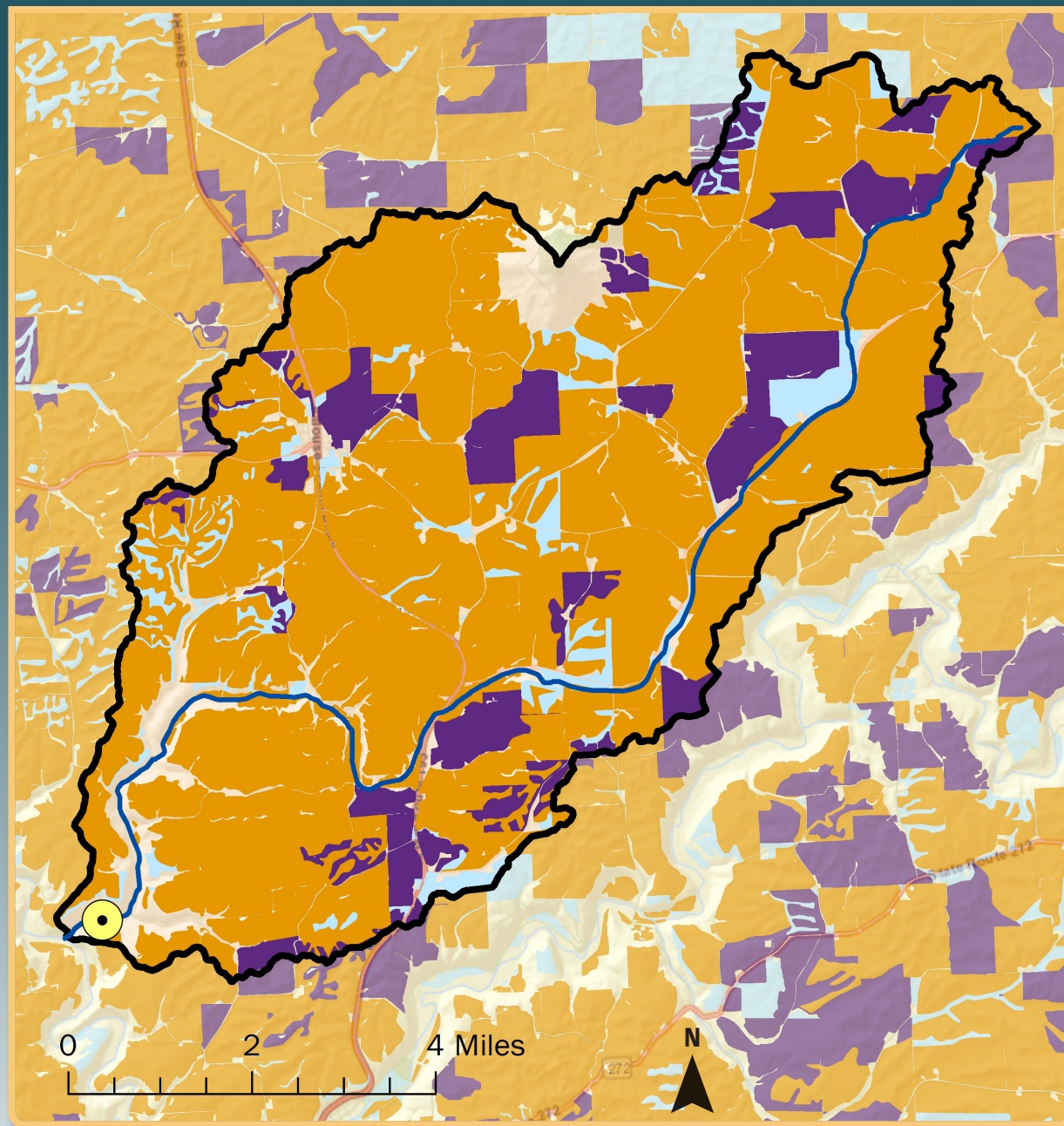


Dry Creek

Summary of 2020 Surface Water Monitoring Program Results



Dry Creek crop groupings	acres
Other	1,865
Cereal Grain	25,901
Vegetable	4,583
Total Agriculture	32,349 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>



In an effort to expand sampling across Eastern Washington, WSDA partnered with the Palouse Conservation District to monitor Dry Creek, near Colfax, in the 2020 sampling season. 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. A wildfire in September burned part of the watershed upstream of the monitoring site although no significant effects were observed in the monitoring results due to that event.

Site information:

In 2020, Washington State Department of Agriculture (WSDA) monitored 16 sites in Washington. Dry Creek was the only monitoring site located in Whitman County.

Years sampled: 2020 – present

Sampling dates:

17 weeks, March 16 and June 15 – October 27

- Although staff typically collect samples during the spring and summer seasons when higher pesticide usage is expected, the sampling schedule was shifted three months later due to COVID-19 restrictions.

Water testing:

- Samples were analyzed at the Manchester Environmental Lab, Port Orchard, Wash.
- Samples were tested for 169 current and legacy chemicals (61 insecticides, 60 herbicides, 23 fungicides, 20 pesticide degradates, 2 synergists, 1 antimicrobial, 1 insect repellent, and 1 wood preservative)
- 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.

Results:

- There were 43 unique chemicals detected with a total of 324 detections in Dry Creek. Of these, 11 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 4 and 30 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.

Statewide POCs in Dry Creek:

ICONS FOR ENVIRONMENTAL HAZARDS LISTED ON PESTICIDE LABELS

Chlorpyrifos

- Common trade names:** Lorsban, Pilot, Vesper
- Example uses within watershed:** legumes, wheat
- Chlorpyrifos is banned in California, New York, Hawaii, Maryland and the European Union.
- A streamside no-spray buffer zone is required in Washington for chlorpyrifos to protect threatened and endangered Pacific salmon and steelhead.
- Detected at 14 sites in 2020. A watershed POC at six of them.

Imidacloprid

- Common trade names:** Admire Pro, Gaucho, Merit
- Example uses within watershed:** barley, legumes, wheat
- Detected at 13 sites in 2020. A watershed POC at 11 of them.



NATURAL RESOURCES ASSESSMENT SECTION

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

The calendar at right shows the concentration in µg/L and date sampled of each statewide POC. The “-” identifies data that could not be collected or analyzed. This calendar does not include all the pesticides WSDA found during the growing season. Detected concentrations that exceed WSDA’s assessment criteria have a higher potential to cause harm to aquatic ecosystems.

[* I: Insecticide]

exceeds assessment criteria ■

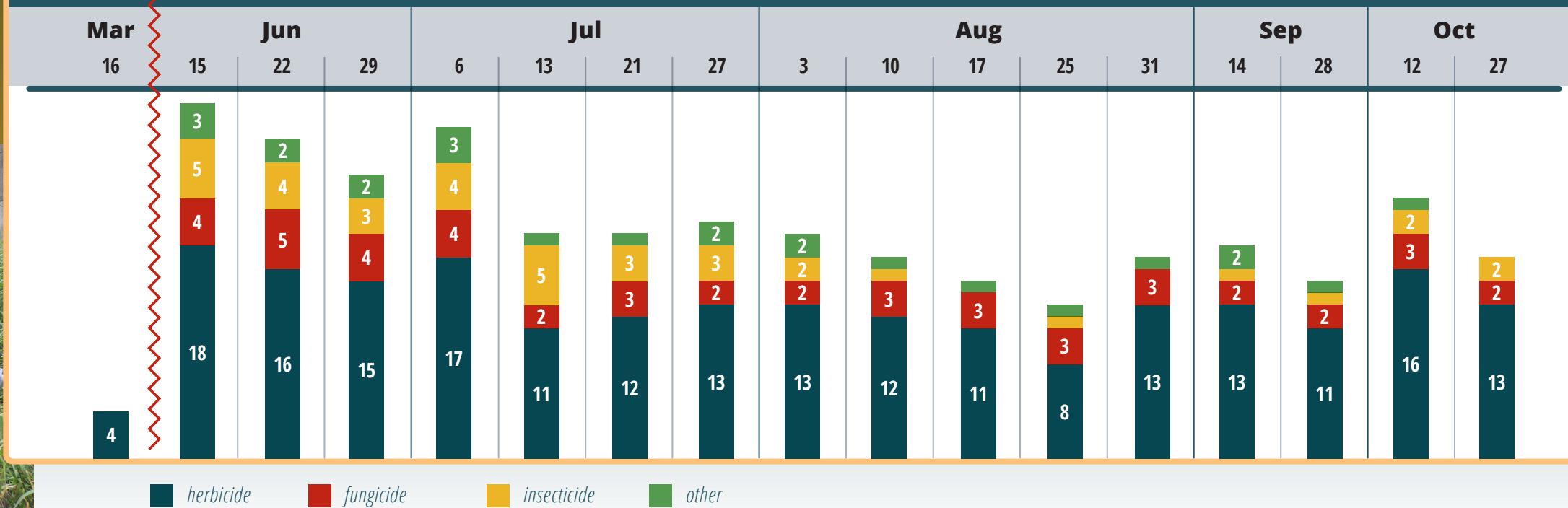
below assessment criteria ■

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

Month Day of the Month	Use*	Mar				Jun				Jul				Aug				Sep		Oct	
		16	15	22	29	6	13	21	27	3	10	17	25	31	14	28	12	27			
Chlorpyrifos	I		0.003	0.001		0.005	0.002														
Imidacloprid	I		0.012	0.009			0.007	0.005	0.007	0.005											
Total suspended solids (mg/L)		3	15	12	10	8	9	16	8	7	3	4	3	6	6	7	2	1			
Streamflow (cubic ft/sec)		7.4	6.4	3.1	1.9	1.4	1.3	0.7	0.5	0.4	0.4	0.4	0.4	0.5	--	0.9	1.1	1.5			
Precipitation (total in/week)		--	--	--	--	--	0.25	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.11	0.51	0.34			

The graph at right shows the total number of detections per sampling visit in each pesticide category. The category ‘other’ includes 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 to learn about waste pesticide collection events.

Please see agr.wa.gov/AgScience for more information.

