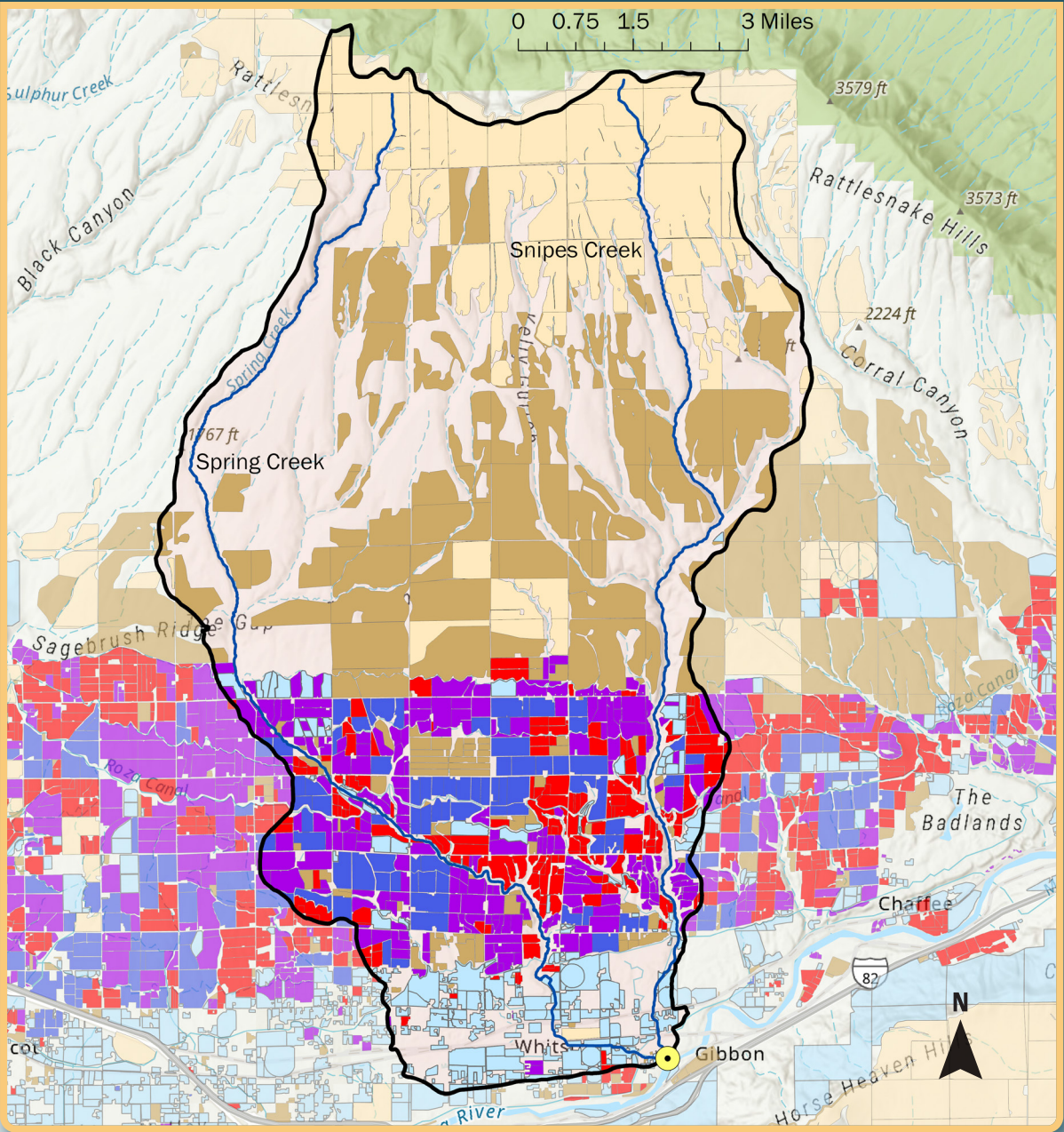


Snipes Creek

MAY 2024

Summary of 2022 Surface Water Monitoring Program Results



Snipes Creek crop groupings | acres

Cereal Grain	8,399
Herb	2,585
Orchard	2,278
Fallow / CRP	11,722
Vineyard	3,949
Other	2,580

● Sampling Location

— Creeks

▭ Snipes Creek Watershed

Total Agriculture	31,513	acres
Total Non-Agriculture	18,753	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>



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 2022, Washington State Department of Agriculture (WSDA) monitored 17 sites in Washington. Snipes Creek 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; rainbow and summer steelhead trout
(SalmonScape: apps.wdfw.wa.gov/salmonscape)

Sampling dates:
17 weeks; March 21 – August 8

Water testing:
Samples were tested for 150 current and legacy chemicals (53 herbicides, 48 insecticides, 21 fungicides, 19 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.



Results:

- There were 55 unique chemicals detected with a total of 266 detections in Snipes Creek.
 - Of these, 22 detections were above WSDA assessment criteria. Roughly 41% (9 detections) of exceeding detections were from DDT and its degradates.
- 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: mosquito control, road medians
- 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.

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 11 other monitored watersheds and a POC in six of them.

Fenvalerate — Insecticide

- Common trade names: S-fenvalostar, Asana XL
- Example uses within watershed: orchard, livestock operations, residential
- This was the only monitored watershed where this chemical was a POC.

gamma-Cyhalothrin — Insecticide

- Common trade names: Declare, Scion
- Example uses within watershed: orchard, wheat, pasture
- Also detected in six other monitored watersheds and a POC in all 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 in nine other monitored watersheds and a POC in all of them.

Permethrin — Insecticide

- Common trade names: Fastac CS, Permanone
- Example uses within watershed: building perimeter, livestock
- This chemical was also a watershed POC in one other monitored watershed.

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

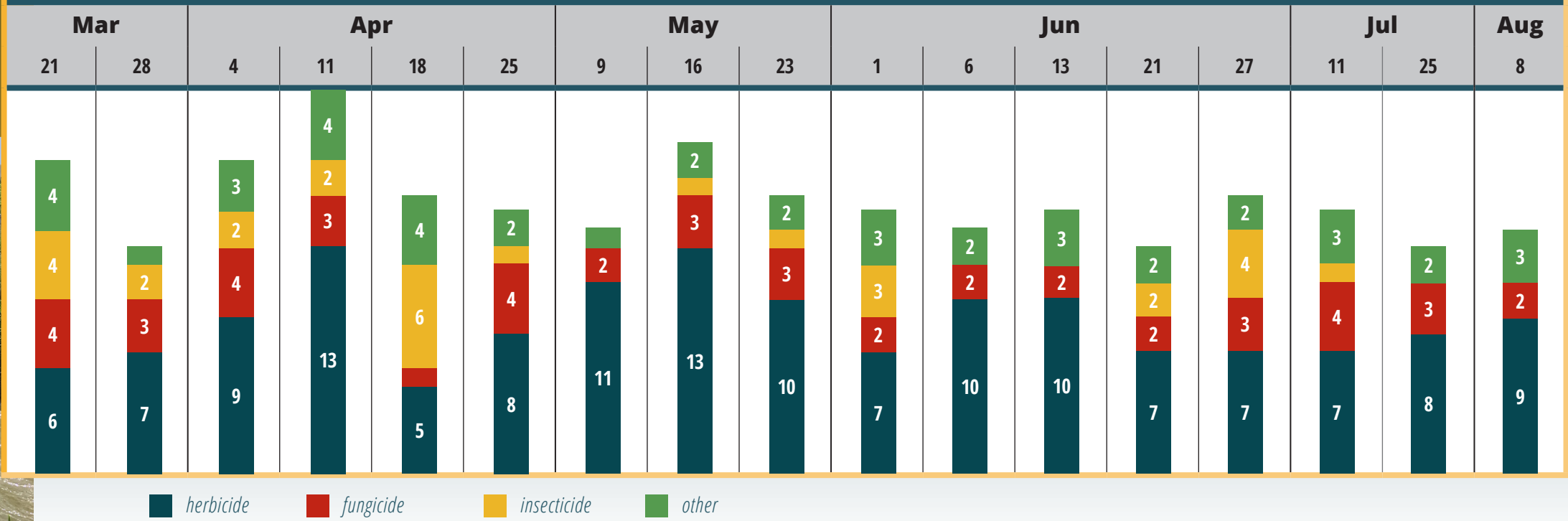
Watershed Pesticides of Concern Detected and their Corresponding Sampling Dates and Concentrations

Month ▶		Mar		Apr				May			Jun					Jul		Aug
Day of the Month ▶	Use*	21	28	4	11	18	25	9	16	23	1	6	13	21	27	11	25	8
Chlorpyrifos	I	0.035	0.009	0.002	0.002													
Diuron	H	0.087	0.084	1.020	0.774	0.020	0.052	0.040	0.041	0.108	0.018	0.032	0.040	0.011	0.012	0.005	0.005	
Fenvalerate	I					0.002												
gamma-Cyhalothrin	I					0.002									<0.001			
Imidacloprid	I										0.005							
Permethrin	I														0.008			
Suspended sediment concentration (mg/L)		52	24	23	212	51	13	17	18	10	10	69	36	14	29	26	18	17
Streamflow (cubic ft/sec)		-	-	48.7	-	68.5	51.2	63.3	63.2	18.8	15.6	-	-	21.2	38.9	71.7	52.2	54.9
Precipitation (total in/week)		0.25	0.09	0.09	0.01	0.71	0.50	0.62	0.30	0.07	0.28	0.27	0.93	0.05	0.00	0.05	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 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.

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.