



Idaho State Department of Agriculture

Surface Water Pesticide Fact Sheet

Mason Creek 2012



April 2013

In 2012, the Idaho State Department of Agriculture (ISDA) conducted a water quality monitoring program for pesticide residues at five locations within Mason Creek (Figure 1). The monitoring locations were established in an attempt to determine which drains or areas of Mason Creek produce the majority of pesticide residues that were detected by ISDA in Mason Creek, over the three previous years. Mason Creek is a major tributary to the Lower Boise River. Mason Creek consists of approximately 38,451 acres and originates near the New York canal in Ada County and flows northwest to west and conflues with the Lower Boise River near Caldwell, Idaho.

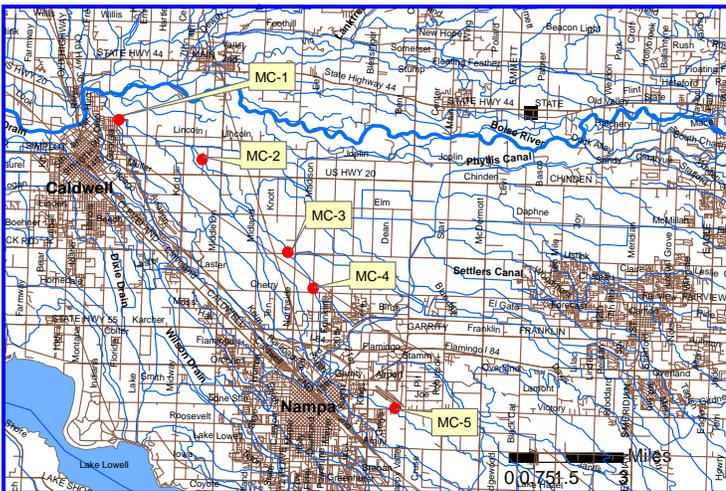


Figure 1. Mason Creek monitoring locations.

The five locations monitored during this study had a total of 250 detections which consisted of 24 different pesticide compounds (Figure 2). Of the 250 detections, 182 detections were herbicides, 14 were insecticides, 52 were a degradate of atrazine (desethyl atrazine), and two were fungicides.

The greatest number of detections of the 52 was the degradate of atrazine (desethyl atrazine), followed by the herbicides 2,4-D (33), terbacil (29), and bromacil (20). The greatest number of detections of an insecticide was methomyl (5), chlorpyrifos (4) malathion (2), and ethoprop (2) (Figure 2). Chlorpyrifos is an organophosphate insecticide which is highly toxic to fish and aquatic invertebrates while methomyl, malathion, and ethoprop are moderately toxic to fish and can be highly toxic to aquatic invertebrates.

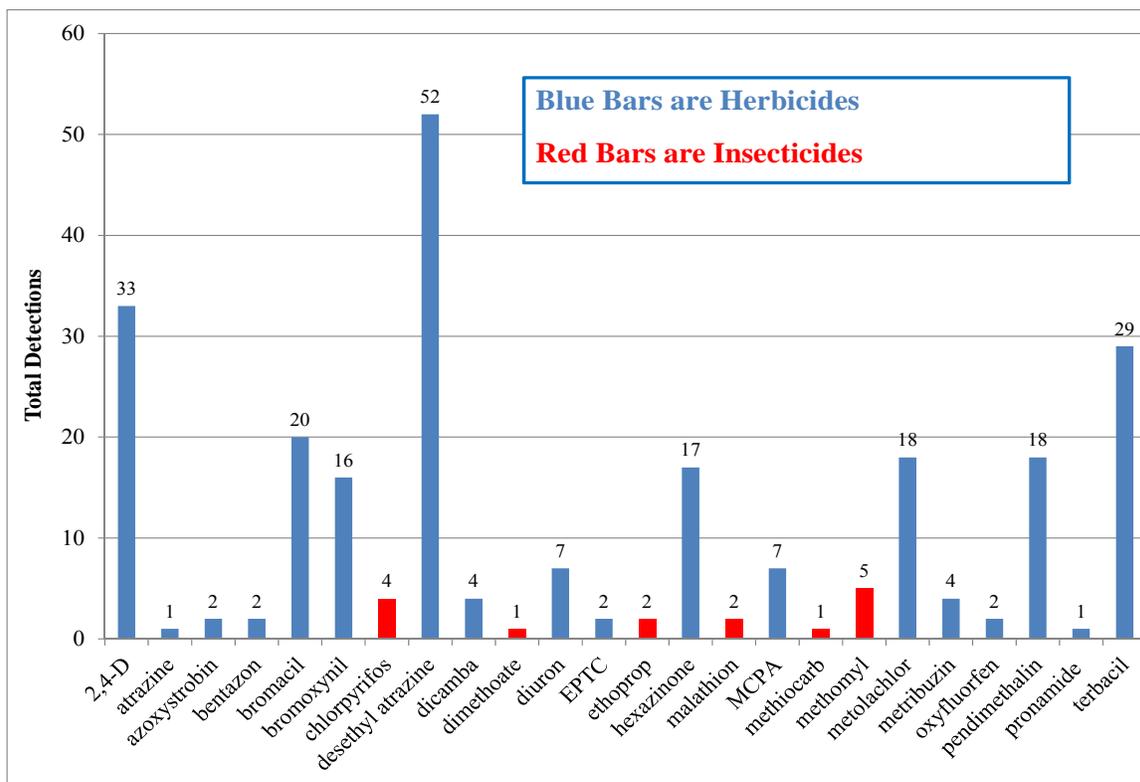


Figure 2. Total pesticide detections.

Table 1. Total pesticide detections per monitoring location.

Station	Total Detections	Herbicide	Insecticide	Fungicide
MC-5	30	30	0	0
MC-4	22	20	2	0
MC-3	49	46	3	0
MC-2	74	69	5	0
MC-1	75	69	5	1

ISDA has set criteria for pesticides that are considered to be a pesticide of concern (POC) for fish, invertebrates, vascular and non-vascular plants in the aquatic environment. These criteria are based on the EPA Office of Pesticide Programs' Aquatic Life Benchmarks (http://www.epa.gov/oppefed1/ecorisk_ers/aquatic_life_benchmark.htm). A POC is any pesticide that is greater than or equal to one-half the aquatic benchmark concentration ($\geq 50\%$) for that compound. Table 2 lists the pesticides detected, type of pesticide, trade names, number of detections and ISDA's pesticides of concern.

Table 2. Mason Creek Pesticides of Concern (POC)

Detected Pesticides	Type	² Trade Name	# Detects	ISDA POC
2,4-D	H	Curtail	33	
atrazine	H	Aatrex	1	
azoxystrobin	F	Avaris	2	
bentazon	H	Basagren	2	
bromacil	H	Krovar	20	
bromoxynil	H	Buctril	16	
chlorpyrifos	I	Lorsban	4 (4)	X
desethyl atrazine	¹ D	—	52	
dicamba	H	Brushmaster	4	
dimethoate	I	Dimethoate 4E	1	
diuron	H	Karmex	7	
EPTC	H	Eptam	2	
ethoprop	I	Mocap	2	
hexazinone	H	Velpar	17	
malathion	I	Fyfanon	2 (2)	X
MCPA	H	Banlene	7	
methiocarb	I	Mesurool	1 (1)	X
methomyl	I	Lannate	5	
metolachlor	H	Dual	18	
metribuzin	H	Sencore	4	
oxyfluorfen	H	Goal	2	
pendimethalin	H	Prowl	18	
pronamide	H	Kerb50-W	1	
terbacil	H	Sinbar	29	
¹ Degradate of Atrazine			Insecticides	
² Other tradenames may apply			() number exceeding	
			aquatic benchmark	

Recommendations

- ◆ Read and Follow Label Directions-Always follow label directions for water quality protection.
- ◆ Implement BMPs including conservation buffers, vegetative strips, and sediment basins.
- ◆ Avoid runoff due to weather events check the forecast prior to pesticide applications.
- ◆ Avoid overspray and drift.
- ◆ Control end of field irrigation runoff.