

Oregon's Pesticide Stewardship Partnership Evaluation of Pesticides of High Concern

Created 10/2020

The 2013 Memorandum of Understanding for Oregon Pesticide Water Quality Protection requires that pesticides detected in the State of Oregon be assessed as to their level of concern on an annual basis.

In 2018 the States of Idaho, Oregon, and Washington agreed to a procedure to conduct that assessment. The assessment methodology uses water quality data collected throughout the state as part of the Pesticide Stewardship Partnership. This

data is analyzed using the frequency of detection for a pesticide coupled with both the acute and chronic aquatic life benchmark developed by the U.S. Environment Protection Agency (EPA).

In order to easily employ this methodology, the states have developed the following matrix which specifies when a pesticide is considered a high, moderate, or low level of concern. This matrix allows for determinations at both the watershed and statewide level.

Decision Matrix Based on Water Monitoring Data (2019)

Detected concentration relative to aquatic life benchmarks (ALB) and frequency of detection

REFERENCE LEVEL CRITERIA

FREQUENCY OF DETECTION IN % LAST 3 YEARS	REFERENCE LEVEL CRITERIA				
	≥1 detection at or above 50% of an acute ALB	≥3 detections at or above 50% of a chronic ALB	1 to 2 detections at or above 50% of a chronic ALB	No detections over 50% of any ALB	
	100 to 65.1	High Level of Concern	High Level of Concern	High Level of Concern	Moderate Level of Concern
	65 to 35.1	High Level of Concern	High Level of Concern	Moderate Level of Concern	Moderate Level of Concern
35 to 0	High Level of Concern	High Level of Concern	Moderate Level of Concern	Low Level of Concern	

Each Pesticide Stewardship Partnership area will determine the level of concern for detected pesticides. Pesticides that are deemed of high concern in over 30% of the PSP areas will be designated as statewide pesticides of high concern or statewide Pesticides of Concern (POCs).

The matrix uses the terms Pesticide of High Concern (PHC), Pesticide of Moderate Concern (PMC), and Pesticide of Low Concern (PLC) as alternatives to EPA’s use of Pesticides of Concern (POC) and Pesticides of Interest (POI). Oregon has adopted these terms to more accurately reflect the status of detected pesticides and provide for an intermediate classification that warrants attention above that of an EPA POI and below an EPA POC.

Each year data is evaluated for the previous three years. This is done to capture both positive and negative trends in the data over the most recent three years. This allows for the most recent and pertinent data to be used in the evaluation thus providing the most realistic picture of the status of pesticides in watersheds monitored by the Pesticide Stewardship Partnership.

The states have chosen to use 50% of EPA’s aquatic life benchmark to address uncertainties arising from the use of grab sampling to collect

water quality samples and gaps caused from periodic sampling (generally every two weeks March-June and again September- November) rather than continuous or more frequent sampling.

The aquatic life benchmarks developed by EPA generally contain six levels for each pesticide.¹ These are acute and chronic benchmarks for fish, acute and chronic benchmarks for aquatic invertebrates, acute benchmarks for vascular plants (conifers, ferns, flowering, and non-flowering plants) and acute benchmarks for non-vascular plants (mosses, hornworts and liverworts, and some algae). In assessing the water quality results, the Water Quality Pesticide Management Team (WQPMT) uses the lowest value of the six benchmarks.

The following are the results of the 2020 assessment on watershed level. Pesticides highlighted in red are designated as Pesticides of High Concern (PHC). Those highlighted in yellow are designated as Pesticides of Moderate Concern (PMC).

AMAZON PSP (EUGENE AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Diuron	Herbicide	67%	1	
Imidacloprid	Insecticide	5%		9
Mecoprop-p (MCCP-p)	Herbicide	3%	1	
2,4-D	Herbicide	41%		
2,6-Dichlorobenzamide	Metabolite	77%		
AMPA	Metabolite	95%		
Glyphosate	Herbicide	79%		

HOOD RIVER PSP (MID-COLUMBIA RIVER)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Imidacloprid	Insecticide	0.8%	1	
2,6-Dichlorobenzamide	Metabolite	73%		
Deisopropylatrazine	Metabolite	36%		
Diuron	Herbicide	47%		

¹<https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/aquatic-life-benchmarks-and-ecological-risk>.

CLACKAMAS PSP

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Chlorpyrifos	Insecticide	7%	11	
Diazinon	Insecticide	5%	7	
Dimethenamid	Herbicide	30%	1	
Diuron	Herbicide	58%	1	
Imidacloprid	Insecticide	19%	33	35
Metsulfuron-methyl	Herbicide	9%	1	
Oxyfluorfen	Herbicide	20%	1	
2,6-Dichlorobenzamide	Metabolite	91%		
AMPA	Metabolite	100%		
Glyphosate	Herbicide	69%		
Simazine	Herbicide	56%		

MIDDLE DESCHUTES PSP (MADRAS AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Chlorpyrifos	Insecticide	12%	13	
Dimethenamid	Herbicide	45%	1	
Dimethoate	Insecticide	26%		13
Diuron	Herbicide	74%	4	
Imidacloprid	Insecticide	8%		9
Linuron	Herbicide	67%	3	50
Oxyfluorfen	Herbicide	26%	5	
Pendimethalin	Herbicide	51%	1	
Prometryn	Herbicide	52%	3	
AMPA	Metabolite	67%		
Azoxystrobin	Fungicide	50%		
Glyphosate	Herbicide	51%		
Simazine	Herbicide	56%		

MIDDLE ROGUE PSP (MEDFORD AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Imidacloprid	Insecticide	7%		15
Metsulfuron-methyl	Herbicide	10%	2	
Oxyfluorfen	Herbicide	8%	3	
AMPA	Metabolite	55%		
Diuron	Herbicide	47%		
Glyphosate	Herbicide	39%		

PUDDING PSP (SILVERTON AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Atrazine	Herbicide	27%	1	
Chlorpyrifos	Insecticide	4%	4	
Diazinon	Insecticide	2%	2	
Dimethenamid	Herbicide	56%	1	
Diuron	Herbicide	77%	4	
Ethoprop	Insecticide	12%	2	
Imidacloprid	Insecticide	8%	9	9
Oxyfluorfen	Herbicide	14%	1	
Pendimethalin	Herbicide	51%	1	
Prometryn	Herbicide	52%	3	
2,4-D	Herbicide	37%		
2,6-Dichlorobenzamide	Metabolite	62%		
AMPA	Metabolite	100%		
Deisopropylatrazine	Metabolite	45%		
Metolachlor	Herbicide	54%		1
Simazine	Herbicide	64%		

SOUTH UMPQUA PSP (ROSEBURG AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Atrazine	Herbicide	51%		

WALLA WALLA PSP (MEDFORD AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Carbaryl	Insecticide	8%	1	
Chlorpyrifos	Herbicide	12%	22	
Pyriproxyfen	Herbicide	1%	1	
Glyphosate	Herbicide	36%		

WASCO PSP (THE DALLES AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Malathion	Insecticide	11%	4	
AMPA	Metabolite	38%		
Imidacloprid	Insecticide	1%		2

YAMHILL PSP (MCMINNVILLE AREA)

Pesticide	Pesticide Type	Detection Frequency	Detections Above 50% Acute ALB	Detections Above 50% Chronic ALB
Atrazine	Herbicide	52%	2	
Bifenthrin	Insecticide	3%		6
Chlorothalonil	Fungicide	2%	1	1
Chlorpyrifos	Insecticide	10%	20	
Diazinon	Insecticide	7%	4	
Diuron	Herbicide	99%	5	
Ethoprop	Insecticide	8%		3
Imidacloprid	Insecticide	60%		123
Malathion	Insecticide	51%	1	
Metolachlor	Herbicide	70%		6
Oxyfluorfen	Herbicide	17%	1	
Simazine	Herbicide	65%	2	
Sulfometuron-methyl	Herbicide	46%	4	
2-Chloro-4-isopropylamino-6-amino-s-triazine	Metabolite	44%		
2,6-Dichlorobenzamide	Metabolite	85%		
AMPA	Metabolite	97%		
Azoxystrobin	Fungicide	40%		
Deisopropylatrazine	Metabolite	68%		
Glyphosate	Herbicide	80%		
Metribuzin	Herbicide	46%		
Metsulfuron-methyl	Herbicide	29%		2
Propiconazole	Fungicide	56%		
Simazine	Herbicide	56%		

An analysis of the individual results from the watersheds is used to determine the statewide PHC. In order to be designated as a statewide PHC a pesticide must have been detected at a level either above an acute or chronic aquatic life benchmark at a frequency prescribed in the decision matrix in at least 30% of the monitored watersheds. Pesticides that fall under this threshold but are detected at a PHC level in less than 30% of the watersheds or detected

at a high frequency are designated as a PMC. These pesticides should be monitored to ensure that they do not rise to the level of a PHC in the future.

The following table presents the current statewide PHC and PMC's. Those indicated in red are designated as a statewide PHC. Those designated as either orange or yellow are the current list of PMC's.

STATEWIDE SUMMARY²

Pesticide	Pesticide Type	Watersheds Designated as PHC	Watersheds Designated as PMC
Imidacloprid	Insecticide	7	1
Chlorpyrifos	Insecticide	5	
Diuron	Herbicide	5	2
Oxyfluorfen	Herbicide	5	
Diazinon	Insecticide	3	
Dimethenamid	Herbicide	3	
Atrazine	Herbicide	2	
Ethoprop	Insecticide	2	
Metsulfuron-methyl	Herbicide	2	1
Bifenthrin	Insecticide	1	
Carbaryl	Insecticide	1	
Dimethoate	Insecticide	1	
Linuron	Herbicide	1	
Mecoprop-p (MCP-p)	Herbicide	1	
Metolachlor	Herbicide	1	2
Pendimethalin	Herbicide	1	
AMPA	Metabolite		7
Glyphosate	Herbicide		6
2,6-Dichlorobenzamide	Metabolite		5
Deisopropylatrazine	Metabolite		3

²Beginning in 2021 The WQPMT will begin incorporating both sediment data results and timely data from additional sources that meet acceptable data quality assurance standards.