



THIRD PARTY PROGRAM FOR AG ORDER 4.0

UCCE 2022 IRRIGATION & NUTRIENT MANAGEMENT MEETING

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PRESERVATION, INC. THIRD PARTY PROGRAMS

2021: Preservation, Inc. approved as an expanded-scope Third Party by Central Coast Water Board (7/2/21)

2022

- Collect State Fees (reduced-rate for Third Party members) & Third Party program fees
- Total Nitrogen Applied (TNA) reporting – Tech. assist & spreadsheet-based reporting form
- Groundwater Quality monitoring (domestic & primary irrigation wells)
- Surface Water Cooperative Monitoring Program (CMP); Work Plan by 7/1/22; Follow-up Pilot

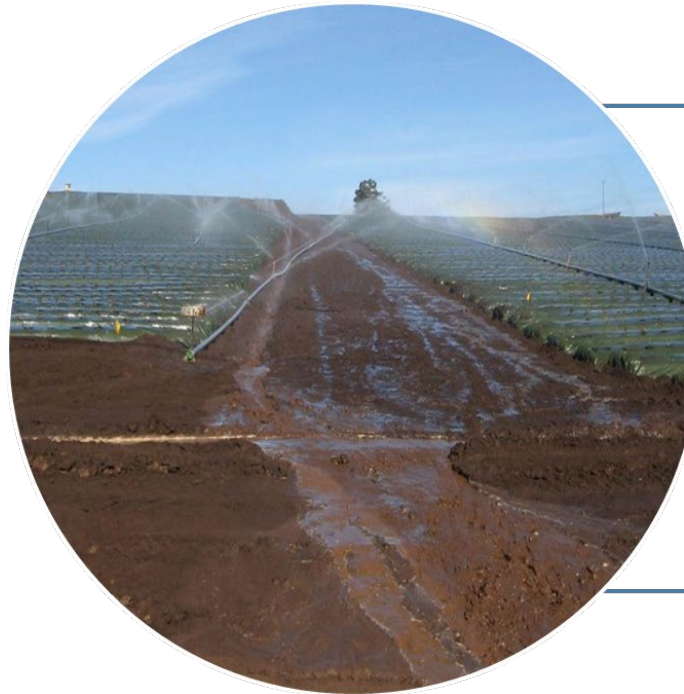
2023

- Continue 2022 programs; Submit Groundwater Work Plans; phase in INMP



IRRIGATION & NUTRIENT MANAGEMENT FOR SURFACE WATER PROTECTION

*Managing to
avoid having...*



Eroded
soils



Fertilizers
& soil
amendments



Pest
control
products

... leave the farm

PEST CONTROL PRODUCTS APPLIED & DETECTED IN A LOWER SALINAS WATERSHED

Active Ingredient	Recent CMP Detection?	Applied Acreage	Applied Pounds	Example Product Names (others may exist)
MALATHION	Yes	5557	10671	MALATHION 8 AQUAMUL
METHOMYL	not sampled	3992	2490	DU PONT LANNATE SP INSECTICIDE
IMIDACLOPRID ←	Yes	6945	1724	IMIDASHOT DF, ADMIRE PRO, AE F106464 00 SC43 A4 INSECTICIDE, WRANGLER, LEVERAGE 360 , NUPRID 2SC, IMIDASHOT, MACHO 2.0 FL
PERMETHRIN ←	Yes	8397	1281	PERMETHRIN, PERM-UP 25 INSECTICIDE, PERM-UP 25DF, POUNCE
BIFENTHRIN ←	Yes	11466	1215	BRIGADE WSB INSECTICIDE/MITICIDE, SNIPER, BIFENTURE 10DF
ACETAMIPRID ←	Yes	9811	959	ANARCHY 70 WP, ASSAIL 30SG,
THIAMETHOXAM	Yes	12802	747	ACTARA, FLAGSHIP, PLATINUM, VOLIUM FLEXI
LAMBDA-CYHALOTHRIN ←	Yes	11036	324	SCIMITAR GC INSECTICIDE, WARRIOR II WITH ZEON, LAMBDA-CY EC INSECTICIDE-RUP, BESIEGE INSECTICIDE, SILENCER VXM,
COPPER Compounds	Yes	529	222	CHAMP FORMULA 2, BADGE X2, CUEVA FUNGICIDE
CLOTHIANIDIN	Yes	1387	210	BELAY INSECTICIDE
CYPERMETHRIN ←	Yes	3380	161	MUSTANG INSECTICIDE
DIMETHOATE ←	Yes	392	134	DREXEL DIMETHOATE LV
ESFENVALERATE	No	836	39	ASANA XL INSECTICIDE
CYFLUTHRIN ←	Yes	77	4	DECATHLON 20 WP GREENHOUSE AND NURSERY INSECTICIDE

Chlorpyrifos also detected at 0.4 TU ←

← Red arrow indicates Active Ingredient detection at a level toxic to aquatic organisms



All samples from this site/year were toxic to Midge and/or Water Flea

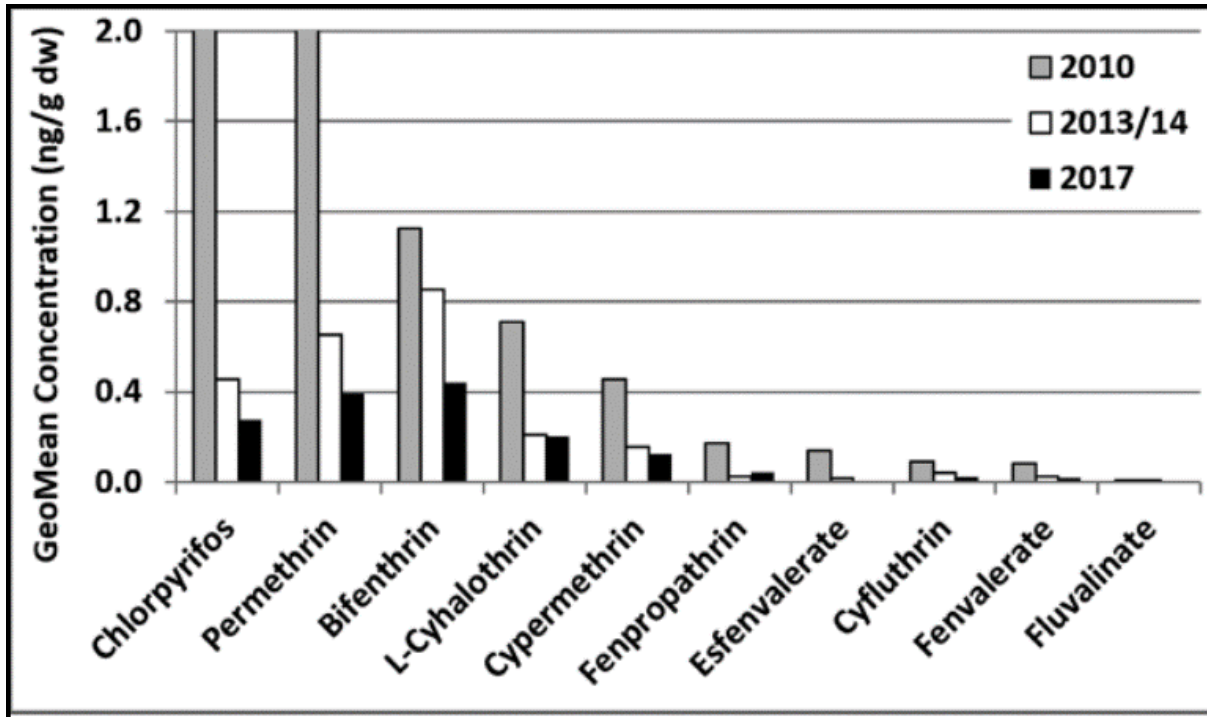


All samples from this site/year were toxic to Hyalella in sediment

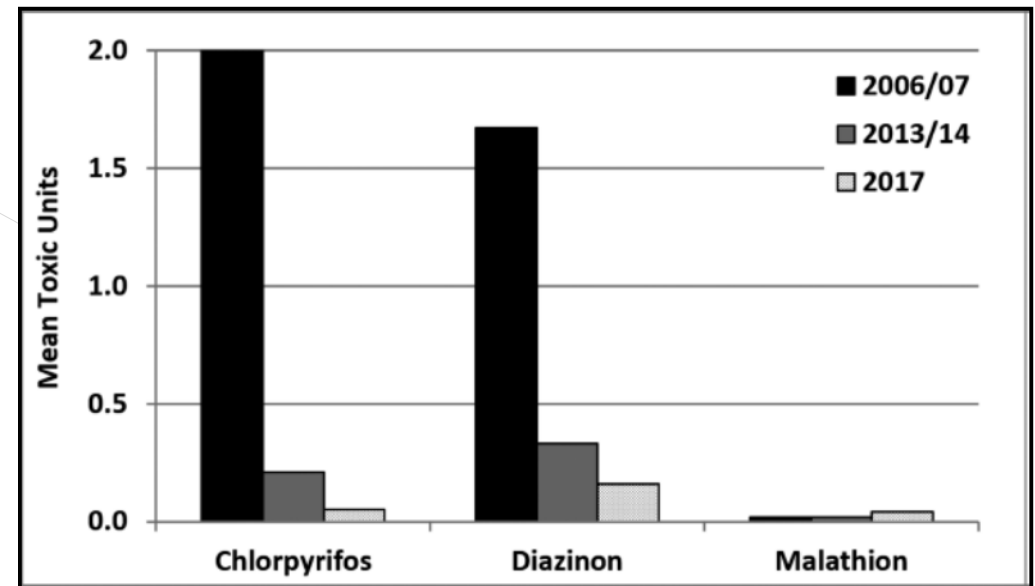
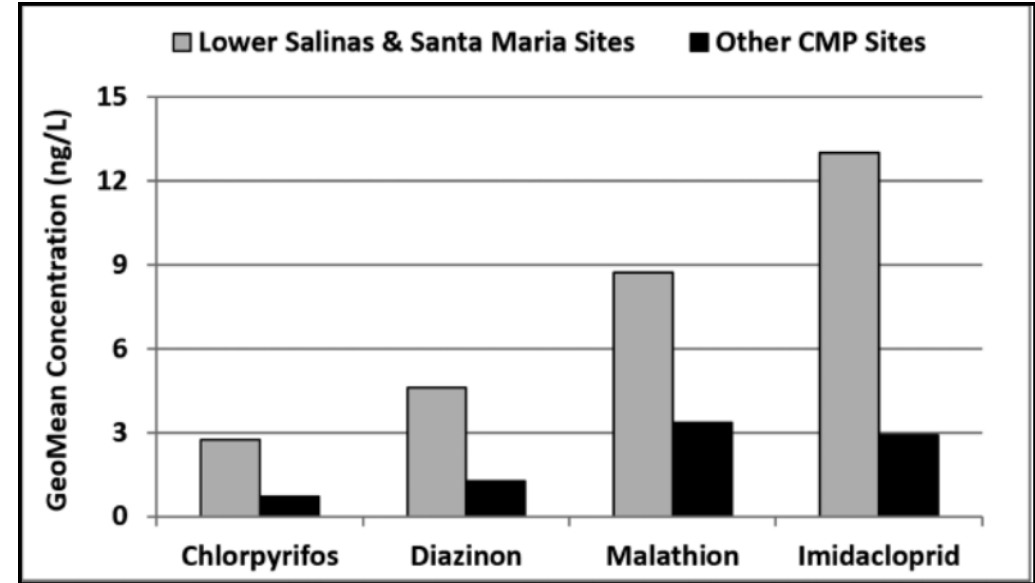


Organophosphate & [Imidacloprid](#) (a [Neonicotinoid](#)) detections in water, aggregate of all CMP sites, 3 study periods

CENTRAL COAST PESTICIDE DETECTIONS IN CMP MONITORING



Pyrethroid pesticides detected in sediment,
Aggregate of all CMP sites, 3 study periods





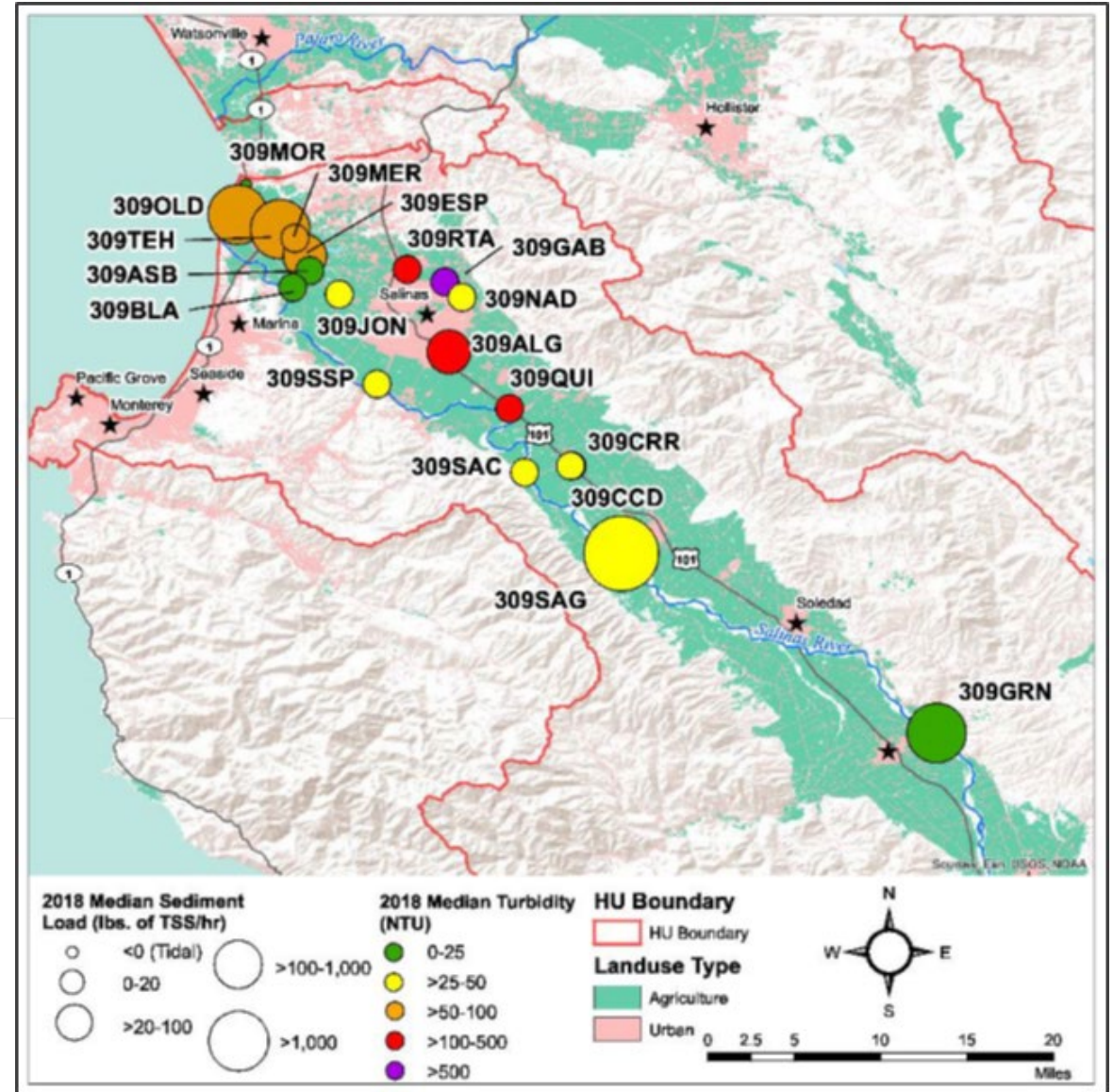
TURBIDITY = ERODED SOILS IN WATER



CMP site with
very low Turbidity
in July



Same site in
September, with
very high Turbidity

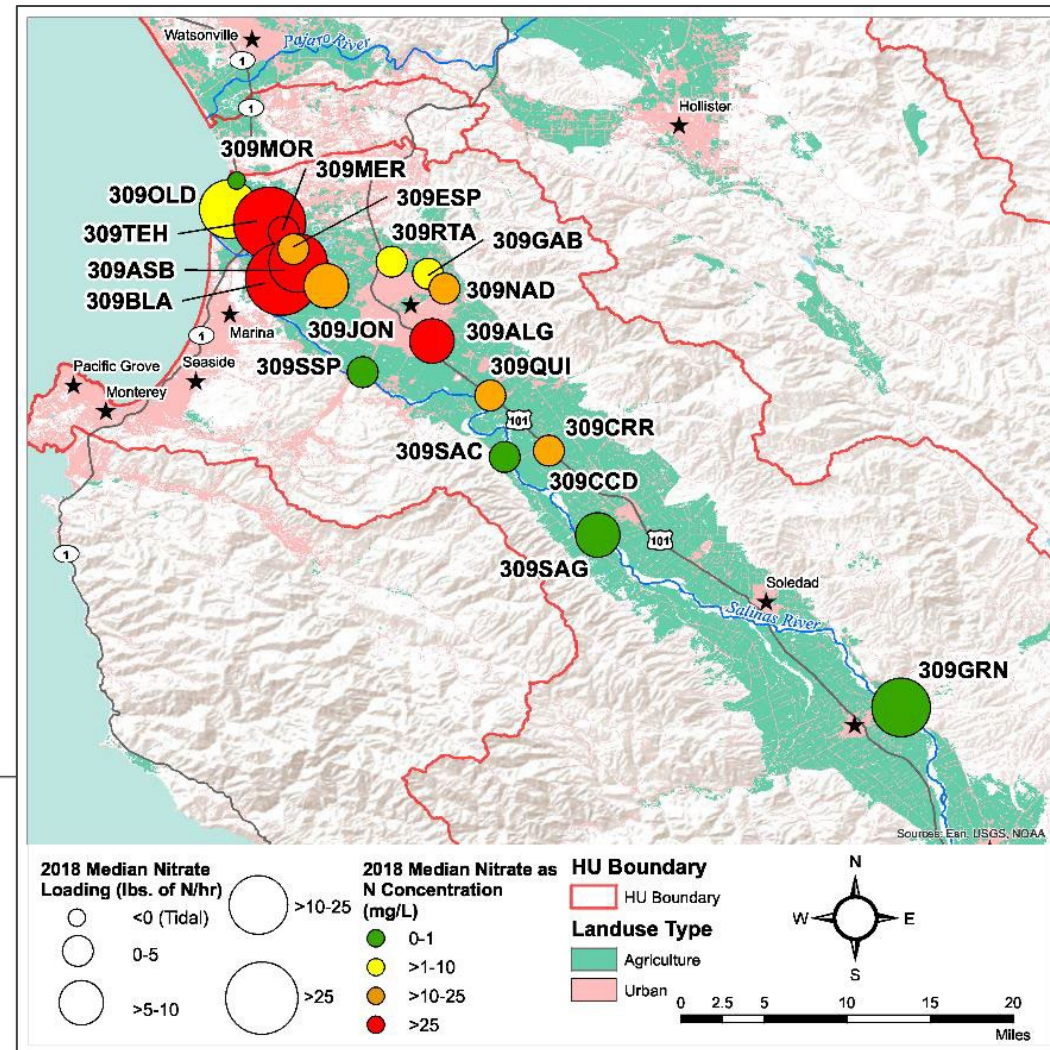
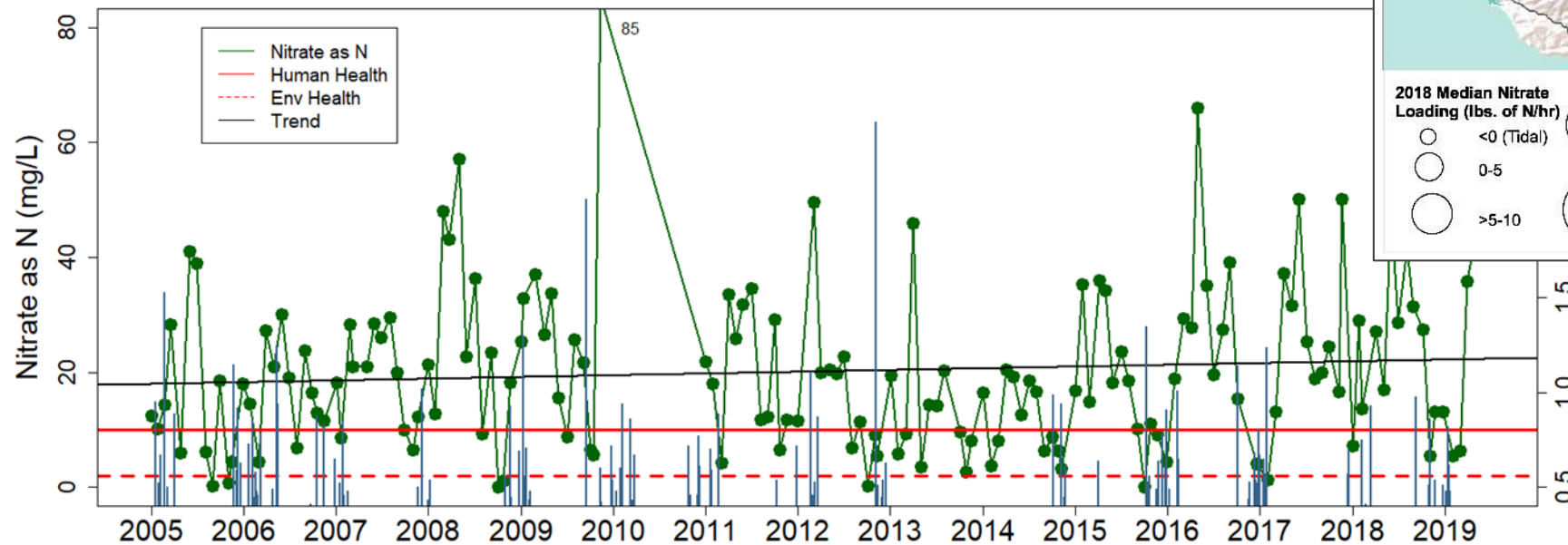






NITROGEN IN SURFACE WATERS

Example of an increasing trend in Nitrate Concentration in Surface Water





REASONS FOR NITRATE IN FARM RUNOFF

- The irrigation system draws from a high-nitrate well
- Fertigation (if water runs off)
- Water leaches through beds on a sloped field, accumulates down-slope and runs off
- Drip/emitter blow-outs during fertigation (if water runs off)
- Fertilizer dropped in head/tail ditch during application gets picked up in runoff water
- Other reasons??

- *“Dialing in your fertilizer” (pounds-applied) will generally not help solve the above issues*
- *Field surface runoff that does not contact piles/pools of fertilizer can have low to moderate N*



SURFACE WATER FOLLOW-UP

- Ag Order 4.0 includes Numeric Limits for Surface Water parameters (N, tox, turbidity, etc.)
 - Interim numeric objectives introduced through TMDL's; Final Objectives in Ag Order & TMDL's
- Ag Order 4.0 requires Surface Water Follow-Up Monitoring (Third Party or Individual)
 - Upstream Monitoring will likely be required; Ranch-Level Monitoring can also be required
- Preservation, Inc. focus in 2020-2022 = training growers to self-assess:
 - Presence, concentration, and frequency/volume of Pesticides, Nitrogen, and Soils in water leaving ranch
 - Appropriate management practice selection, and efficacy of selected practices
- Additional focus = Watershed-scale, or “collective,” treatment options where ranch-level compliance is more difficult to achieve



IRRIGATION & NUTRIENT MANAGEMENT FOR GROUNDWATER PROTECTION

Groundwater Quality

- Domestic Wells
- Primary Irrigation Wells
- Trend Monitoring Work Plans

INMP

Irrigation & Nutrient
Management Planning

- Total Nitrogen Applied (TNA)
- INMP Reporting
- Responding to high-N applications and “A-R”



WELL SAMPLING IN 2022

Preservation, Inc. members must schedule sampling with designated labs & samplers, because:

- Irrigation well sampling in 2022 is for pre-trend monitoring purposes (as well as TNA)
- Domestic well sampling in 2022 requires collection of a Volatile Organic Compound (VOC), i.e. 123-Trichloropropane

The screenshot shows the CCWQP website with the following content:

- Navigation:** Contact, Membership, Surface Water, Groundwater (highlighted), TNA/ INMP, Resources, About.
- 2022 Well Sampling:** To sign up for 2022 well sampling – Primary Irrigation Well, and (only if applicable) Domestic Well – please visit the [sign-up page](#). [2022 Well Sampling Sign-up](#)
- Domestic Well Sampling Requirements For 2022:** Per Ag Order 4.0, ALL on-farm domestic wells must be sampled in March-May of 2022. The samples must be analyzed by an ELAP-certified laboratory, and reported directly to GeoTracker. Well owners/operators must also provide laboratory results to well users within 3 days of receipt. Preservation, Inc. will assist our members with on-farm domestic well sampling in 2022. We have negotiated group rates for sample collection, lab analysis, and GeoTracker reporting. Please look for an email notification in January, 2022 to sign up for sampling.
- Irrigation Well Sampling Requirements For 2022:** Per Ag Order 4.0, the primary irrigation well from EVERY ranch must be sampled in March-May of 2022. The samples must be analyzed by an ELAP-certified laboratory, and reported directly to GeoTracker. Preservation, Inc. will assist our members with primary irrigation well sampling in 2022. We have negotiated group rates for sample collection, lab analysis, and GeoTracker reporting. Please look for an email notification in January, 2022 to sign up for sampling.

Date Range

1/5/2017 - 9/29/2021

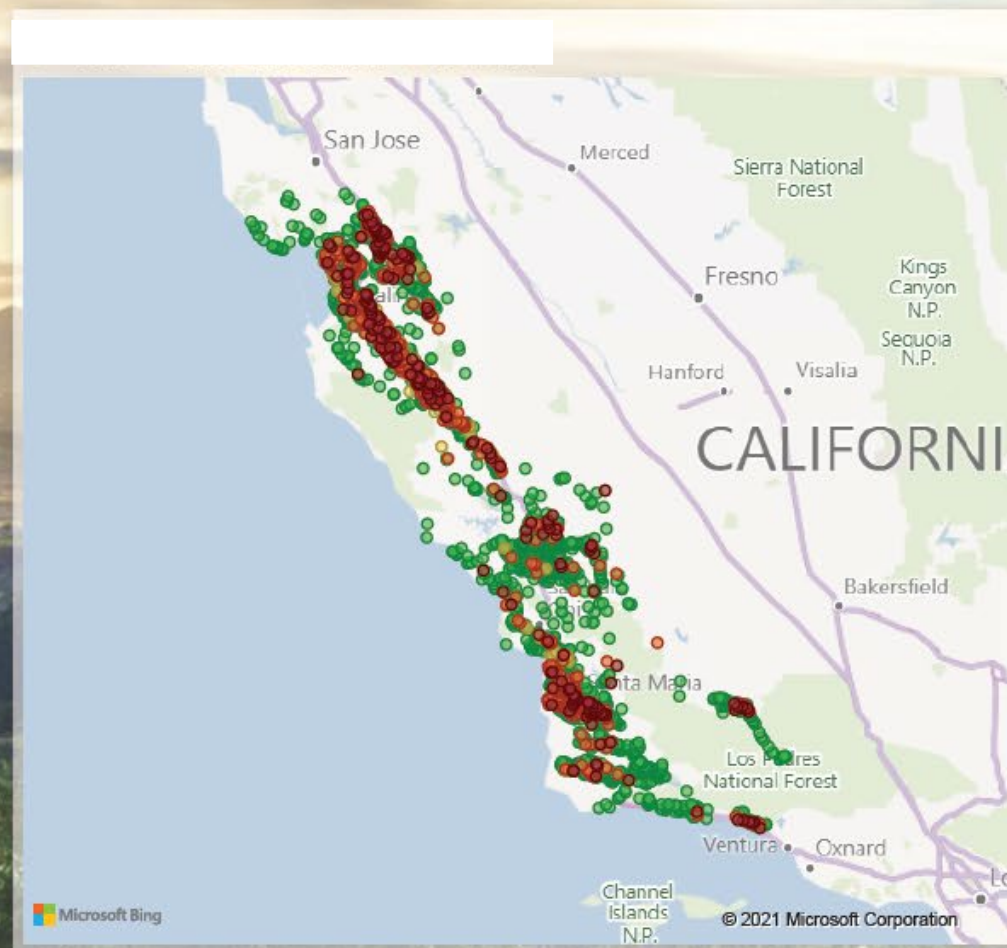
Summary of Nitrate Concentrations

Irrigated Lands Regulatory Program - Central Coast Region

Samples Collected from All Wells

Well Type	Count	# >MCL	% >MCL	Max	Mean
Domestic	4,087	1,135	28%	627.0	11.65
Irrigation	8,050	2,331	29%	627.0	10.50
Total	12,137	3,466	29%	627.0	10.89

Results by Concentration Bin





TNA/INMP MONITORING & REPORTING IN 2022/23

- 2022 – Total Nitrogen Applied (TNA) reporting for those who reported under prev. Ag Orders
- 2023
 - TNA reporting again for those who reported under previous Ag Orders
 - INMP ****monitoring**** for GW Phase 1 ranches, to support report due by March 1st, 2024
 - TNA ****monitoring**** for GW Phase 2 & 3 ranches, to support report due by March 1st, 2024
- 2024
 - INMP report due for GW Phase 1 ranches by March 1st
 - TNA report due for GW Phase 2 & 3 ranches by March 1st



PRIOR YEAR TNA DATA RELATIVE TO LIMITS

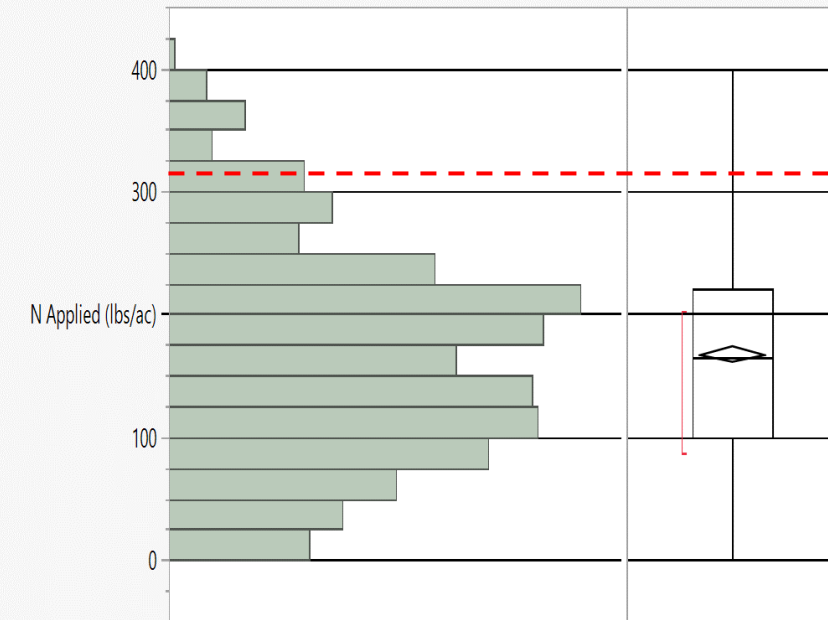
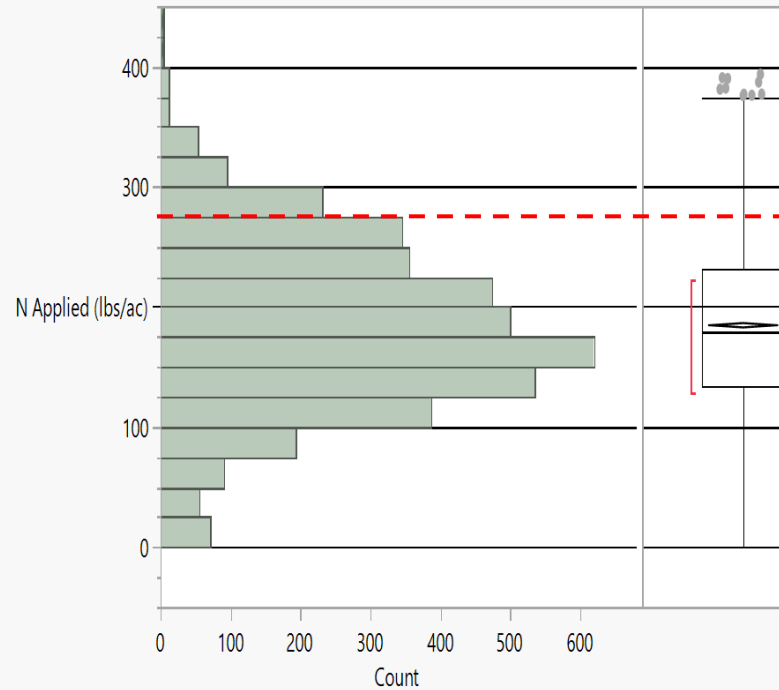
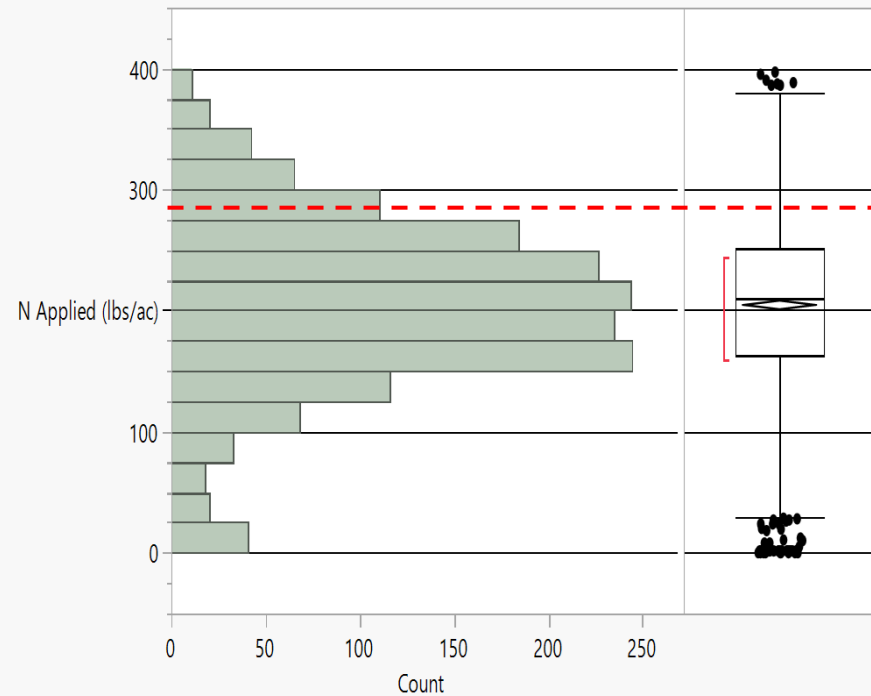
2023 Numeric Limits in Ag Order 4.0

Crop	90 th Percentile A _{FER} =	Compliance Date	85 th Percentile A _{FER} =	Compliance Date
Broccoli	295	12/31/2023	280	12/31/2025
Cauliflower	310		285	
Celery	360		330	
Lettuce	275		255	
Spinach	245		230	
Strawberry	320		295	
All Other Crops	500		480	

BROCCOLI

LETTUCE

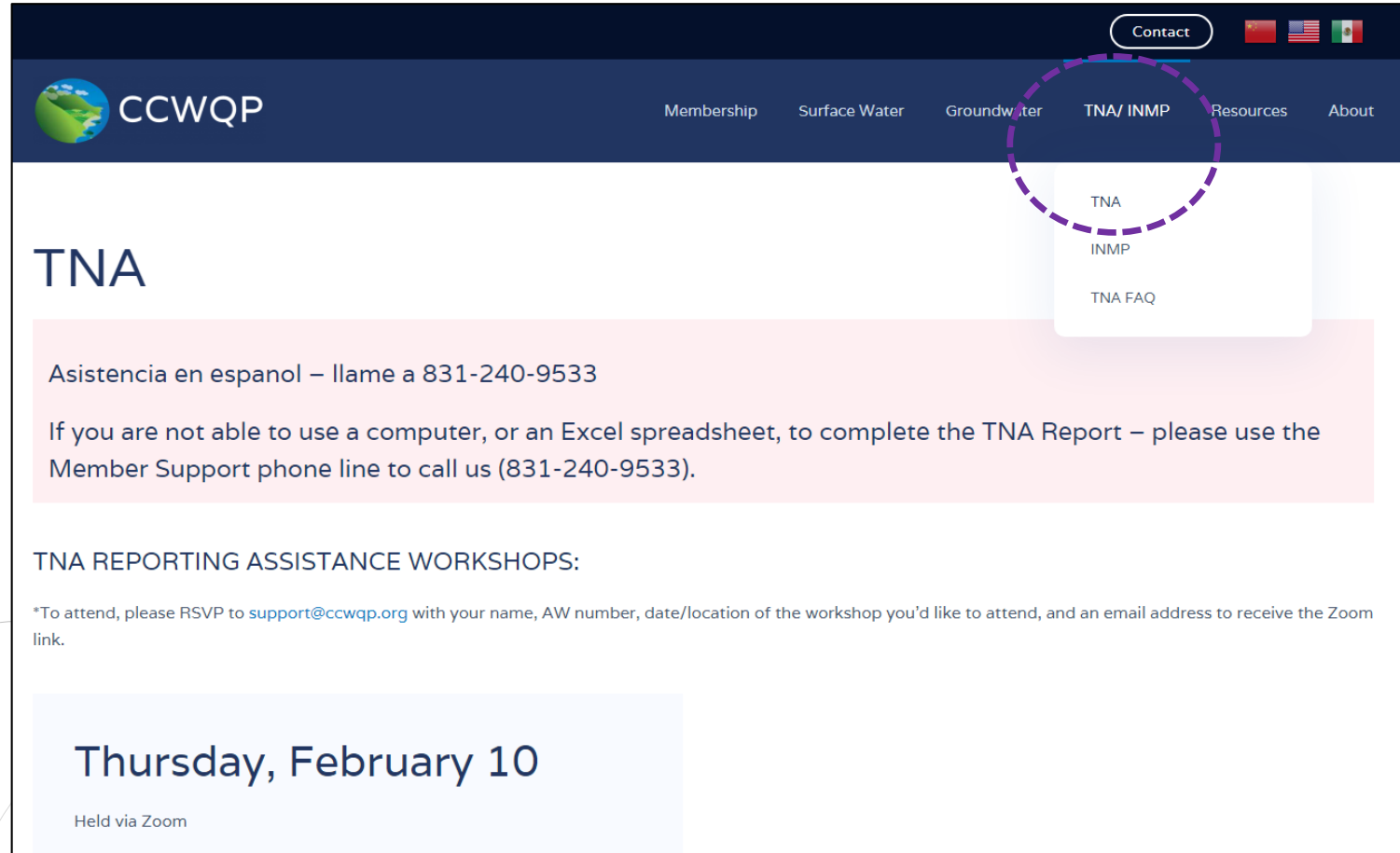
STRAWBERRIES





PRESERVATION, INC. ASSISTANCE WITH TNA & INMP REPORTING

- Held 4 workshops (Dec, 2021 through Feb, 2022)
- Support Line: 831-240-9533, support@ccwqp.org (se habla espanol)
- Advanced Technical Assistance: marco.sigala@sjsu.edu
- Spreadsheet-based reporting forms can “plug in” to existing record-keeping systems



CCWQP

Membership Surface Water Groundwater **TNA/INMP** Resources About

Contact

TNA
INMP
TNA FAQ

TNA

Asistencia en espanol – llame a 831-240-9533

If you are not able to use a computer, or an Excel spreadsheet, to complete the TNA Report – please use the Member Support phone line to call us (831-240-9533).

TNA REPORTING ASSISTANCE WORKSHOPS:

*To attend, please RSVP to support@ccwqp.org with your name, AW number, date/location of the workshop you'd like to attend, and an email address to receive the Zoom link.

Thursday, February 10

Held via Zoom

www.ccwqp.org/tna