



Fifteenmile Watershed Council Meeting

May 2, 2016

Wasco County and Fifteenmile Creek 2015 Pesticide Monitoring Overview



Kevin Masterson, DEQ and Kirk Cook, ODA

masterson.kevin@deq.state.or.us

kcook@oda.state.or.us





Overview

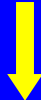


- Background of Pesticide Stewardship Partnership (PSP) Program
- Wasco & Fifteenmile PSP Monitoring results
 - 2015 pesticide water monitoring detections
 - Historical comparisons and trends
- Plans for new pesticide analytes

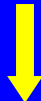
Pesticide Stewardship Partnerships (PSPs)

Key Steps in Partnership Projects

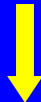
Monitor for current use pesticides in surface waters from drift & runoff



Identify streams with elevated pesticide concentrations or high # of detections



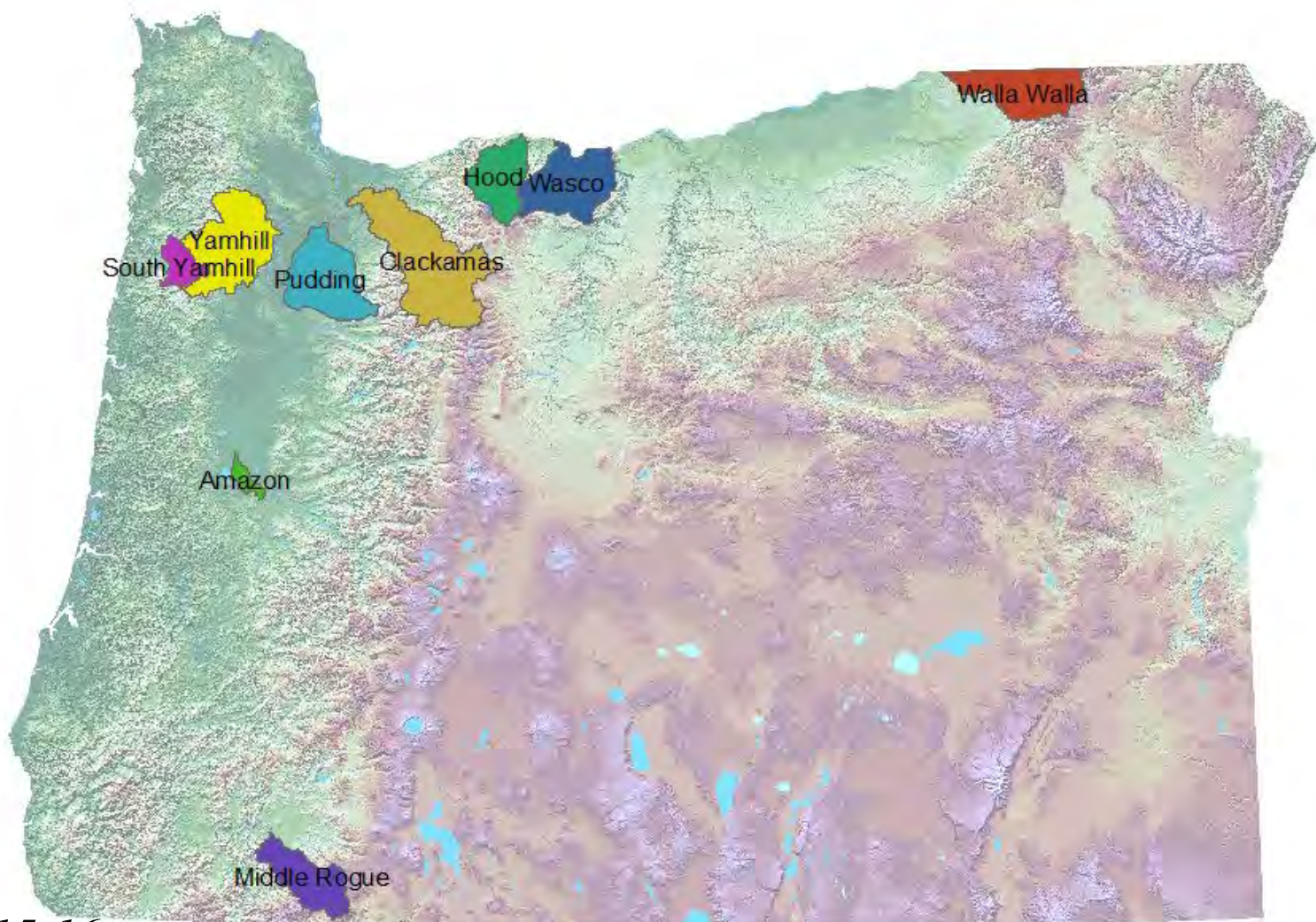
Collaborate to implement voluntary management practices



Follow-up monitoring to determine improvements over time



Pesticide Stewardship Partnerships: 9 Oregon Watersheds*



* *As of 2015-16*



Wasco Watersheds PSP Partners



- Wasco Soil and Water Conservation District
- OSU Extension Service and IPPC
- Columbia Gorge Fruit Growers
- Oregon Department of Environmental Quality
- Oregon Department of Agriculture
- The Dalles Watershed Council
- Fifteenmile Creek Watershed Council



Pesticide Monitoring Locations in Watershed



Oregon
Department
of Agriculture

- 4 Monitoring Locations
 - Mill Creek
 - At Wright Road
 - At 2nd Street Bridge in The Dalles
 - Threemile Creek
 - At Hwy 197
 - **Fifteenmile Creek**
 - **Above Seufert Falls (aka Cushing Falls)**





Pesticide Monitoring Overview



- 2015 Wasco Monitoring Timeframe
 - 15 water sampling events – Wasco SWCD
 - Weekly from late March through mid-April
 - Weekly from late May through end of July
- What Pesticides Are Analyzed?
 - Approximately 120 insecticides, herbicides and fungicides (list evolves over time)
 - Lab will be working on developing methods for new pesticide in 2015

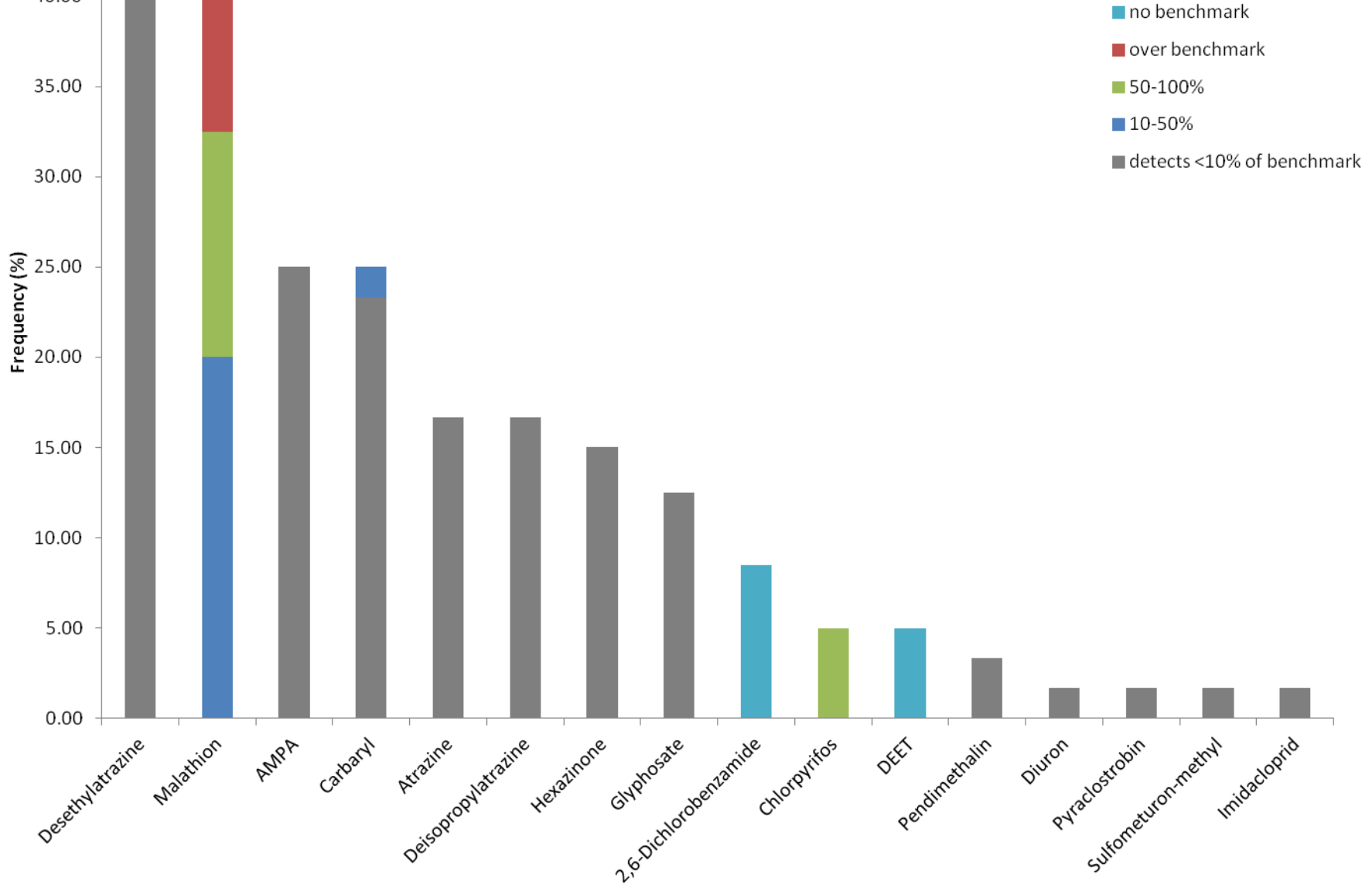
Pesticides Detected in Wasco Streams - 2015

Insecticides	Herbicides	Fungicides
Chlorpyrifos (Lorsban)	Atrazine and degradates (Aatrex)	Pyraclostrobin (Headline)
Carbaryl (Sevin)	Diuron (Karmex, Direx)	
Malathion	Hexazinone (Velpar)	
Imidacloprid (Admire)	Sulfometuron-methyl (Oust)	
DEET*	Pendimethalin (Prowl)	
	2,6-Dichlorobenzamide (Casoron degradate)	
	Glyphosate (Roundup) and degradate (AMPA)	

* Personal care product

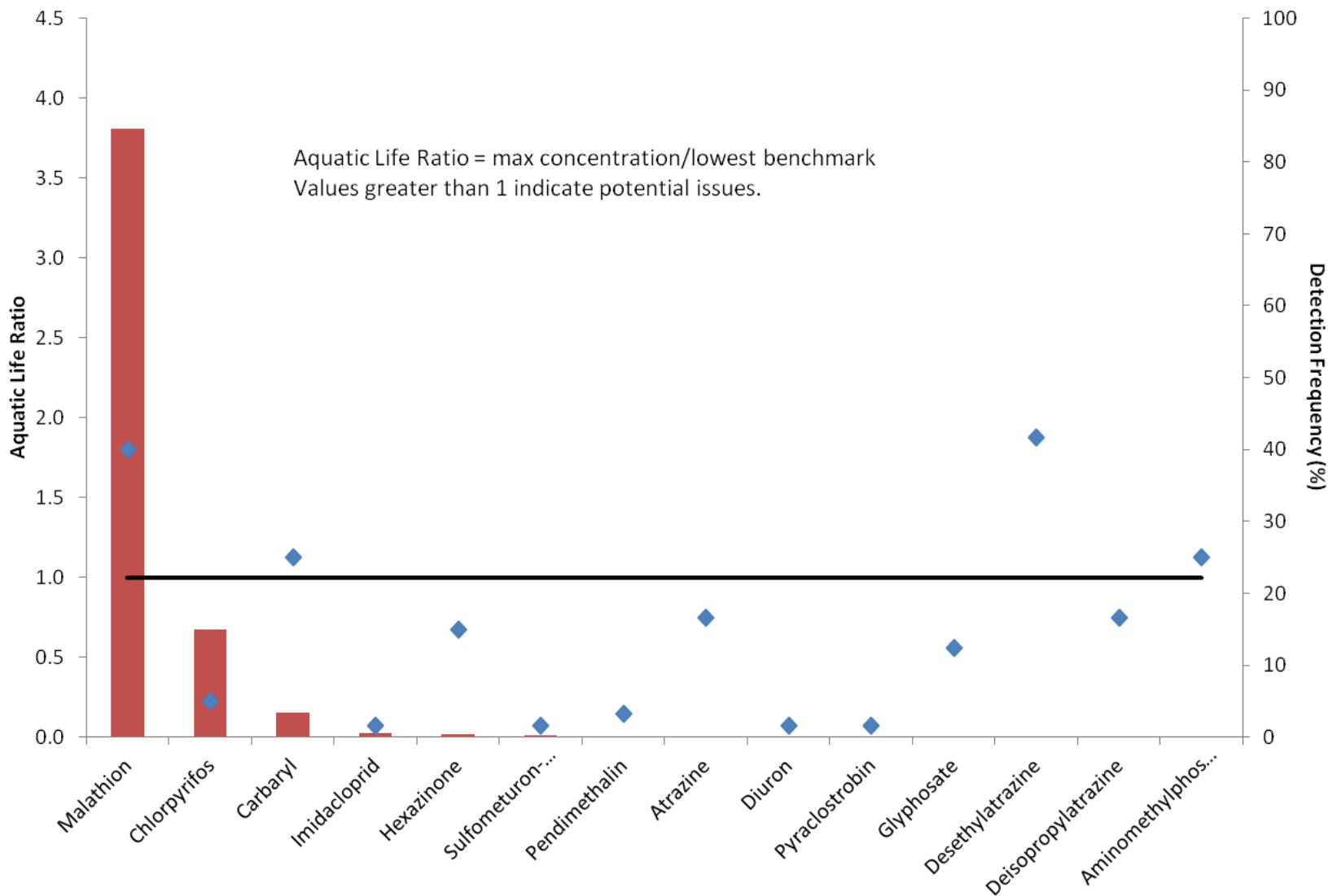
Bold = major ag use pesticides

Detection Frequency in Wasco Basin 2015

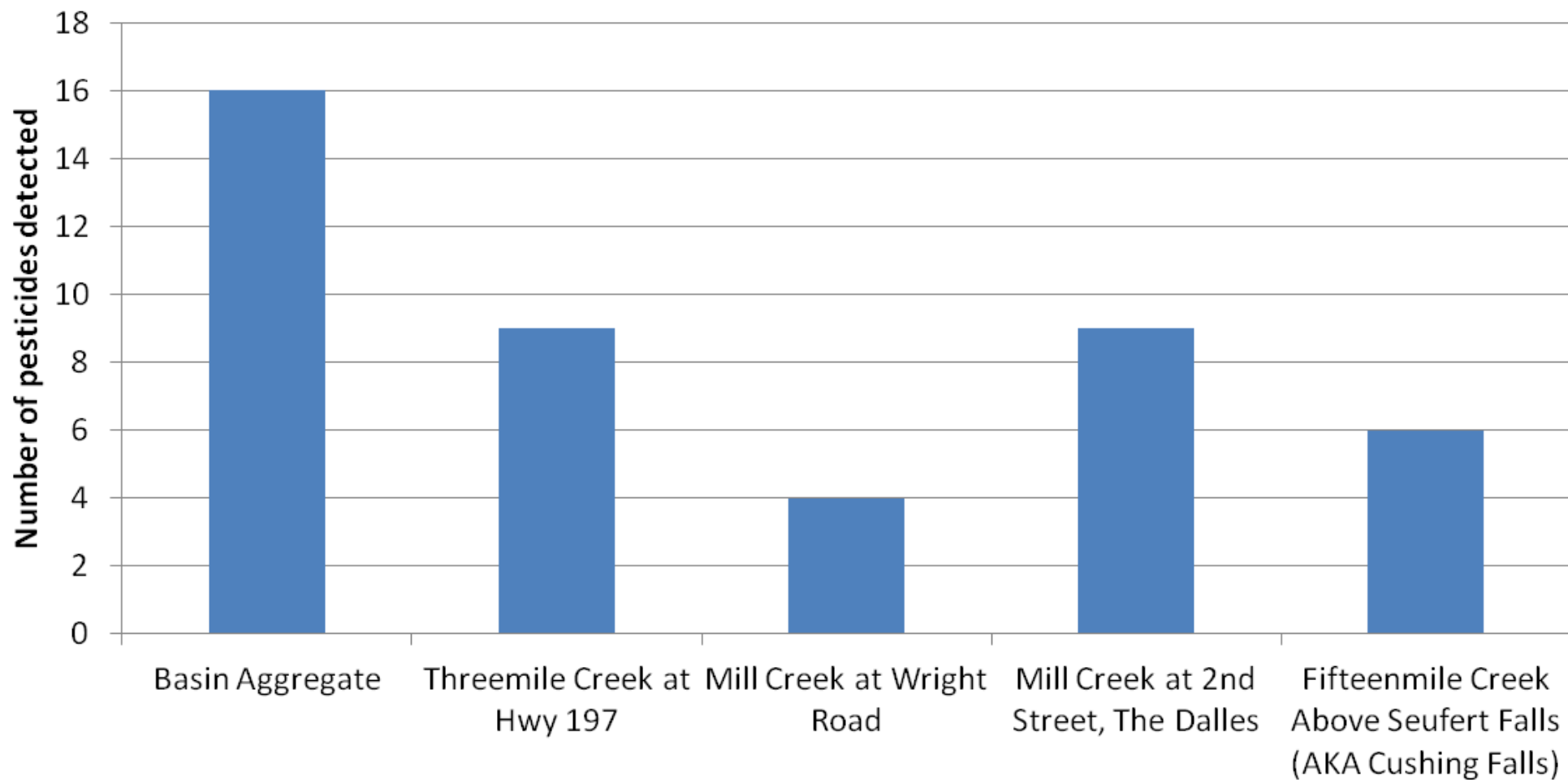


Aquatic Life Ratio and Detection Frequency Wasco Basin 2015

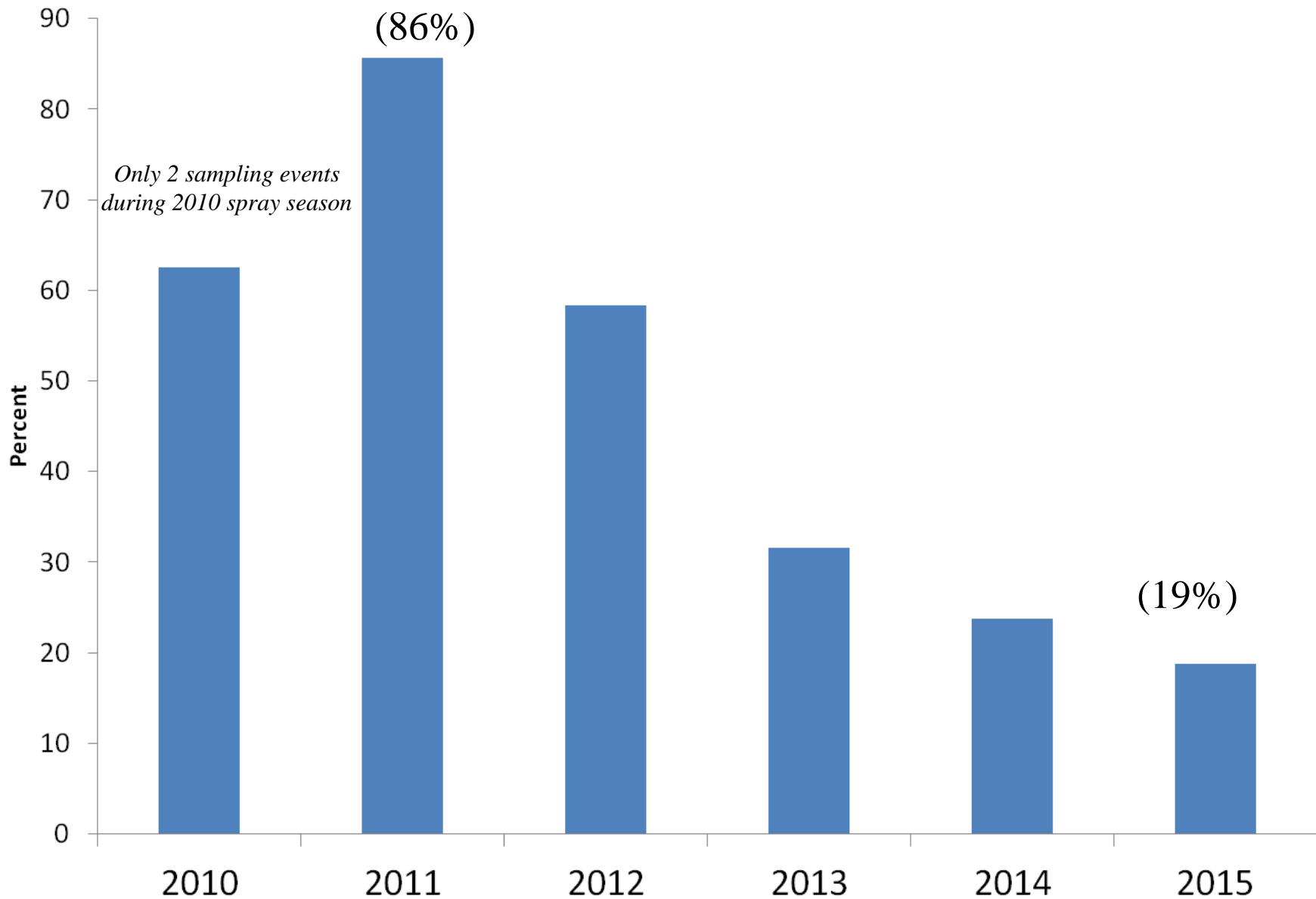
- ALR
- ALR = 1
- ◆ detection frequency



Number of pesticide ingredients detected at each station (2015)

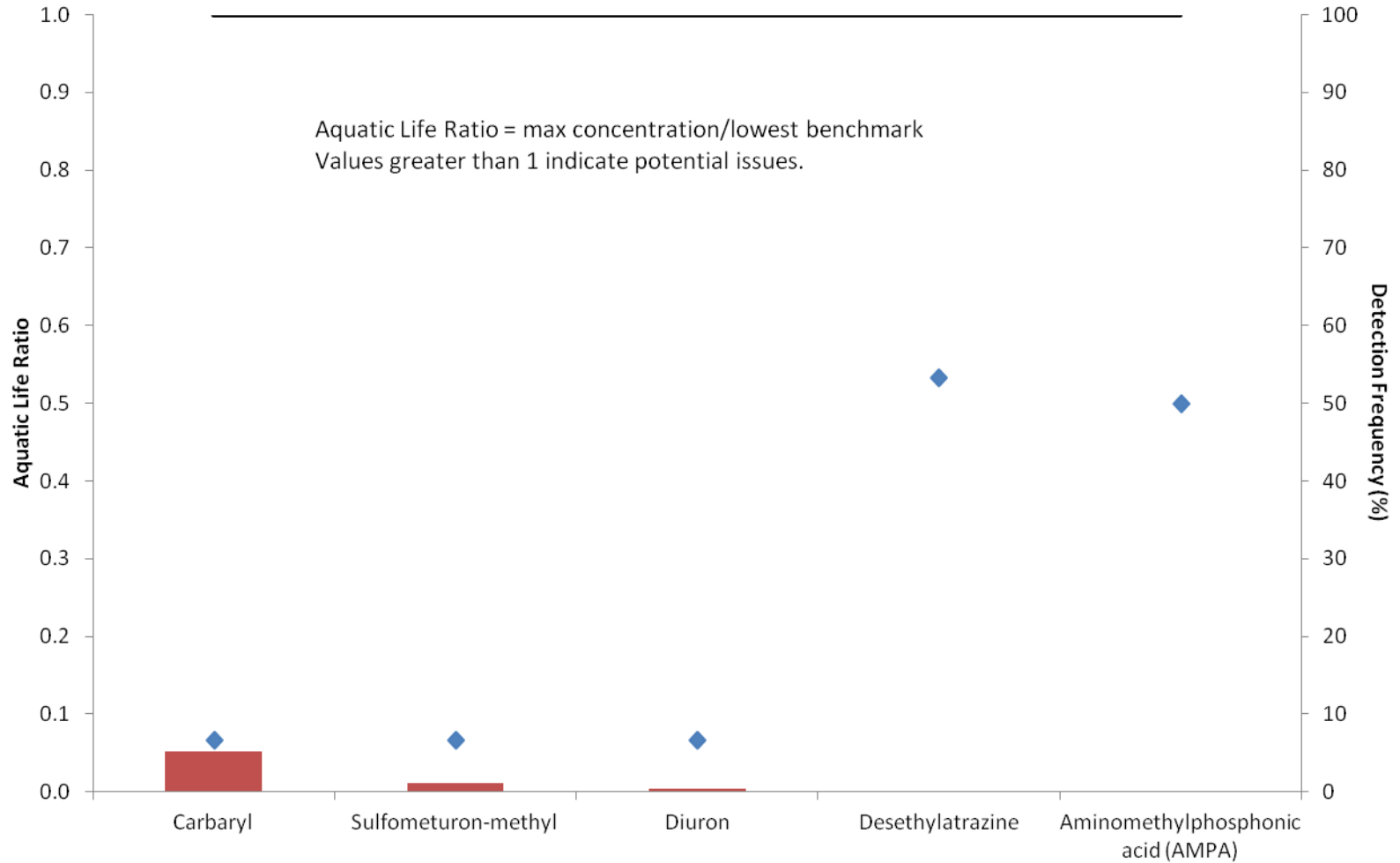


Wasco Watersheds (The Dalles, OR) Percent of Malathion Detects over 0.1 µg/L Water Quality Criterion 2010-2015

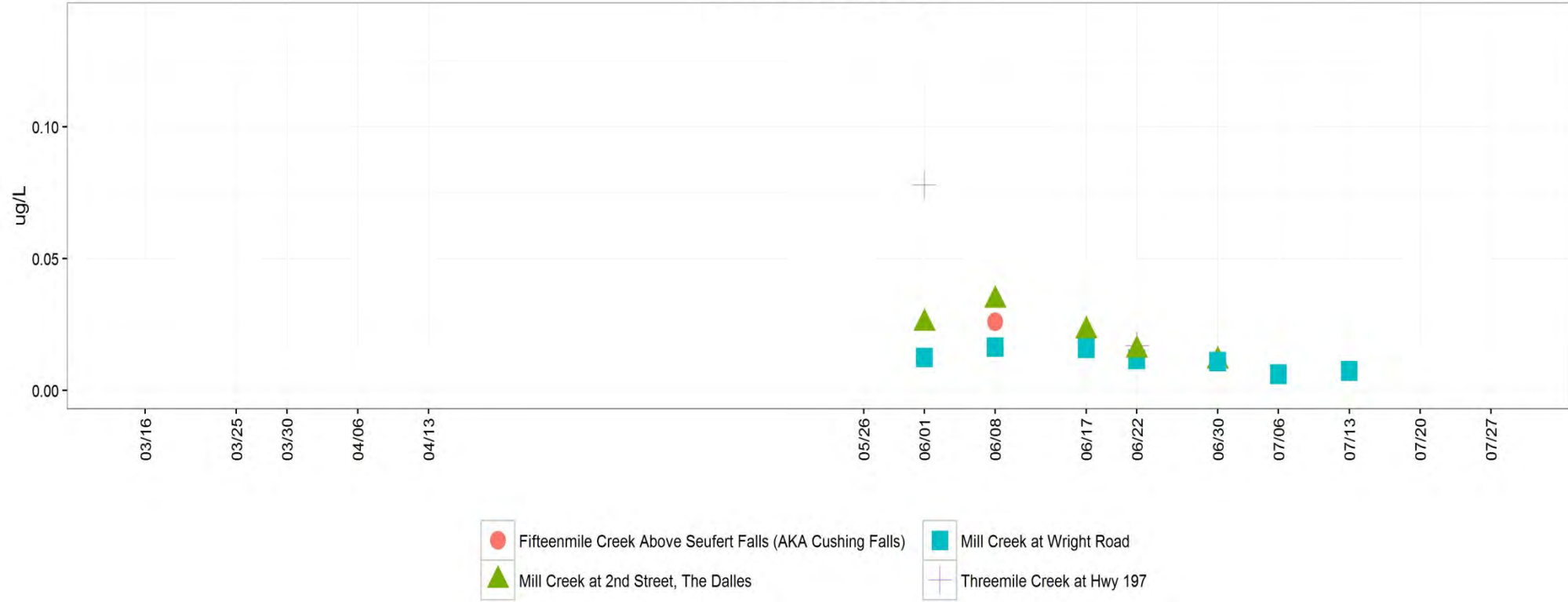


Aquatic Life Ratio and Detection Frequency at Fifteenmile Creek 2015

■ ALR
— ALR = 1
◆ detection frequency

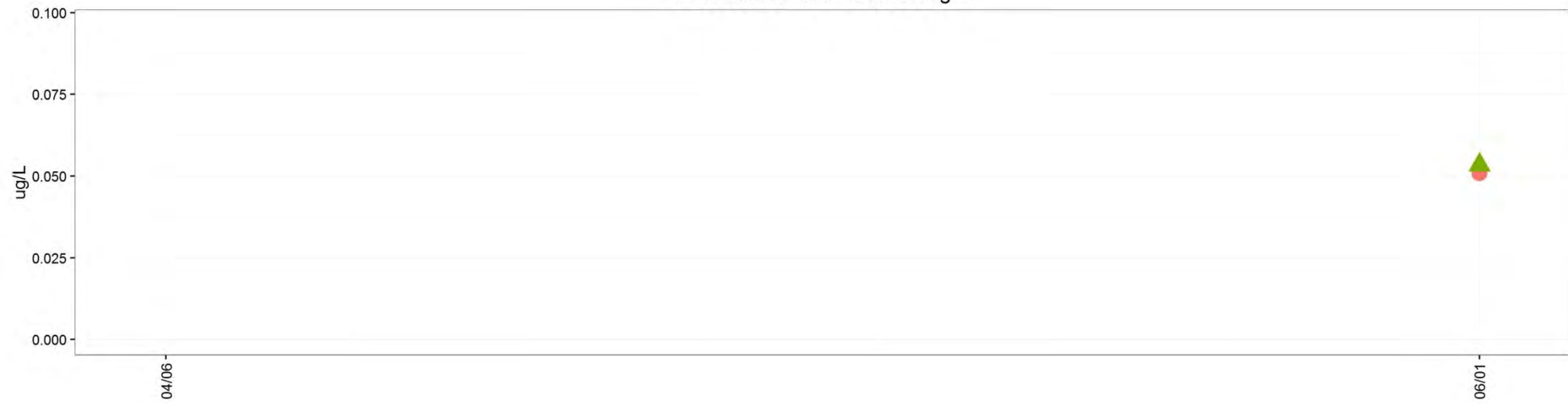






Wasco 2015
Carbaryl
EPA benchmark = 0.5 ug/L



prepared by Julia Crown, ODEQ, 2016-03-25

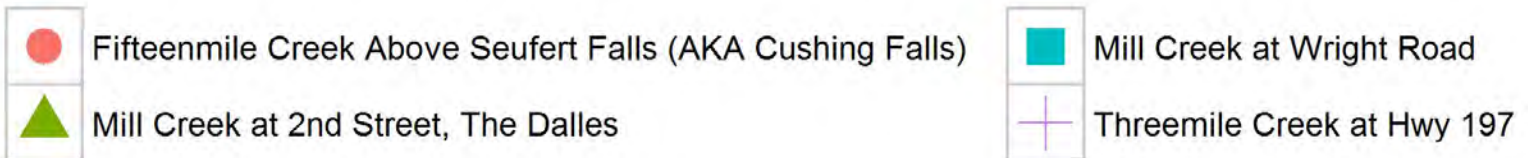
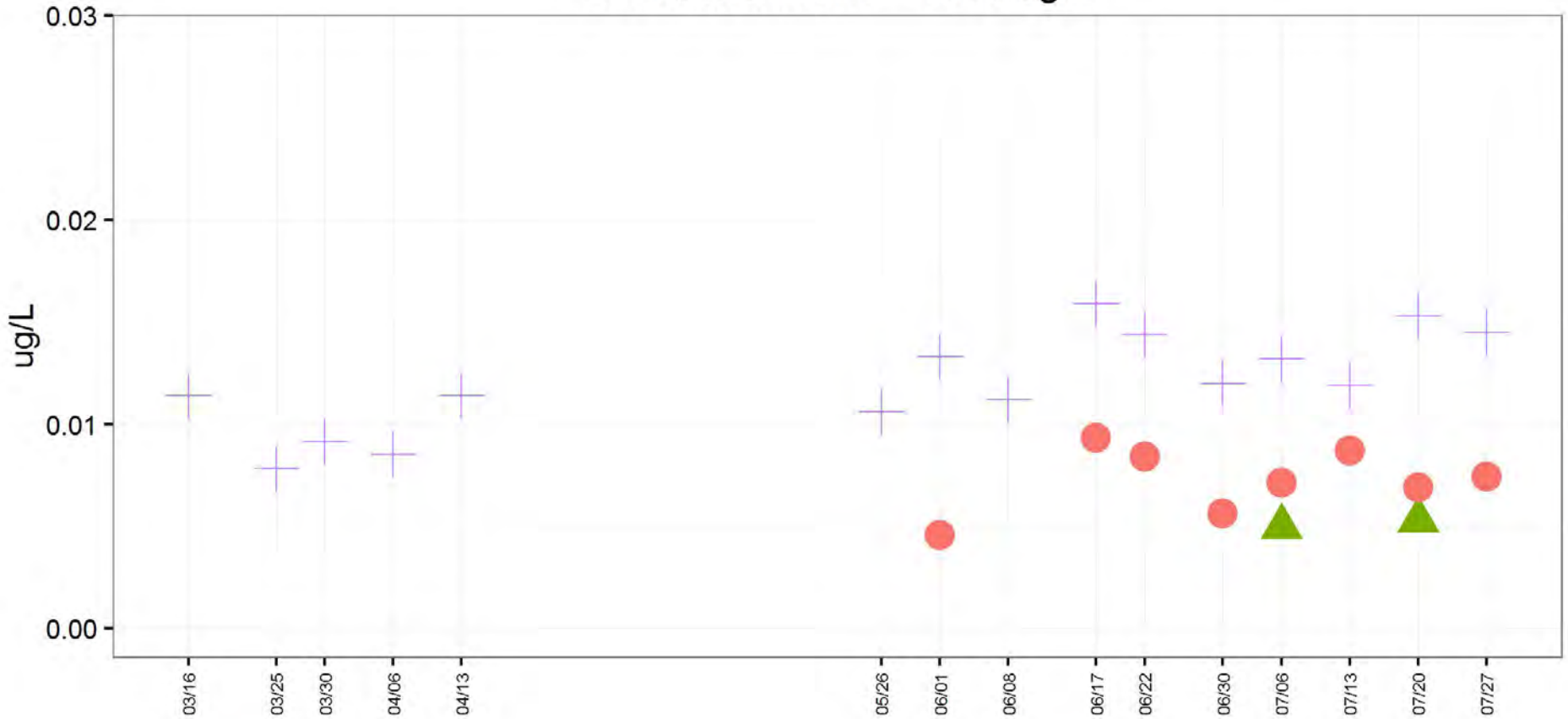
Wasco 2015
Aminomethylphosphonic acid (AMPA)
EPA benchmark = 249500 ug/L



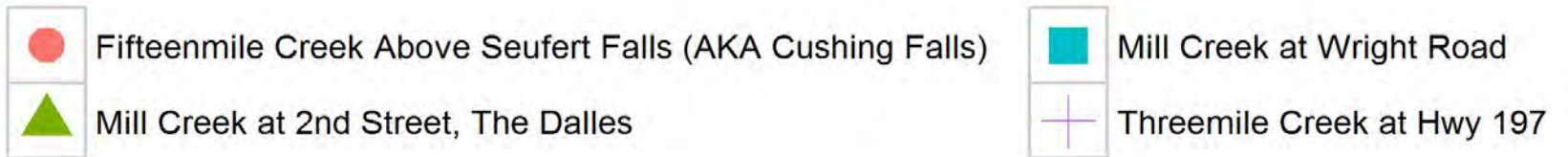
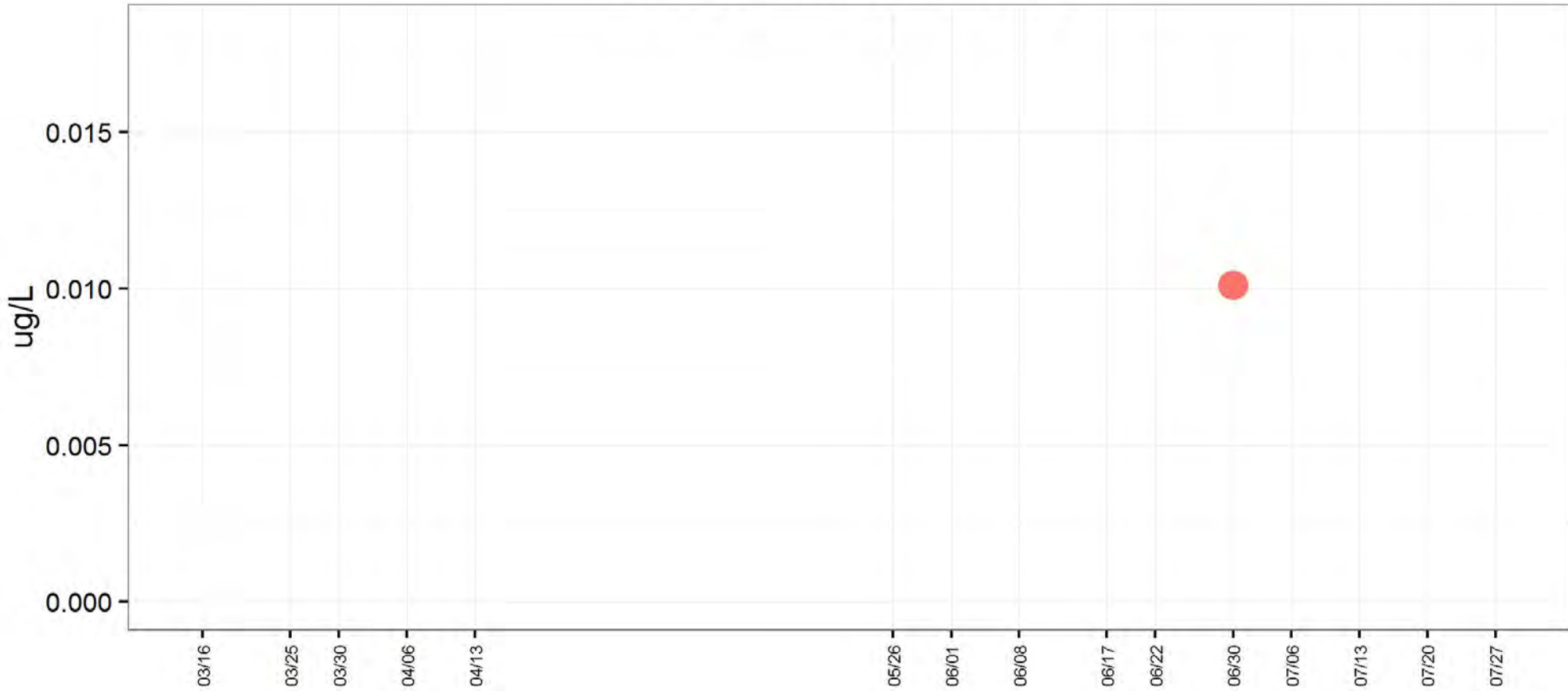
-  Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)
-  Mill Creek at 2nd Street, The Dalles
-  Mill Creek at Wright Road
-  Threemile Creek at Hwy 197

prepared by Julia Crown, ODEQ, 2016-03-25

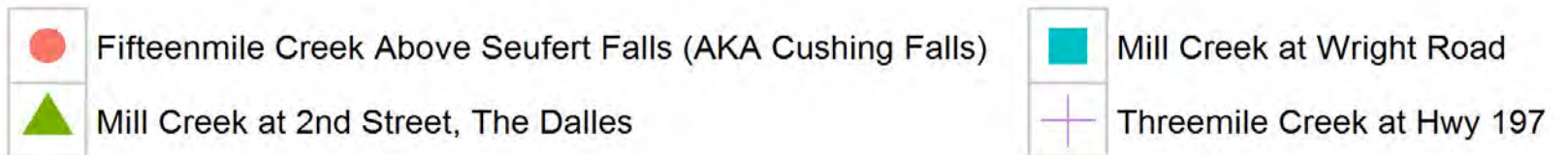
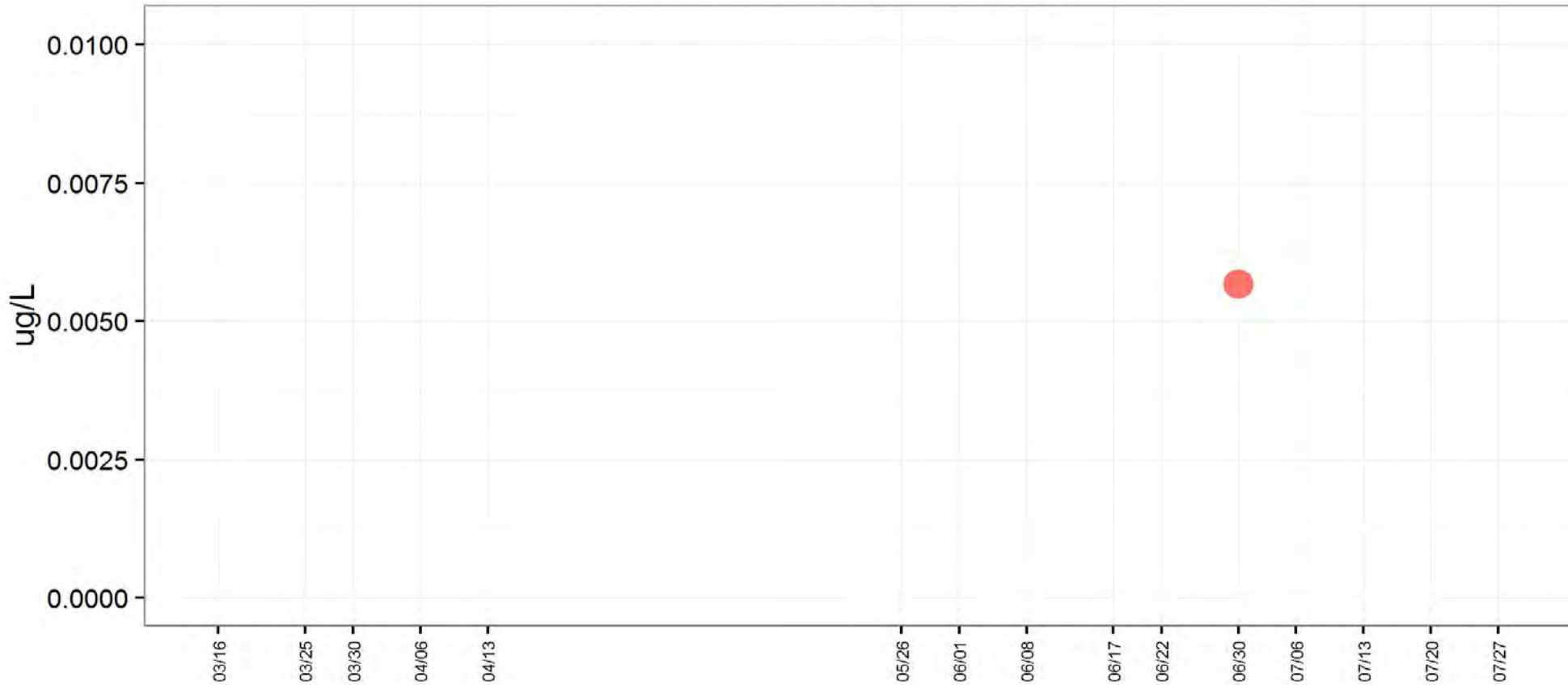
Wasco 2015
Desethylatrazine
EPA benchmark = 1000 ug/L



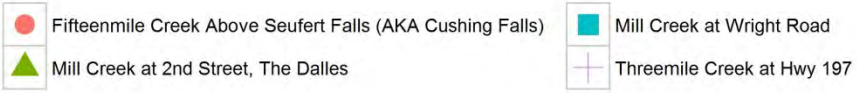
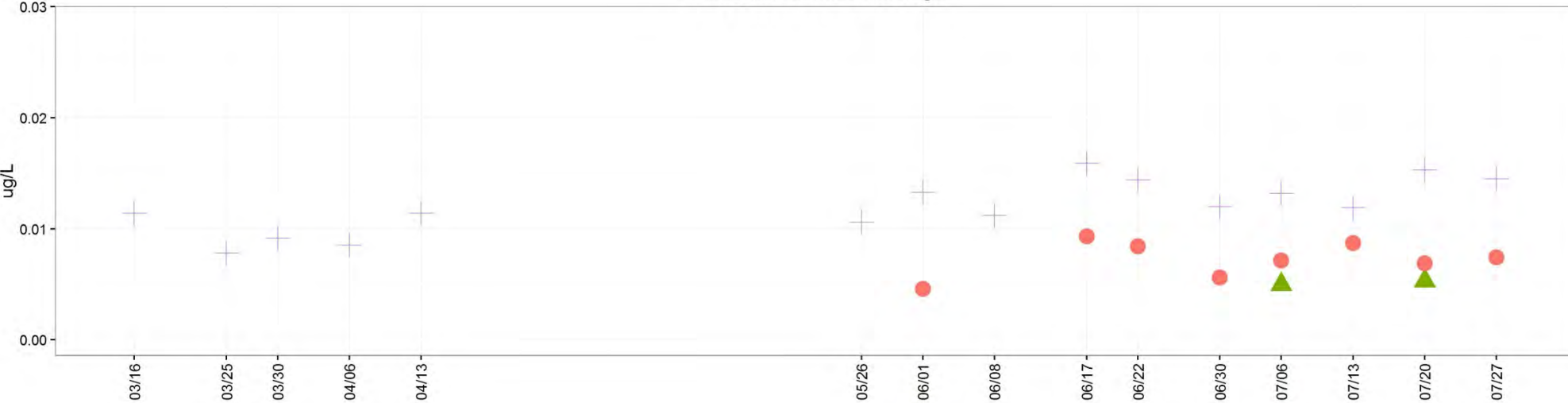
Wasco 2015
Diuron
EPA benchmark = 2.4 ug/L



Wasco 2015
Sulfometuron-methyl
EPA benchmark = 0.48 ug/L

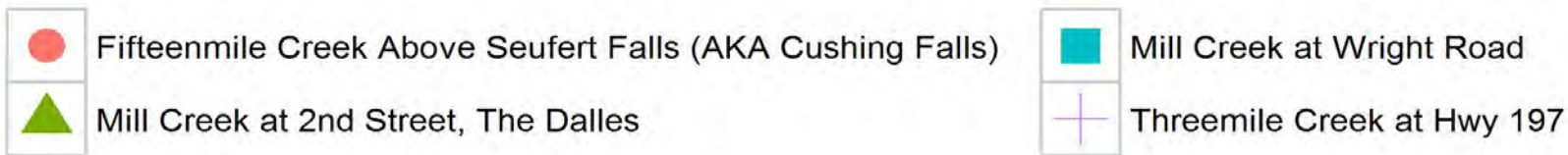
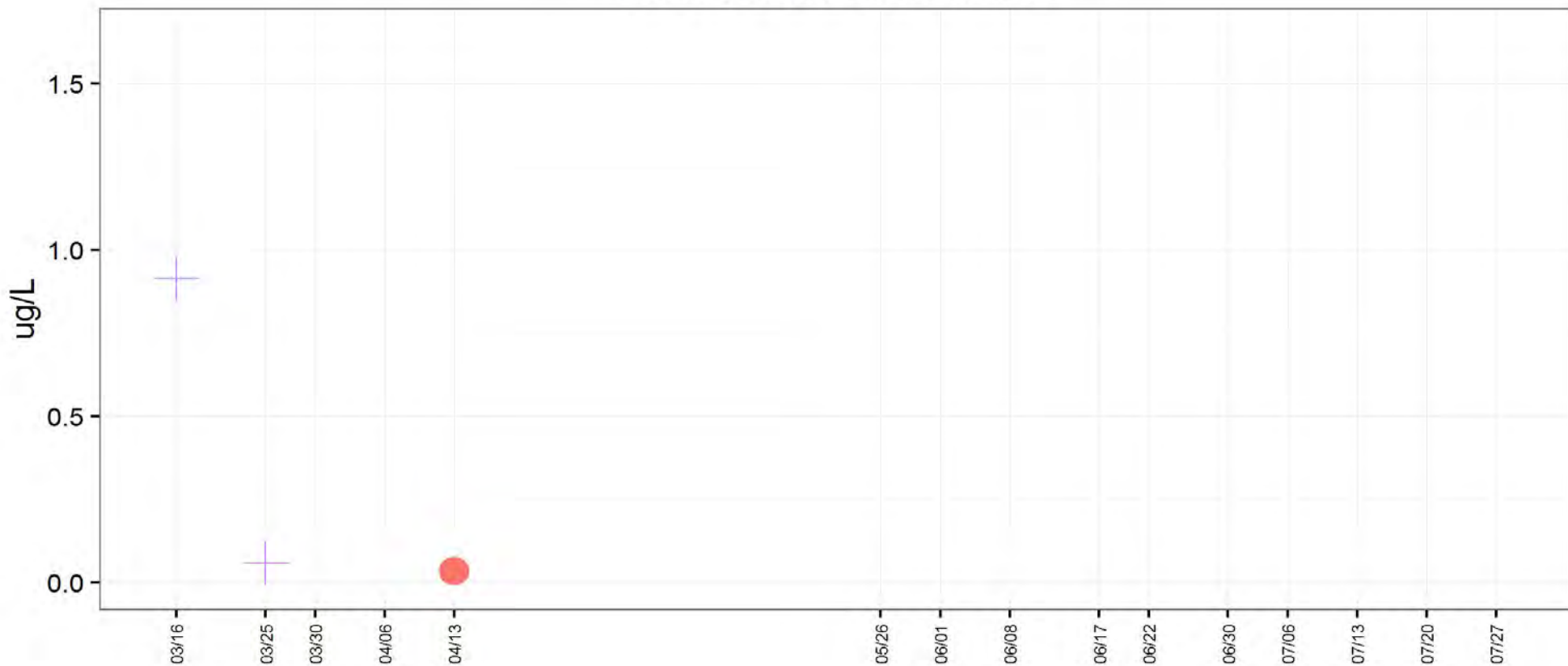


Wasco 2015
Desethylatrazine
EPA benchmark = 1000 ug/L

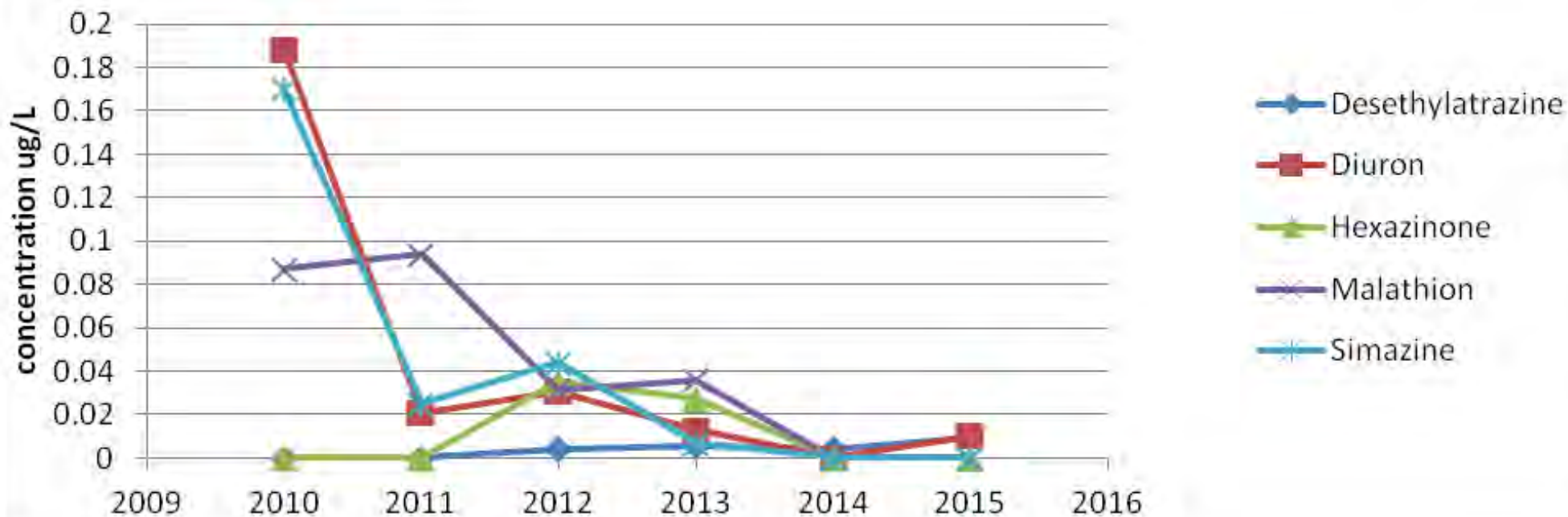


prepared by Julia Crown, ODEQ, 2016-03-25

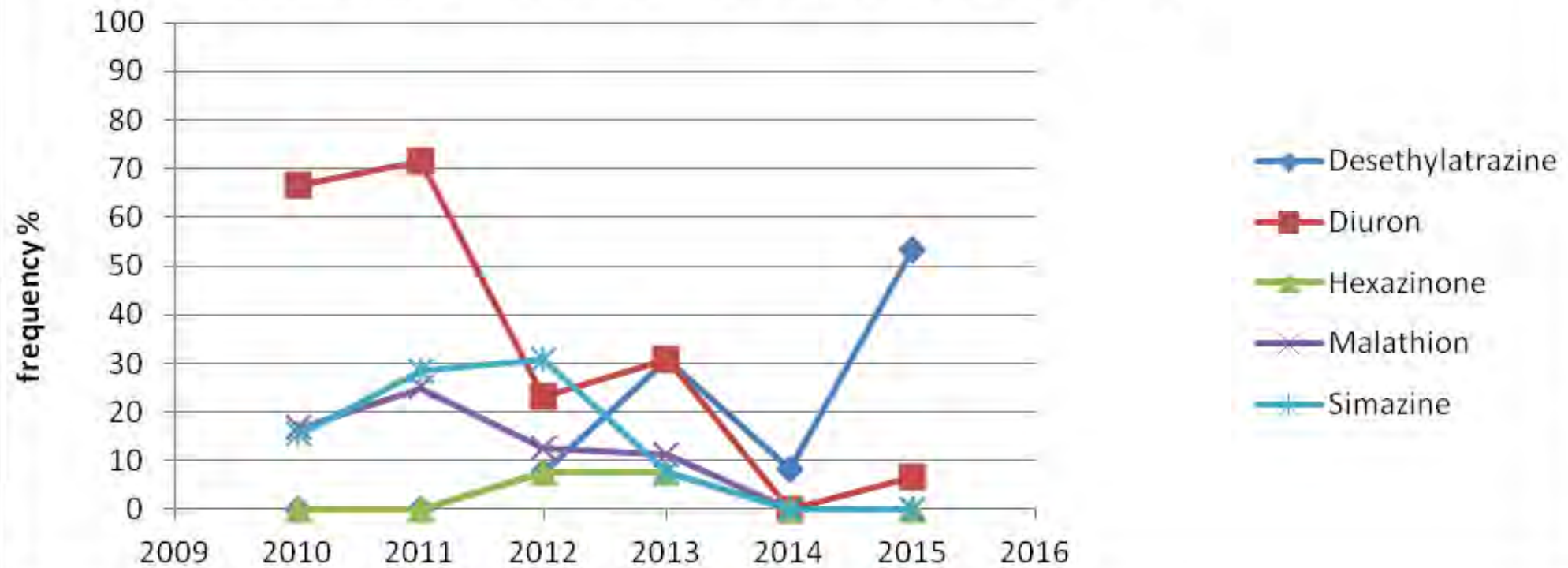
Wasco 2015
DEET
No benchmark available



Fifteenmile pesticide maximum concentrations



Fifteenmile pesticide detection frequency





2016-17 DEQ Pesticide Lab Method Development Plans



Oregon
Department
of Agriculture

Active Ingredient (Trade Name)	Active Ingredient (Trade Name)
Acephate (Orthene) - I	Dinotefuran (Safari) - I
Aminopyralid (Milestone) - H	Fipronil (Regent) - I
Azoxystrobin (Amistar) - F	Fluroxypyr (Vista) - H
Bensulfuron methyl (Londax) - H	Pyraflufen-ethyl (EcoPar) - H
Boscalid (Emerald) - F	Spinosad (GF-120, Entrust) - I
Chlorantraniliprole (Rynaxypyr) - I	Tebufenozide (Confirm, Mimic) - I
Chlorsulfuron (Glean, Telar) - H	Trifloxystrobin (Flint) - F
Diflubenzuron (Dimilin) - I	

I = insecticide, F = Fungicide, H = herbicide



Overall Benefits of the PSP Program

- **Creates awareness** – feedback for pest management practices
- **A cost-effective alternative to a regulatory approach**
 - Proactive, transparent, locally-driven and voluntary
- **Provides real world data vs. conservative models** (*that may overestimate pesticide concentrations in water*) for decision-making and formulating policy
- **Helps ensure that unnecessary regulatory burdens are not placed on pesticide users**
 - Minimal detections of some pesticides support that many current regulations, labeling and use practices are effective in mitigating risk to water resources.