Snipes Creek

Summary of 2021 Surface Water Monitoring Program Results

The irrigation districts periodically release water from the Sunnyside Canal into Spring Creek, a Snipes Creek tributary, and the Roza Canal into Snipes Creek during the irrigation season. The release of water from either canal influences the stream level downstream at the sampling location on Snipes Creek. Staff have observed fall Chinook salmon spawning at the monitoring site.

In 2021, Washington State Department of Agriculture (WSDA) monitored 18 sites in Washington. Snipes was the only monitoring site located in Benton County.

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

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: 2016 – present

Fish habitat: Spring and fall Chinook, and coho salmon; and summer steelhead trout (SalmonScape: apps.wdfw. wa.gov/salmonscape)

Sampling dates:
17 weeks; March 22 – July 12

Water testing:
 Samples were tested for 170 current and legacy chemicals (59 insecticides, 58 herbicides, 23 fungicides, 19 pesticide degradates, 6 legacy chemicals, 2 synergists, 1 antimicrobial, 1 insect repellent, and 1 wood preservative)

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Results:

- There were 46 unique chemicals detected with a total of 302 detections in Snipes Creek. Of these, 38 detections were above WSDA assessment criteria.
- When multiple pesticides are detected simultaneously, the harmful effects can combine; multiple pesticides were detected every week Snipes Creek was sampled. Between 13 and 22 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 Snipes Creek:

ICONS FOR ENVIRONMENTAL HAZARDS LISTED ON PESTICIDE LABELS

potential for spray drift | potential for runoff | potential to leach into groundwater | highly toxic to bees | toxic to aquatic invertebrates | toxic to fish | toxic to birds | toxic to mammals

Chlorpyrifos - Insecticide
- *Common trade names:* Lorsban, Pilot, Vesper
- *Example uses within watershed:* grapes (wine and juice), orchard, wheat
- 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.
- A streamside no-spray buffer zone is required in Washington for chlorpyrifos to protect threatened and endangered Pacific salmon and steelhead.
- Also detected in 11 other sites and a POC in all but one of them.

Diuron - Herbicide
- *Common trade names:* Direx, Karmex
- *Example uses within watershed:* grapes (wine and juice), orchard, right-of-way, wheat
- This chemical can transport into the environment via drift or runoff and can contaminate groundwater. Diuron has been found in groundwater in Washington State.
- Also detected in nine other sites and a POC in six of them.

Imidacloprid - Insecticide
- *Common trade names:* Admire Pro, Gaucho, Merit
- *Example uses within watershed:* grapes (wine and juice), hops, orchard, wheat, residential
- Also detected at 13 other sites and a POC in 10 of them.

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 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.

[* H: Herbicide I: Insecticide]

exceeds assessment criteria ▢

below assessment criteria ▢

Watershed Pesticides of Concern Detected and their Corresponding Samp

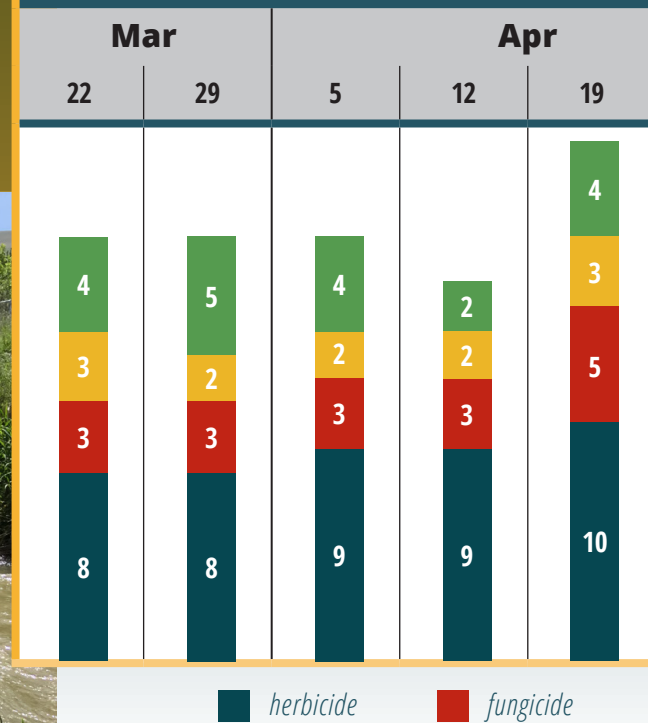| Month ▶		Mar		Apr		
Day of the Month ▶	Use*	22	29	5	12	1
Chlorpyrifos	I	0.036	0.107	0.033	0.019	0.
Diuron	H	0.442	1.560	0.185	0.122	0.
Imidacloprid	I					
Suspended sediment concentration *(mg/L)*		-	-	-	-	3
Streamflow *(cubic ft/sec)*		-	-	39.5	-	43
Precipitation *(total in/week)*		0.04	0	0	0	

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 Ev

Mar		Apr		
22	29	5	12	19

Bar chart values:
- 22: 4 (green), 3 (yellow), 3 (red), 8 (teal)
- 29: 5 (green), 2 (yellow), 3 (red), 8 (teal)
- 5: 4 (green), 2 (yellow), 3 (red), 9 (teal)
- 12: 2 (green), 2 (yellow), 3 (red), 9 (teal)
- 19: 4 (green), 3 (yellow), 5 (red), 10 (teal)

■ herbicide   ■ fungicide

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 leafs 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.

	19	27	May 3	May 10	May 17	May 24	Jun 1	Jun 7	Jun 14	Jun 21	Jun 28	Jul 6	Jul 12
	0.010	0.006	0.005	0.005	0.004	0.004	0.004	0.004		0.004			
	0.106	0.037	0.026	0.031	0.016	0.015	0.019	0.025	0.009	0.019	0.006		
							0.011			0.010	0.006		
	35	39	33	38	36	44	12	33	24	8	5	63	20
	3.3	78.0	-	57.7	50.9	55.4	22.2	-	-	19.7	10.8	-	28.7
	0	0	0	0	0	0.12	0	0	0	0.12	0	0	0

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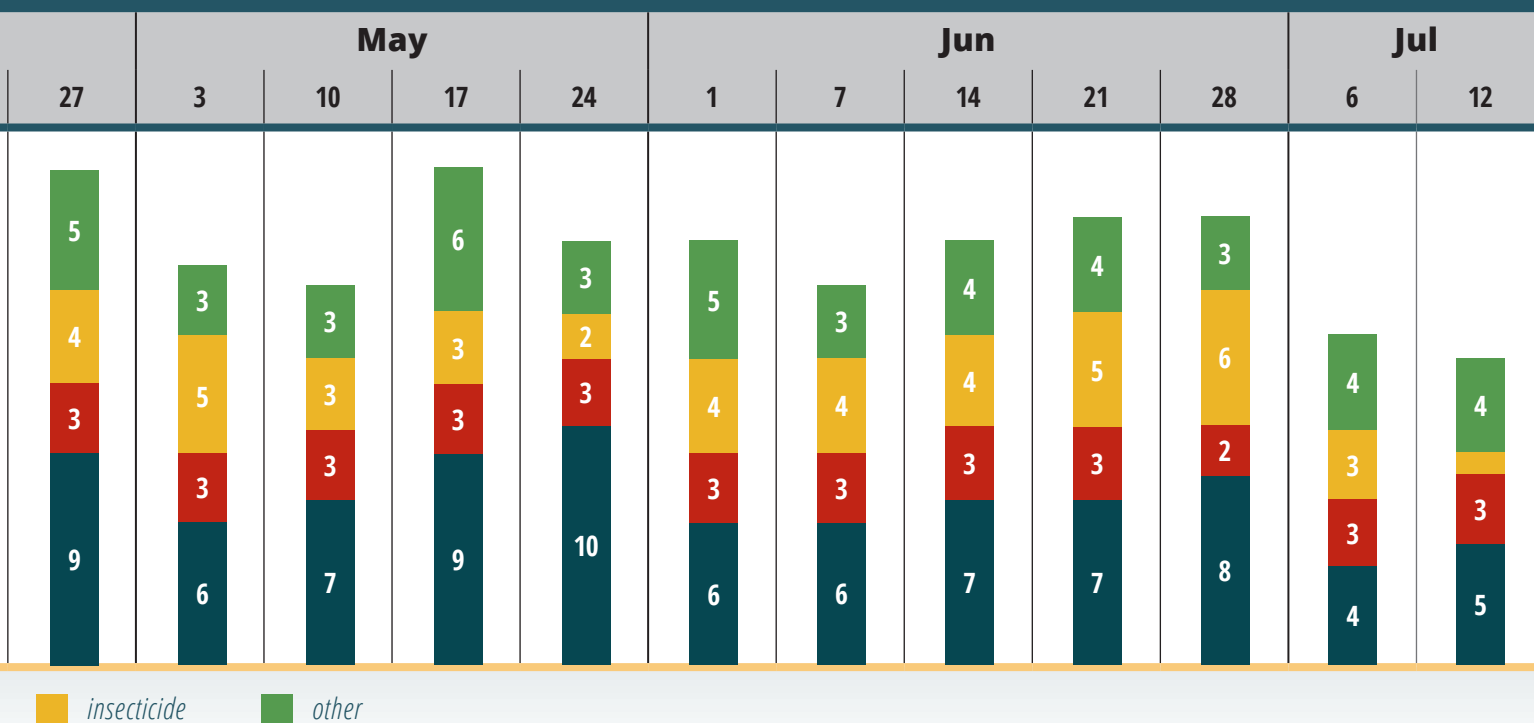
Please see agr.wa.gov/AgScience for more information.

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.

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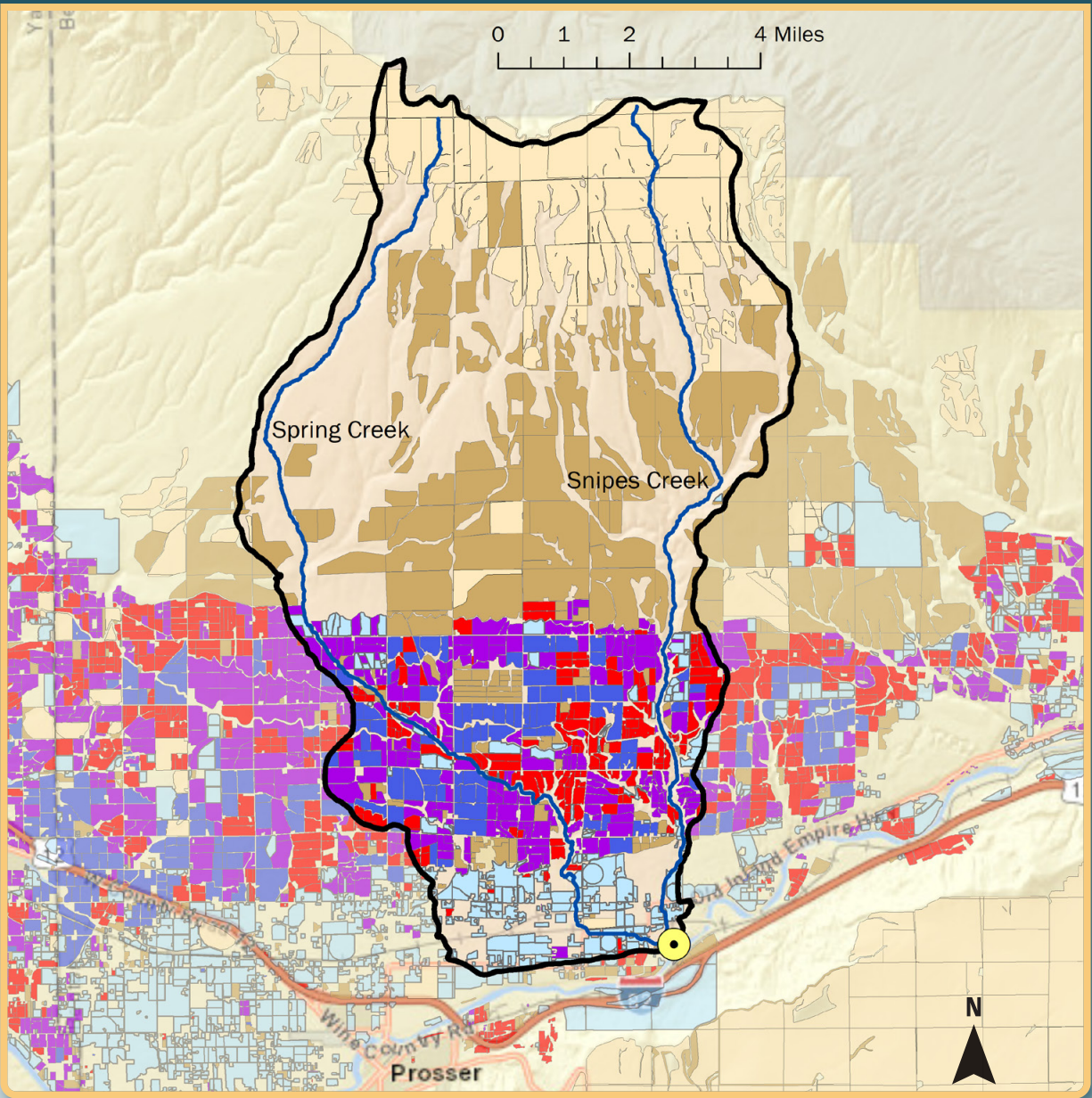
Snipes Creek crop groupings	acres
Other	2,600
Cereal Grain	7,759
Herb	2,564
Orchard	2,278
Fallow / CRP	12,306
Vineyard	3,949

Sampling Location
Creeks
Snipes Watershed

Total Agriculture	31,456	acres
Watershed Total	**50,266**	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