Burnt Bridge 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 Clark County. State and federal agencies use this data to evaluate water quality and make exposure assessments for pesticides registered for use in Washington State.

The Watershed and Site Information:

**Sampling history:** New site as of 2017
**Watershed area:** 16,800 acres (~26 square miles)
**Area in agricultural use:** 500 acres (~3% of total watershed acreage)
**Main crops:** Golf course, grass hay, pasture, and filbert
**Fish habitat:** Winter steelhead and coho salmon (Washington State Department of Fish and Wildlife SalmonScape: [apps.wdfw.wa.gov/salmonscape/](http://apps.wdfw.wa.gov/salmonscape/))

**Sampling dates:** 14 sampling events, April 5th - October 2nd, once every 2 weeks

**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 creek flows through 10 miles of Vancouver, Washington’s residential and commercial areas.
- Historical data suggests Burnt Bridge is the least healthy stream in Clark County.
- Stream habitat has improved because of efforts by non-profits, volunteers, and government agencies. Their work included riparian vegetation plantings and stormwater drainage control.

**Results and Conclusions**

- There were 68 pesticide detections in Burnt Bridge Creek. Of these, 4 were above WSDA’s assessment criteria.
- Out of all the chemicals tested for, there were 4 types of insecticides, 5 fungicides, 13 herbicides, 1 degrade, and 3 other pesticide-related chemicals 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, carbendazim, difenoconazole, diuron, fipronil, imidacloprid, metolachlor, pyriproxyfen, and simazine are POCs that were detected in Burnt Bridge Creek.
- The detections of fipronil, imidacloprid, and pyriproxyfen at this site were higher than WSDA’s assessment criteria.
- When multiple pesticides are detected simultaneously the environmental effects can combine; multiple pesticides were detected almost every week Burnt Bridge Creek was tested. Between 1 and 13 pesticides were detected at the same time.

**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](http://agr.wa.gov/wastepesticide) to learn about waste pesticide collection events.
The calendar to the right 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 triangle to the right shows what pesticides were detected in Burnt Bridge Creek in 2017. Pesticides were categorized based on the highest detected concentration. The category 'other' includes wood preservatives, an insect repellent, synergists, and antimicrobials.

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.

The graph shows the total number of detections per sampling event by pesticide category. The category 'other' includes wood preservatives, an insect repellent, synergists, and antimicrobials. The triangle to the right shows what pesticides were detected in Burnt Bridge Creek in 2017. Pesticides were categorized based on the highest detected concentration. The category 'other' includes wood preservatives, an insect repellent, synergists, and antimicrobials.

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