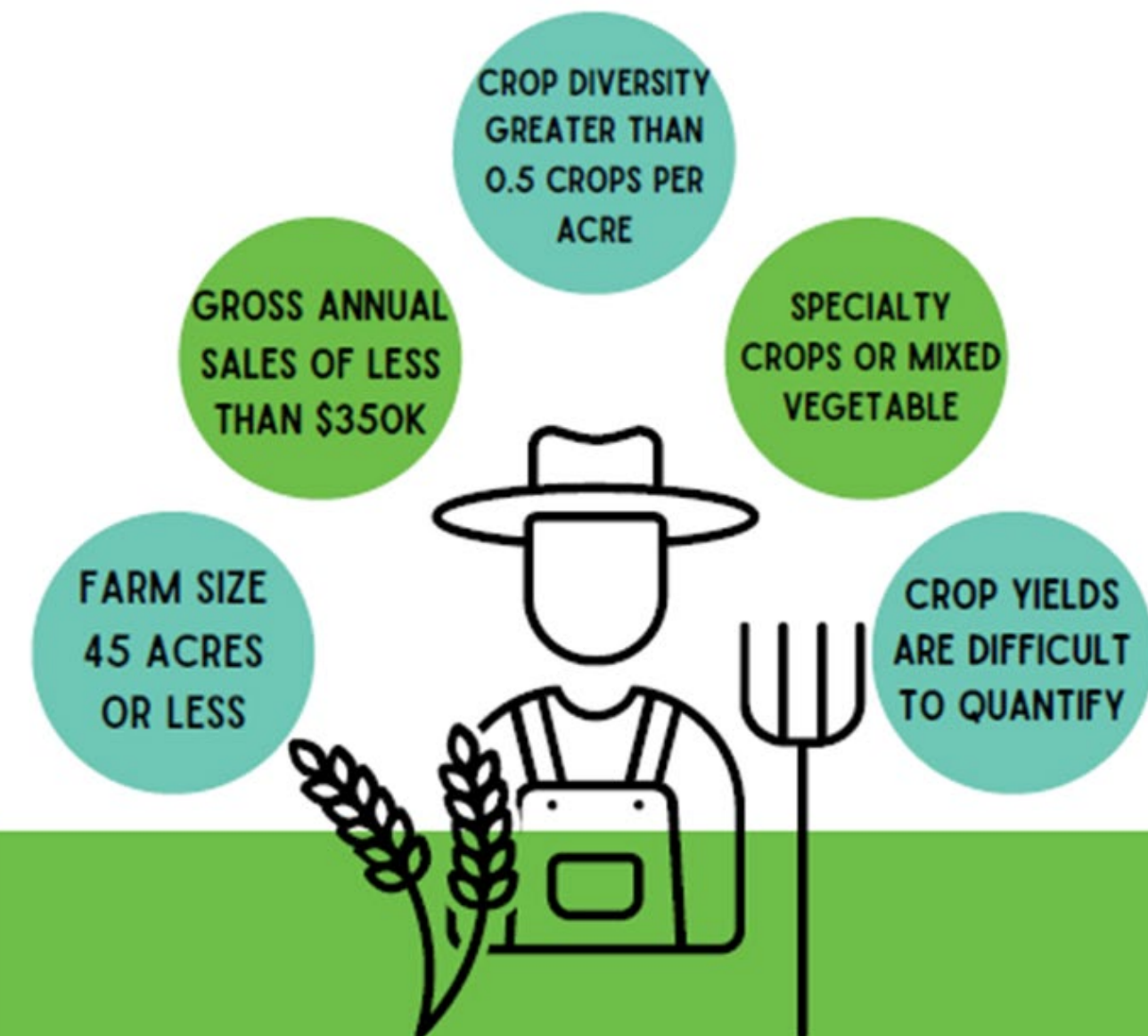
- Laser Leveling
- Use of Moisture Probe

No longer required to be certified

ONLINE ENTRY FORMS IN DEVELOPMENT!

SOCIALLY DISADVANTAGED GROWER

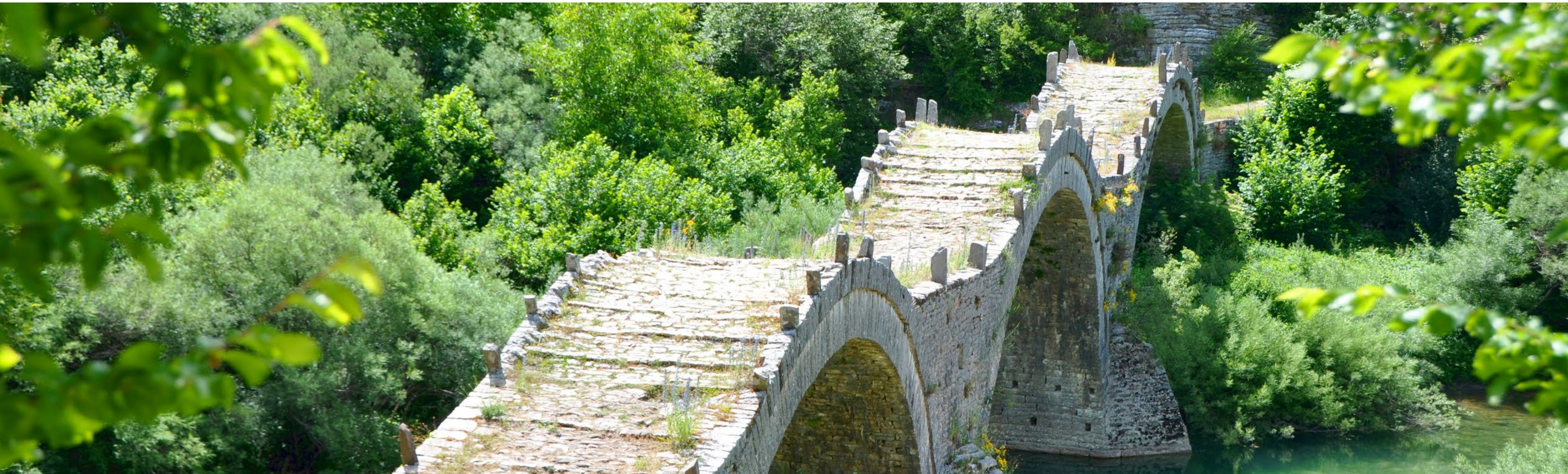
Socially disadvantaged growers in the Kings River Water Quality Coalition have been approved to utilize shortened INMP Worksheets and Summary Reports. In addition, funding for increased education of these growers has been approved.



Approved for reduced reporting by the Regional Board starting in the 2022 Crop Year

Looking Forward

Building a bridge between research and policy to create a protective and efficient method of reporting for nurseries





Thank You

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