



Surface Water Program Pesticide Fact Sheet



Idaho State Department of Agriculture Evaluation of Pesticide Residue Clearwater Basin North Central Idaho

The Idaho State Department of Agriculture (ISDA) conducted a pesticide monitoring program on 8 tributaries that feed the Main Clearwater River and the South Fork of the Clearwater River. The Clearwater River Basin is located in north central Idaho (Figure 1) and covers 9,645 square miles. The eight tributaries monitored during this study encompass approximately 977,426 acres with 503,000 of those acres involved in agricultural activities. The eight tributaries were chosen based on salmonid activities within the tributaries, agricultural acreage, pesticide usage, and listing of some of the tributaries on the State of Idaho's 303(d) list for pesticide concerns. Monitoring took place from April 2004 through July 2004 with samples collected every two weeks during this period. This project was made possible through discretionary funding from the Environmental Protection Agency (EPA) along with additional funding from ISDA to support labor, equipment, and additional analytical costs. Analytical testing and expertise were provided by the University of Idaho's Analytical Science Laboratory (ASL) located in Moscow, Idaho.

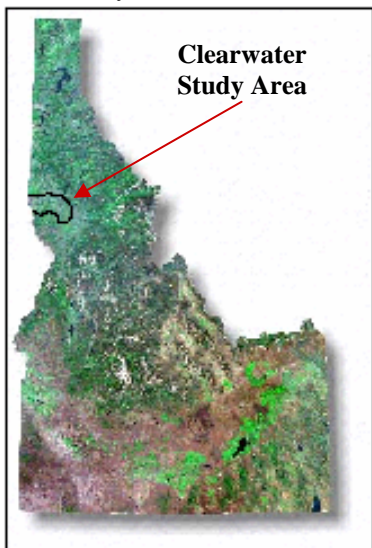


Figure 1. Clearwater Basin Area

The eight tributaries include Lawyer Creek and Cottonwood Creek that discharge into the South Fork of the Clearwater River. The remaining six; Cottonwood Creek, Catholic Creek, Potlatch River, Big Canyon Creek, Lapwai Creek, and Jacks Creek all discharge to the main stem of the Clearwater River.

Of the sixty-four total samples collected during this study 73% (47 samples) had positive detections above the method detection limit. Of the 47 positive results thirteen different pesticides were identified with eleven classified as herbicides and only two as insecticides. The overall percentages indicated that 88% of the detections within the basin were herbicide products while only 12% were insecticides. The greatest frequency of detections were for the compounds Metribuzin 23%, and Diuron 15% (Figure 2).

Metribuzin (11), Diuron (7), Dicamba (6), and Atrazine (5) were the most frequently detected pesticides in the study area (Table 1). These four pesticides were detected greater than ten

percent of the time. Six of the thirteen pesticides detected occurred in two or more watersheds (Table 1).

Table 1. Pesticide detects per watershed.

Compound	Cottonwood SF Clearwater	Cottonwood Creek	Catholic Creek	Potlatch River	Big Canyon Creek	Lapwai Creek	Total
Methomyl			1		1		2
Dimethoate		1	1		1		3
Simazine	1						1
Metribuzin	3	2	5	1			11
Dicamba	4		1	1			6
Bromacil	2						2
Tralkoxydim			1				1
Picloram	2	1	1				4
Diuron	2	2		1		2	7
Hexazinone				3			3
Linuron			1				1
Atrazine					5		5
2,4-D			1				1
Total	14	6	12	6	7	2	47

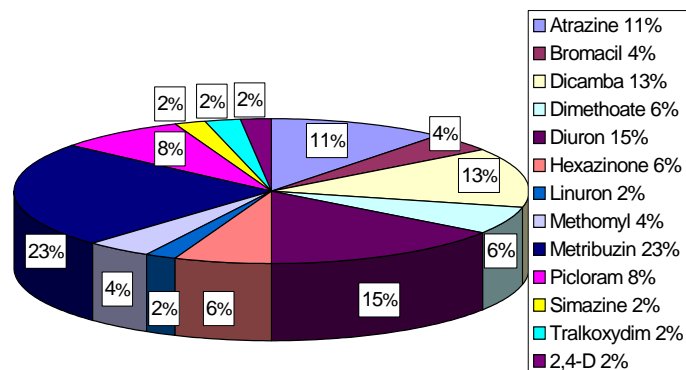


Figure 2. Percent detections.

All of the pesticide concentrations detected during this study were well below any acute or chronic toxicity level for the chosen aquatic species (trout). The analytical testing was at the parts per trillion (ppt) range and reported in parts per billion (ppb). The toxicological data used for evaluating acute toxicity (96-hour LC50) were reported in the parts per million range (ppm). The 96-hour LC50 represents the amount of chemical required to kill 50 percent of the fish in a 96 hour period. Although the pesticide concentrations found were very low, the fact that they were still detected in the environment is of concern. With careful management it is possible to protect crops from insects, disease, and weeds and still prevent pesticides from entering the aquatic environment.