



# FACT SHEET

## 2007 Surface Water Monitoring Program *July 2008*

### Introduction

**Background:** The Washington State Department of Agriculture (WSDA) and the Washington State Department of Ecology are conducting a long-term pesticide sampling study to characterize pesticide concentrations in selected surface waters during the typical pesticide use season. This fact sheet provides water quality summary results from monitoring conducted in 2007 and documents any changes occurring in the study during the year.

**Study Sites:** Five watersheds are being monitored for this study because they support several salmonid populations, produce a variety of agricultural commodities, and have a high percentage of cultivated land area. (See Figure 1.)



Figure 1. Urban & agricultural watersheds in 2007 study

1. Thornton Creek, located in the Cedar-Sammamish Water Resource Inventory Area (WRIA) 8, was selected as the urban watershed due to listed fish species, prior salmonid habitat enhancement efforts, and the occurrence of pre-spawning mortality in Coho salmon.
2. Four sub-basins of the Lower Skagit-Samish WRIA 3 were selected to represent western Washington agricultural land-use practices: Samish River, Big Ditch Slough, Browns Slough, and Indian Slough.
3. Three sub-basins of the Lower Yakima WRIA 37 were selected to represent eastern Washington irrigated agriculture land-use practices: Marion Drain, Sulphur Creek Wasteway, and Spring Creek.
4. Four sub-basins of the Wenatchee WRIA 45 were selected to represent central Washington agricultural (tree fruit) land-use practices: Wenatchee River, Mission Creek, Peshastin Creek, and Brender Creek.
5. One sub-basin of the Entiat WRIA 46 was selected to represent central Washington agricultural (tree fruit) land-use practices: Entiat River.

Year 2007 is the first in a three-year study cycle to investigate pesticides in the Wenatchee and Entiat watersheds, second in a three-year cycle in the Skagit-Samish watershed and the fifth in a six-year cycle in the Cedar-Sammamish and Lower Yakima watersheds.

**Sampling:** The study was designed to assess pesticide presence in selected salmonid-bearing streams during typical pesticide use periods. Sampling was conducted from February through October 2007, the highest application period for pesticides.

Over 150 registered and historical-use pesticides were analyzed, including organochlorine, organophosphorous, and carbamate pesticides. Conventional water quality parameters – total suspended solids, pH, conductivity, temperature, and flow – were also measured to better understand factors influencing pesticide toxicity, fate and transport, and general water quality.

## Sampling Results

During 2007, 64 currently registered pesticides, historical-use pesticides and degradates were detected. The majority of pesticide detections were close to analytical detection limits.

Figures 2-5 illustrate the classes of pesticides detected in the monitored watersheds. Herbicides were the most commonly detected class of pesticides. However, regional differences in pest pressures are illustrated by the different percentages of pesticide classes detected in each basin.

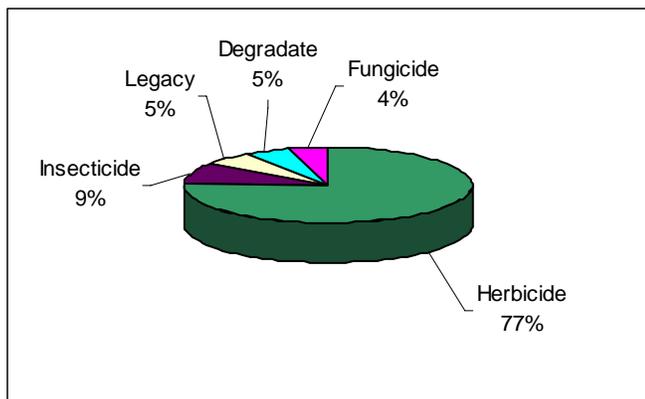


Figure 3. Pesticide detections by category – Skagit

In the urban basin, dichlobenil (Casoron®) was the most frequently detected pesticide. Tebuthiuron, atrazine and DDE (a degradate of DDT) were the most commonly detected compounds in the agricultural basins – Skagit, Lower Yakima and Wenatchee/Entiat respectively.

Azinphos-methyl, chlorpyrifos, diazinon, DDT, DDE and endosulfan exceeded either a state water quality standard or recommended water quality criteria at least once in 2007.

## Additional Study

At the Marion Drain sampling site, a study designed to compare daily sampling, weekly sampling, and passive sampling was conducted from April 24 to May 15, 2007. The results of this comparison study will be published later in 2008.

## For More Information

Contact Jim Cowles, WSDA Natural Resources Assessment Section at (360) 902-2066 or [jcowles@agr.wa.gov](mailto:jcowles@agr.wa.gov) or Debby Sargeant, Ecology Environmental Assessment Program at (360) 407-6139 or [dsar461@ecy.wa.gov](mailto:dsar461@ecy.wa.gov). The complete report, *Surface Water Monitoring Program for Pesticides in Salmonid-Bearing Streams, 2007 Data Summary*, can be found on the WSDA and Ecology Web sites at [agr.wa.gov/PestFert/EnvResources/SWM/default.htm](http://agr.wa.gov/PestFert/EnvResources/SWM/default.htm) and [ecy.wa.gov/programs/eap/toxics/pesticides.htm](http://ecy.wa.gov/programs/eap/toxics/pesticides.htm)

Inquiries regarding the availability of this publication in alternative formats should be directed to the WSDA Receptionist at (360)902-1976 or Telecommunications Device for the Deaf at (360) 902-1996.

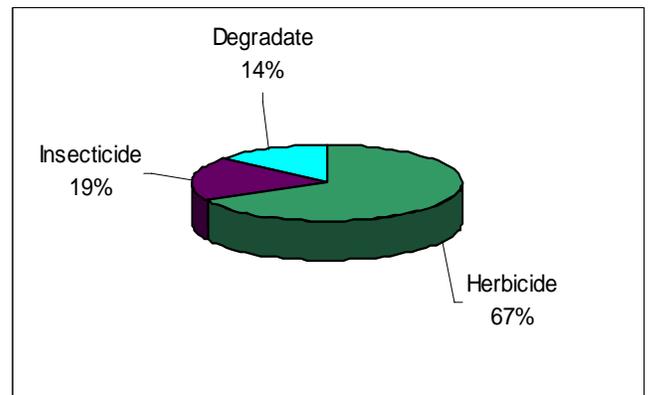


Figure 2. Pesticide detections by category – Thornton Creek

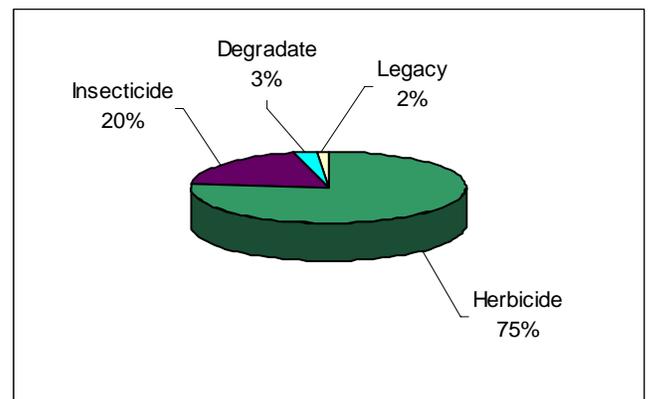


Figure 4. Pesticide detections by category – Lower Yakima

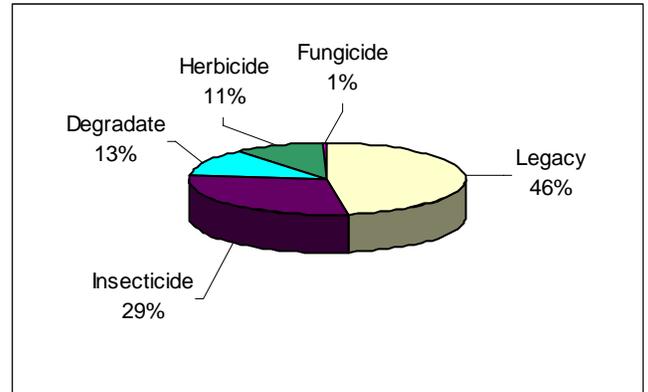


Figure 5. Pesticide detections by category – Wenatchee/Entiat