



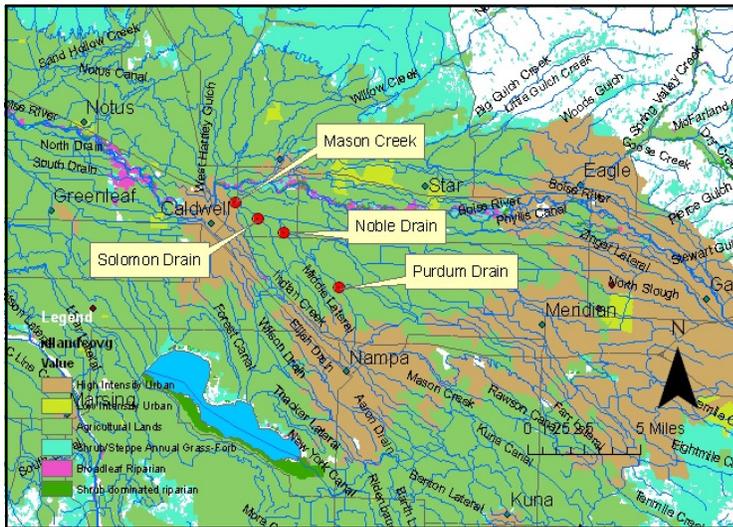
# Idaho State Department of Agriculture Surface Water Pesticide Fact Sheet Mason Creek, Noble Drain, Solomon Drain, and Purdum Drain



ISDA Surface Water Fact Sheet #5

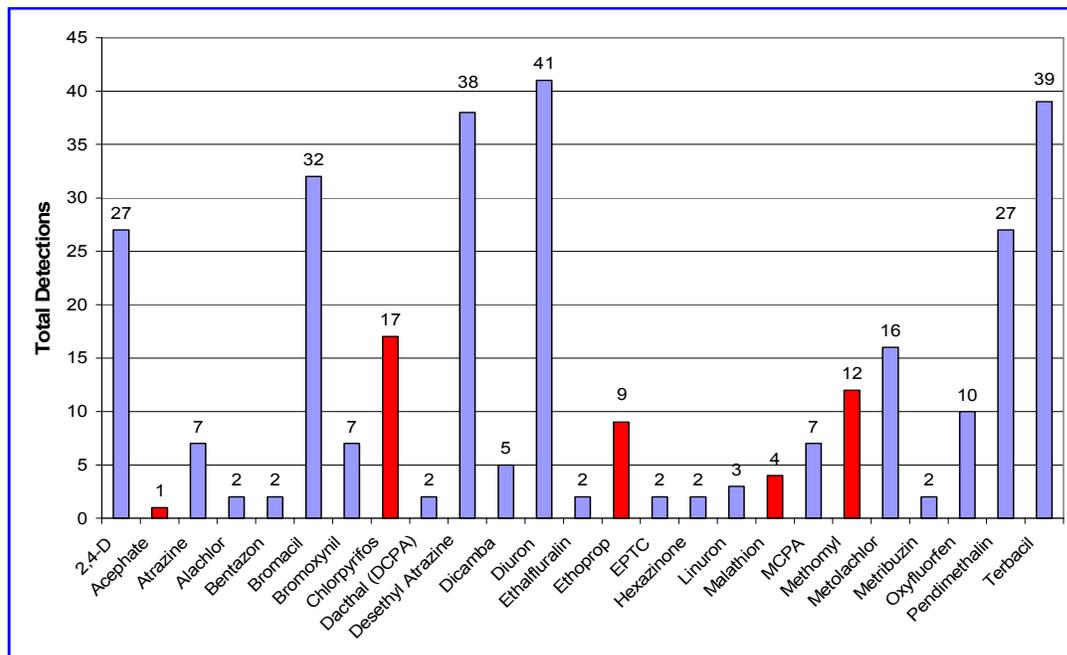
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In 2011, the Idaho State Department of Agriculture (ISDA) conducted a water quality monitoring program for pesticide residues within Mason Creek, which drains to the Lower Boise River, and three major drains that enter Mason Creek (Noble, Purdum, and Solomon Drains). Mason Creek consists of approximately 38,451 acres and originates near the New York canal in Ada County and flows northwest, west toward the Lower Boise river. Parts of Caldwell, Nampa and Meridian reside within the Mason Creek subwatershed boundary. The approximate acreage for the three drains are 10,477 acres for Purdum, 2,573 acres for Solomon Drain, and 2,285 acres for Noble Drain. These three drains are major contributors of irrigation waste water and canal spill water into Mason Creek.



Mason Creek and the three drains had a total of 316 pesticide detections which consisted of 25 different pesticide compounds (Figure 2). Of the 316 detections 236 were herbicides, 42 were insecticides, and 38 were the degradate of atrazine (desethyl atrazine). The greatest number of detections for herbicides were diuron (41), terbacil (39), and Bromacil (32). The degradate of atrazine (desethyl atrazine) had 38 total detections. The greatest number of detections for insecticides were chlorpyrifos (17), methomyl (12), ethoprop (9), and malathion (4). Chlorpyrifos is an organophosphate insecticide which is highly toxic to fish and aquatic invertebrates at low concentration while methomyl, ethoprop, and malathion are moderately toxic to fish and can be highly toxic to aquatic invertebrates.

**Figure 1.** Mason Creek pesticide sampling locations.



**Figure 2.** Total pesticides detected for Mason Creek, Noble, Solomon, and Purdum Drains.

**Table 1.** Detections per monitoring site.

Sites	Total Detections	Herbicides	Insecticides	Desethyl Atrazine
Purdum Drain	65	45	10	10
Noble Drain	77	60	7	10
Solomon Drain	79	59	12	8
Mason Creek	95	72	13	10

ISDA has set criteria for pesticides that are considered to be a pesticide of concern (POC) for fish, invertebrates, vascular, and nonvascular plants in aquatic environments. These criteria are based on the EPA Office of Pesticide Programs' Aquatic Life Benchmarks ([http://www.epa.gov/oppefed1/ecorisk\\_ ders/aquatic\\_life\\_benchmark.htm](http://www.epa.gov/oppefed1/ecorisk_ ders/aquatic_life_benchmark.htm)). A POC is any pesticide that is greater than or equal to one-half the aquatic benchmark ( $\geq 50\%$ ) 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, Noble, Purdum, and Solomon Drains-Pesticides of Concern

Detected Pesticides	Pesticide Type	<sup>2</sup> Trade Name	No of Detections	ISDA POC
2,4-D	Herbicide	Curtail	27	
Acephate	Insecticide	Orthene	1	
Alachlor	Herbicide	Lasso	7	
Atrazine	Herbicide	Aatrex	2	
Bentazon	Herbicide	Basagran	2	
Bromacil	Herbicide	Krovar	32	
Bromoxynil	Herbicide	Buctril	7	
Chlorpyrifos	Insecticide	Dursban/Lorsban	17 (17)	X
DCPA	Herbicide	Dacthal	2	
Desethyl Atrazine	<sup>1</sup> Degradate	—	38	
Dicamba	Herbicide	Brushmaster	5	
Diuron	Herbicide	Karmex	41 (2)	<sup>3</sup> X
EPTC	Herbicide	Eptam	2	
Ethalfuralin	Herbicide	Sonalan	2	
Ethoprop	Insecticide	Mocap	9 (3)	X
Hexazinone	Herbicide	Velpar	2	
Linuron	Herbicide	Lorox DF	3 (3)	X
Malathion	Insecticide	Fyfanon	4 (4)	X
MCPA	Herbicide	Banlene	7	
Methomyl	Insecticide	Lannate	12 (1)	X
Metolachlor	Herbicide	Dual	16	
Metribuzin	Herbicide	Sencore	2	
Oxyfluorfen	Herbicide	Goal	10	
Pendimethalin	Herbicide	Prowl	27	
Terbacil	Herbicide	Sinbar	39	
<sup>1</sup> Degradate of Atrazine			<b>Insecticides</b>	
<sup>2</sup> Other tradenames may apply			( ) number exceeding	
<sup>3</sup> nonvascular plants			EPA aquatic benchmark	

## Recommendations

- ◆ Read and Follow Label Directions-Always follow label directions for water quality protection.
- ◆ Follow Chemigation Law/Rules-applicators must be licensed and follow state chemigation laws.
- ◆ Conduct maintenance and calibration of application equipment.
- ◆ Implementation of management strategies-Field scouting, evaluation of pest control needs, selection of proper pesticide, irrigation management etc.
- ◆ Implement BMPs including conservation buffers, vegetative filter strips, sediment basins, and pump back systems.
- ◆ Avoid runoff due to weather events check the forecast prior to pesticide applications.
- ◆ Avoid overspray and drift
- ◆ Match application rates to pest problem
- ◆ Do not mix and load near water

For additional information about this program contact Kirk Campbell, Idaho State Department of Agriculture at 208-332-8598 or email [kirk.campbell@agri.idaho.gov](mailto:kirk.campbell@agri.idaho.gov)