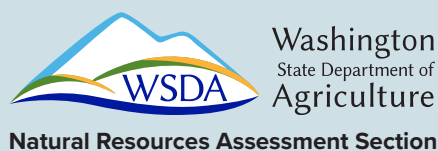


Snipes Creek

Summary of 2017 Surface Water Monitoring Program Results | November 2018



The Washington State Department of Agriculture (WSDA) has monitored pesticide concentrations in surface water throughout the state since 2003. WSDA staff take surface water samples during the typical pesticide use season (March - September). In 2017, WSDA monitored 16 sites in Washington, 1 of which was in Benton County. State and federal agencies use this data to evaluate water quality and make exposure assessments for pesticides registered for use in Washington State.



Watershed and site information

Sampling history: 2016 - present

Watershed area: 50,300 acres (~79 square miles)

Area in agricultural use: 31,100 acres (~62% of total watershed acreage)

Main crops: Wheat, wine and juice grapes, hops, and apples

Fish habitat: Chinook salmon, coho salmon, and steelhead (Washington State Department of Fish and Wildlife SalmonScape: apps.wdfw.wa.gov/salmonscape/)

Sampling dates: 19 sampling events, March 21st - August 28th

Water testing:

- 144 chemicals (current and legacy insecticides, herbicides, fungicides, rodenticides, pesticide degradates, and other pesticide products)
- Streamflow and total suspended solids
- Air and water temperature measured every 30 minutes
- Sample analysis at Manchester Environmental Lab, Port Orchard, Washington

Notes:

- The Snipes Creek site is just below the confluence of Spring Creek and Snipes Creek.
- Unseasonably high streamflow was observed during the spring in Snipes Creek.

Results and Conclusions

- There were 56 pesticide detections in Snipes Creek. Of these, 4 were above WSDA's assessment criteria.
- Out of all the chemicals tested for, there were 6 types of insecticides, 6 herbicides, 5 fungicide, 1 degradate, and 1 other pesticide-related chemical detected.
- WSDA identifies a pesticide as a Pesticide of Concern (POC) when it has been found somewhere in the state above WSDA's assessment criteria in recent years. Carbaryl, chlorpyrifos, dacthal (DCPA), and diuron are POCs that were detected in Snipes Creek.
- Every detection of chlorpyrifos at this site was higher than WSDA's assessment criteria.
- Chlorpyrifos was only detected during the first few weeks of spring.
- Chlorpyrifos has also been detected in Snipes Creek in previous years at concentrations known to negatively affect aquatic life.

Recommendations

- **Make use of natural protections**
 - Use buffers, filter strips, sediment basins, ground cover, and setbacks.
- **Be informed**
 - Read and follow pesticide label directions, and be familiar with active ingredients.
 - Plan applications using the weather forecast to reduce the chances of drift or runoff.
 - Review WSDA's POCs and choose less-toxic pesticides when possible.
- **Care for your equipment and products**
 - Calibrate, maintain, and inspect application equipment regularly.
 - Properly dispose of all unneeded pesticides. Visit agr.wa.gov/wastepesticide to learn about waste pesticide collection events.

The calendar below shows the concentration in µg/L and date sampled of each WSDA Pesticide of Concern detected. This calendar does not include all the pesticides WSDA found during the growing season. The colors correspond to the risk each pesticide's detected concentration represents to an aquatic ecosystem. Detected concentrations that exceed WSDA's assessment criteria have a higher potential to cause harm to aquatic ecosystems. These assessment criteria are specific to each individual pesticide and are determined by applying a safety factor to state and federal water quality standards and criteria. The “-” signifies a sample or measurement that was not collected.

Washington State's Pesticides of Concern Detected and their Corresponding Sampling Dates and Concentrations																			
Month		Mar			Apr			May			Jun			Jul			Aug		
Day of the Month		Use*																	
Carbaryl		I-C																	
Chlorpyrifos		I-OP			0.034 0.118 0.080 0.049			0.026											
Dacthal (DCPA)		H			0.012			0.013											
Diuron		H			0.192 0.078			0.039			0.011 0.007								
Total Suspended Solids (mg/L)		19.0 24.0			58.0 28.0 21.0 272.0 23.0 44.0			21.0 28.0 24.0 28.5			29.0 16.0 25.0						26.0 30.0 19.0		
Streamflow (cubic ft./sec.)		4.0 12.9			- - 84.3 87.0 -			43.6 45.2 40.6 35.8			84.2 23.3 31.6						44.6 76.1 54.4		
Precipitation (total in./week)		0.35 0.35			0.17 0.11 0.46 0.50 0.13			0.28 0.32 0 0.03			0 0.09 0						0 0.07 0		

Exceeds Assessment Criteria Below Assessment Criteria
(* H: Herbicide, I: Insecticide, C: Carbamate, OP: Organophosphate)

The graph below shows the total number of detections per sampling event in each pesticide category. The category 'other' includes wood preservatives, an insect repellent, synergists, and antimicrobials.

