

# Dry Creek

APRIL 2024

## Summary of 2022 Surface Water Monitoring Program Results



In 2022, Washington State Department of Agriculture (WSDA) monitored 17 sites in Washington. Dry Creek was one of three monitoring sites located in Whitman County.

Samples were analyzed at the Manchester Environmental Lab, Port Orchard, Wash.

WSDA compares detected pesticide concentrations to WSDA assessment criteria, which are half of state and federal water quality criteria. Each pesticide has its own assessment criteria, based on its toxicity to aquatic animals, insects, and plants.

### Site information:

**Years sampled:** 2020 – present

**Sampling dates:**

13 weeks; March 28 – September 12

**Water testing:**

Samples were tested for 153 current and legacy chemicals (55 herbicides, 48 insecticides, 21 fungicides, 20 pesticide degradates, 5 legacy chemicals, 1 antimicrobial, 1 insect repellent, 1 synergist, and 1 wood preservative).

Products listed are for descriptive purposes only and do not imply endorsement by the author or the Department of Agriculture.



Washington  
State Department of  
Agriculture

NATURAL RESOURCES AND AGRICULTURAL SCIENCES

*The Palouse Conservation District continued to sample Dry Creek, near Colfax, in partnership with WSDA. Dry Creek flows roughly 18 miles before entering the Palouse River. The watershed was chosen as a study region due to its dryland farming practices and its location within the state.*

### Results:

- There were 43 unique chemicals detected with a total of 243 detections in Dry Creek. Of these, 13 detections were above WSDA assessment criteria.
- When multiple pesticides are detected simultaneously, the harmful effects can combine; multiple pesticides were detected every week Dry Creek was sampled. Between 10 and 32 pesticides were detected at each sampling visit.
- WSDA identifies some pesticides as Pesticides of Concern (POC) when they have been detected above WSDA's assessment criteria and above established detection frequencies.

### Watershed-specific POCs in Dry Creek:

#### ICONS FOR ENVIRONMENTAL HAZARDS LISTED ON PESTICIDE LABELS



#### Bifenthrin — Insecticide



- *Common trade name:* Sniper
- *Example use within watershed:* legumes
- Bifenthrin has extremely low solubility in water. Contamination is likely from bifenthrin bound to the soils in runoff.
- Also detected in six other monitored watersheds and a POC in all of them.

#### Chlorpyrifos — Insecticide



- *Common trade names:* Lorsban, Pilot, Vesper
- *Example use within watershed:* mosquito control
- As of early 2022, chlorpyrifos has been banned for use on food and feed commodities. It can still be applied to registered non-food commodities.
- Also detected in five other monitored watersheds and a POC in four of them.

#### Imidacloprid — Insecticide



- *Common trade names:* Admire Pro, Gaucho, Merit
- *Example uses within watershed:* barley, legumes, wheat
- Also detected in nine other monitored watersheds and a POC in all of them.

#### Linuron — Herbicide



- *Common trade names:* Linex 4L, Lorox
- *Example uses within watershed:* legume, right-of-way, wheat
- This was the only monitored watershed where this chemical was a POC.

#### Metsulfuron-methyl — Herbicide



- *Common trade names:* Cimarron, Plotter, MSM
- *Example uses within watershed:* barley, fallow, wheat
- Also detected in two other monitored watersheds, but this was the only one where this chemical was a POC.

#### Pyroxasulfone — Herbicide



- *Common trade name:* Zidua
- *Example uses within watershed:* fallow, legumes, wheat
- This was the only monitored watershed where this chemical was a POC.

The calendar at right shows the concentration in µg/L and date sampled of each watershed POC detected. This calendar does not include all the pesticides WSDA found during the growing season. The “-” identifies data that could not be collected or analyzed. Detected concentrations that exceed WSDA’s assessment criteria have a higher potential to cause harm to aquatic ecosystems. Chlorpyrifos and pyoxasulfone were not detected in 2022, however, they were still considered watershed POCs because of their exceeding detections in recent years at this site.

[ \* H: Herbicide; I: Insecticide ]  
exceeds assessment criteria

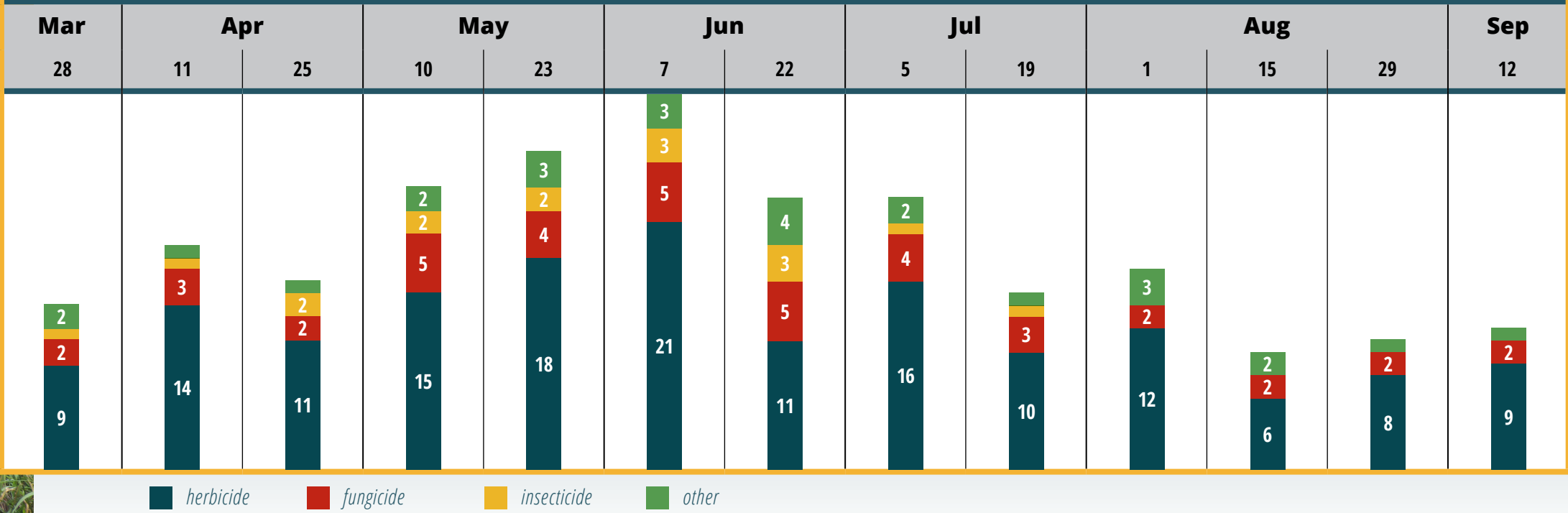
Watershed Pesticides of Concern Detected and their Corresponding Sampling Dates and Concentrations

Month		Mar	Apr		May		Jun		Jul		Aug			Sep
Day of the Month	Use*	28	11	25	10	23	7	22	5	19	1	15	29	12
Bifenthrin	I						0.005							
Imidacloprid	I		0.011	0.014	0.032	0.016	0.071	0.022						
Linuron	H				0.201	0.075	0.198							
Metsulfuron-methyl	H					0.182								
Suspended sediment conc. (mg/L)		8	6	8	16	14	122	30	26	11	20	11	9	7
Streamflow (cubic ft/sec)		9.4	11.6	9.6	8.3	5.6	11.3	13.1	4.8	1.4	-	0.4	0.3	0.5
Precipitation (total in/week)		0.10	0.45	0.24	0.97	0.27	1.37	0.70	0.56	0.00	0.00	0.41	0.00	0.00

The graph at right shows the total number of detections per sampling visit in each pesticide category. The category ‘other’ includes legacy, degradates, and additional pesticide-related chemicals. Note that the number of detections between categories cannot be directly compared due to the different number of chemicals in each category and variability in analysis methods used.



Total Number of Detections per Sampling Event by Pesticide Category



### Recommendations:

#### Make use of natural protections

- Use buffers, filter strips, sediment basins, ground cover, and setbacks.
- Maintain vegetation along creeks and take care during spring time applications before vegetation along streams leaves out.

#### Be informed

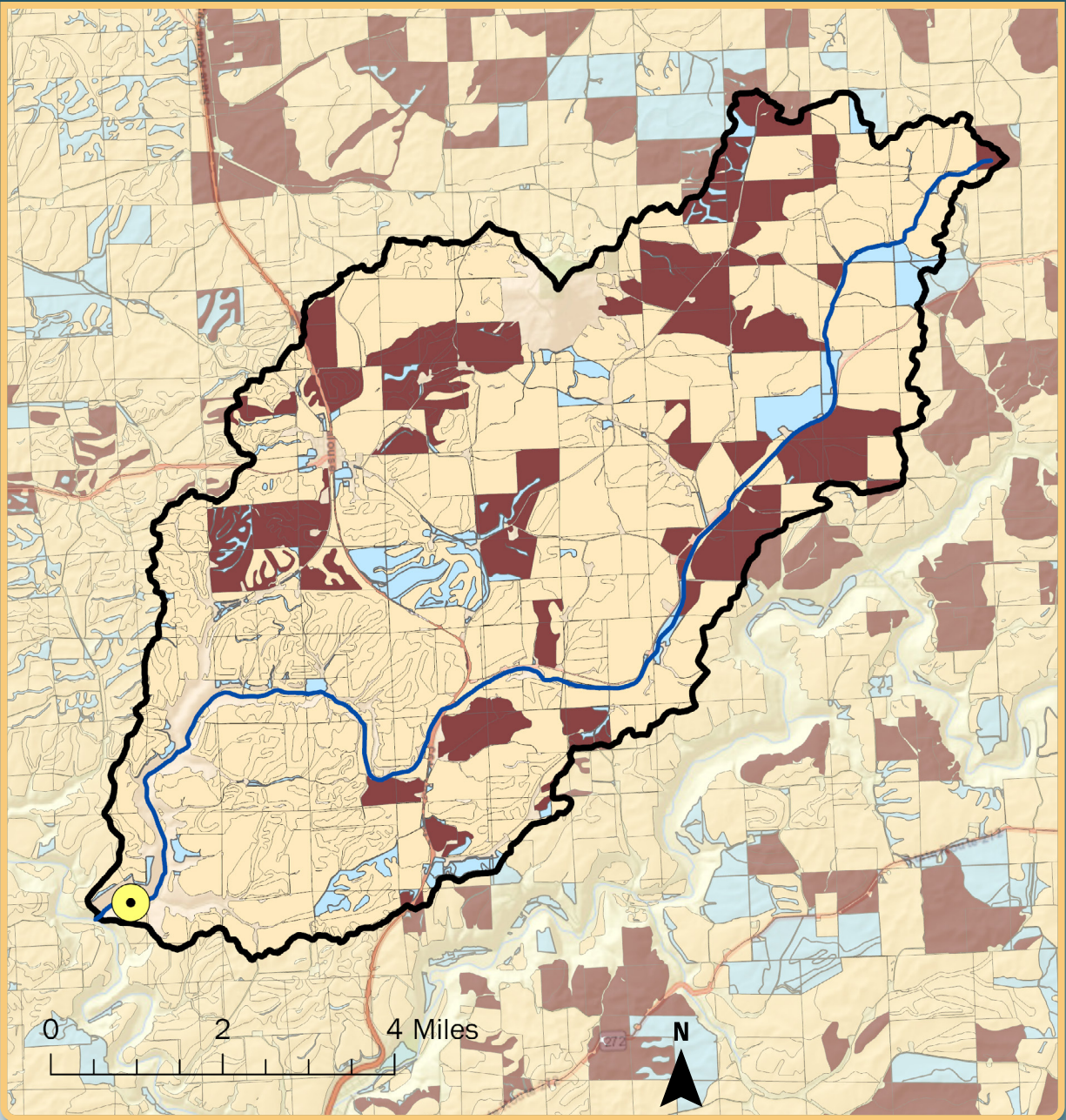
- Read and follow pesticide label directions.
- Check the weather forecast to reduce the chances of drift or runoff.
- Review WSDA’s Pesticides of Concern and choose less-toxic pesticides when possible.

#### Care for your equipment and products

- Calibrate, maintain, and inspect application equipment.
- Properly dispose of all unneeded pesticides. Visit [agr.wa.gov/wastepesticide](http://agr.wa.gov/wastepesticide) to learn about waste pesticide collection events.

Please see [agr.wa.gov/AgScience](http://agr.wa.gov/AgScience) for more information.





#### Dry Creek crop groupings

acres

<span style="display:inline-block; width:15px; height:15px; background-color:tan; border:1px solid black;"></span> <b>Cereal Grain</b>	23,830
<span style="display:inline-block; width:15px; height:15px; background-color:darkred; border:1px solid black;"></span> <b>Vegetable</b>	6,468
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> <b>Other</b>	2,107

Sampling Location

Dry Creek

Dry Watershed

Total Agriculture 32,405 acres

Total Non-Agriculture 3,442 acres

**Watershed Total 35,847 acres**

To view mapped crop groups at the field scale, download the WSDA Agricultural Land Use data or view the interactive web map here:  
<https://agr.wa.gov/departments/land-and-water/natural-resources/agricultural-land-use>