SOLANO COUNTY

SPRAY SAFE - FEBRUARY 25,2026

Water Quality and Pesticides

Martha McKeen, Dixon Resource Conservation District

Ulatis Creek

Water Quality: An overview of a management plan (MP) for pyrethroids

- **Why the MP?**
  - ✓ Caused by an exceedance of the water quality objectives set by the CV Regional Water Quality Board.
  - ✓ An exceedance of pyrethroids poses environmental and health risks

- **An MP increases program costs, add additional requirements, such as:**
  - ✓ More water quality monitoring
  - ✓ More farm reporting for pyrethroid users
  - ✓ Additional training for pyrethroid users
  - ✓ Possibility for more restrictions of certain chemicals.

Monitoring for the six pyrethroid pesticides

Starting with the most toxic:

- Bifenthrin*
- Lambda-Cyhalothrin*
- Cypermethrin
- Cyfluthrin
- Esfenvalerate
- Permethrin

*Bifenthrin and Lambda-Cyhalothrin pyrethroids triggered the management plan at Ulatis Creek monitoring site.

Trade Names for the Pyrethroids

Lambda-Cyhalothrin Trade Names*	**Bifenthrin Trade Names***
Besiege	Aceto Bifenthrin 2EC
Endigo ZC	Athena
Grizzly Too	Bifen 2 Ag Gold
Kaiso	Bifenture
Karate	Brigade
Kendo	Brigadier
Lambda-Cy	Capture
Lambdastar	Fanfare
Lamcap	Hero
Paradigm	Sniper
Province	
Silencer	
Voliam Xpress	
Warrior	

*List of some of the most used.

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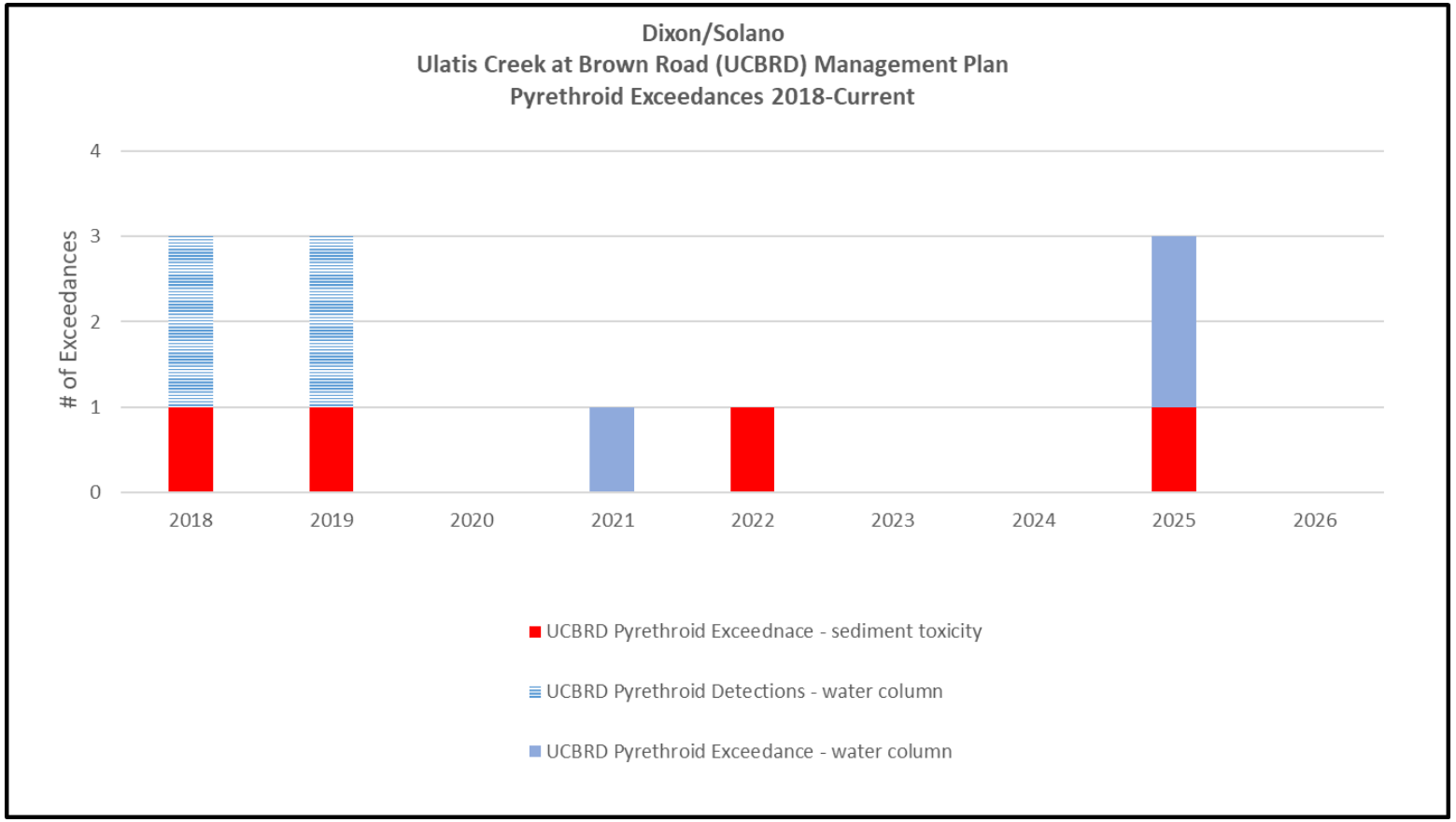
Pyrethroid Exceedances 2018-2026



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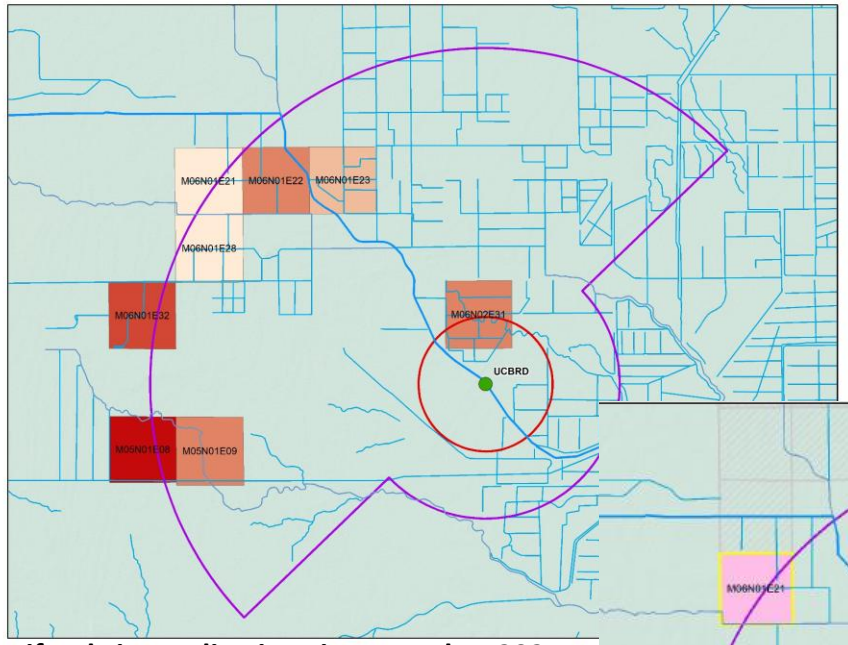
Pyrethroid Exceedances Mapped

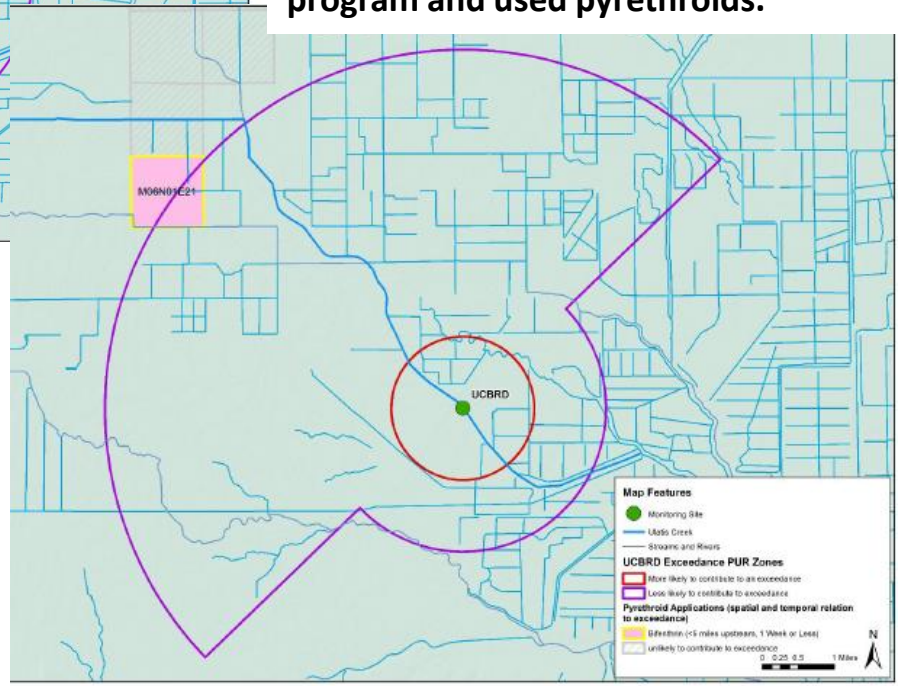


Bifenthrin Applications in December 2024

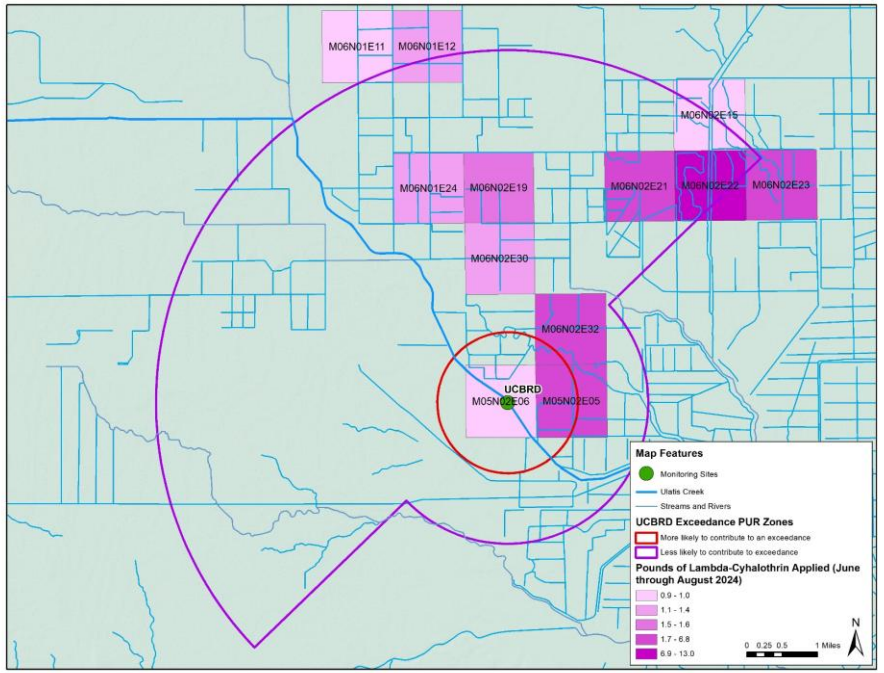
Monitoring Year:
October through September

Note: The December 2024 exceedances count for 2025 monitoring

Highlighted squares are enrolled in the program and used pyrethroids.



Bifenthrin Applications in May 2025



Lambda-Cyhalothrin Applications in December 2024

Mapped Ag application of bifenthrin and lambda-cyhalothrin. Each square represents a township. Township = 36 square miles

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Water Quality Monitoring Schedule for Ulatis Creek

Constituents	Dec. 2025	Mar. 2026	Apr. 2026	May 2026
Field Measured Group	X	X	X	X
E. coli		X		X
Ammonia, Total as N		X		
Dissolved Organic Carbon	X			X
Total Organic Carbon	X			X
TMDL Pyrethroids	X			X
Hyalella azteca (water)	X			X
Hyalella azteca (sediment)			X	
Grain Size (sediment)			X	
Total Organic Carbon (sediment)			X	
completed monitoring	No pyrethroid exceedance in Dec. 2025			
upcoming monitoring				

TMDL - Total Maximum Daily Loads is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant.

Water Quality Monitoring Schedule for 2026

Year 2026 is a non-assessment year which means we only monitor what is specified in the Management Plan (MP) and for single exceedances observed during an assessment year therefore requiring follow-up.

<u>2026 Pyrethroid Monitoring:</u>

December and May - water column

April - sediment toxicity.

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BMP - best management practices:

- Eliminate drift, watch for wind
- Avoid near waterways
- Calibrate machinery, use the correct nozzle size
- Buffer zones
- Avoid sediment and erosion
- Use filter strips, berms, straw wattles, vegetated ditches
- Avoid spraying impervious surfaces
- Use alternate pesticides or methods www.ipm.ucdavis.edu
- Remind all pesticide applicators in your operation to use extreme caution

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Irrigated Lands Program

BMP - best management practices:

- Avoid spraying during a rain event or irrigation
- Use drip or micro-irrigation systems-protect the environment and save water!
  - Keeps pesticides and N fertilizer where you put them.
  - Protects groundwater from N leaching
  - Protects surface water from off-farm discharge/run-off
  - Use less N fertilizer
  - Use less water
  - Save money

Irrigation Distribution Uniformity Testing is available
Contact Kevin Young-Lai, Solano RCD
707-678-1655 x123

Other Resources:
dixonrcd.org/bmp-for-pesticides

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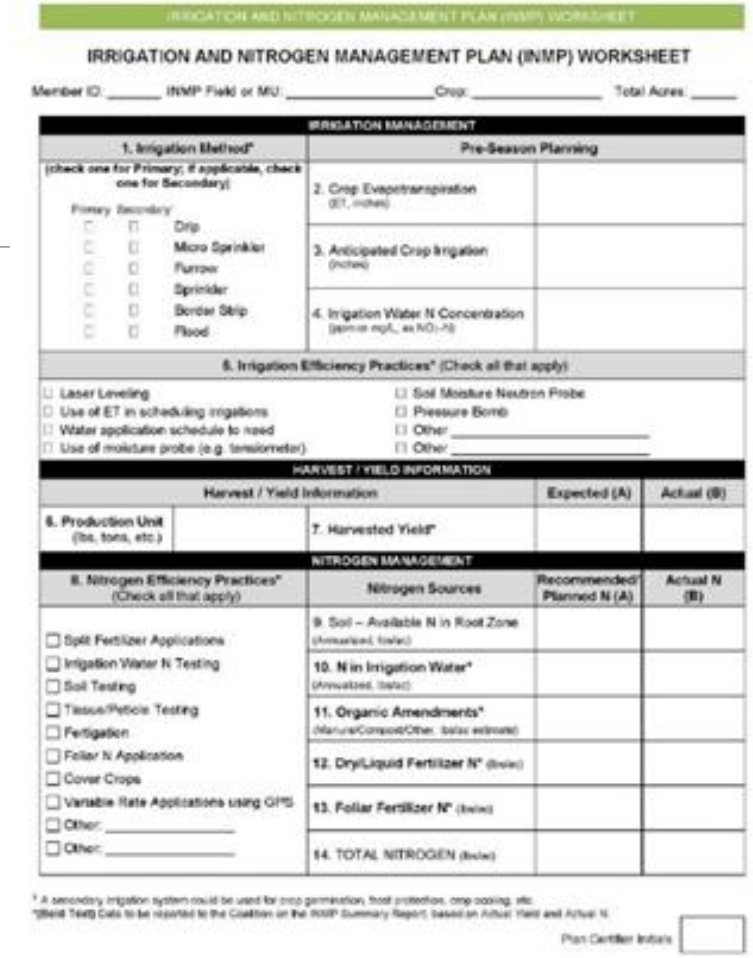
INMP Worksheet

For Irrigation and Nitrogen Management Plans: A tool to help plan your water and nitrogen use.

- How much water does my crop need?
- How much nitrogen does my crop need?

Copies available or find the fillable version at:

dixonrcd.org/forms-checklists



IRRIGATION AND NITROGEN MANAGEMENT PLAN (INMP) WORKSHEET

Member ID: _____ INMP Field or MU: _____ Crop: _____ Total Acres: _____

IRRIGATION MANAGEMENT		
1. Irrigation Method* (check one for Primary; if applicable, check one for Secondary) Primary / Secondary: ☐ ☐ Drip; ☐ ☐ Micro Sprinkler; ☐ ☐ Furrow; ☐ ☐ Sprinkler; ☐ ☐ Border Strip; ☐ ☐ Flood	Pre-Season Planning	
	2. Crop Evapotranspiration (ET, inches)	
	3. Anticipated Crop Irrigation (inches)	
	4. Irrigation Water N Concentration (ppm or mg/L, as NO_3-N)	
5. Irrigation Efficiency Practices* (Check all that apply)		
☐ Laser Leveling; ☐ Use of ET in scheduling irrigations; ☐ Water application schedule to need; ☐ Use of moisture probe (e.g. tensiometer); ☐ Soil Moisture Neutron Probe; ☐ Pressure Bomb; ☐ Other: _____; ☐ Other: _____		

HARVEST / YIELD INFORMATION			
Harvest / Yield Information		Expected (A)	Actual (B)
6. Production Unit (lbs, tons, etc.)		7. Harvested Yield*	

NITROGEN MANAGEMENT			
8. Nitrogen Efficiency Practices* (Check all that apply)	Nitrogen Sources	Recommended/ Planned N (A)	Actual N (B)
☐ Split Fertilizer Applications; ☐ Irrigation Water N Testing; ☐ Soil Testing; ☐ Tissue/Petiole Testing; ☐ Fertigation; ☐ Foliar N Application; ☐ Cover Crops; ☐ Variable Rate Applications using GPS; ☐ Other: _____; ☐ Other: _____	9. Soil – Available N in Root Zone (Annualized, lbs/ac)		
	10. N in Irrigation Water* (Annualized, lbs/ac)		
	11. Organic Amendments* (Manure/Compost/Other, lbs/ac estimate)		
	12. Dry/Liquid Fertilizer N* (lbs/ac)		
	13. Foliar Fertilizer N* (lbs/ac)		
	14. TOTAL NITROGEN (lbs/ac)		

* A secondary irrigation system could be used for crop germination, frost protection, crop cooling, etc.
*(Blank Text) Data to be reported to the Coalition on the INMP Summary Report, based on Actual Yield and Actual N

Plan Certifier Initials: ☐

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Irrigated Lands Program

Contact Information

For information about the Irrigated Lands Regulatory Program:

Martha McKeen, Program Coordinator, Dixon Resource Conservation District

martha-mckeen@dixonrcd.org

707-678-1655 ext. 103

Resources:

- Scan QR code for the Dixon RCD website: dixonrcd.org

- Dixon RCD, Best Management Practices for pesticides page: dixonrcd.org/bmp-for-pesticides
- Water Board's Irrigated Lands page: waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/
- Sacramento Valley Water Quality Coalition website: svwqc.org/