



The Dalles Watershed and Neighborhood Meetings

Winter 2014

Wasco County Watersheds: 2013 Pesticide Monitoring Overview



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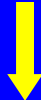
Overview

- Background and context for pesticide monitoring
- Wasco Pesticide Stewardship Partnership
 - 2012 pesticide monitoring findings
 - Historical comparisons and trends
- Summary and next steps

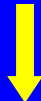
Pesticide Stewardship Partnerships (PSPs)

Key Steps in Partnership Projects

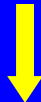
Monitor for current use pesticides in surface waters from drift & runoff



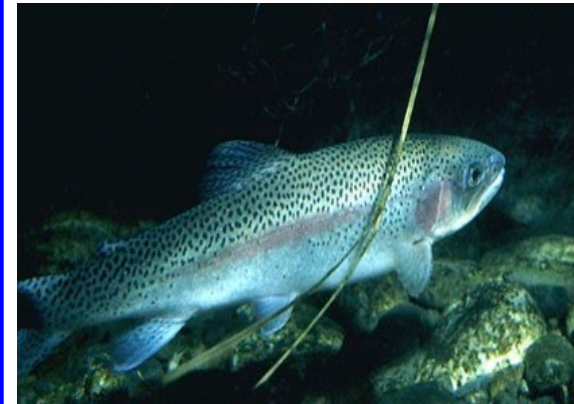
Identify streams with elevated pesticide concentrations or high # of detections



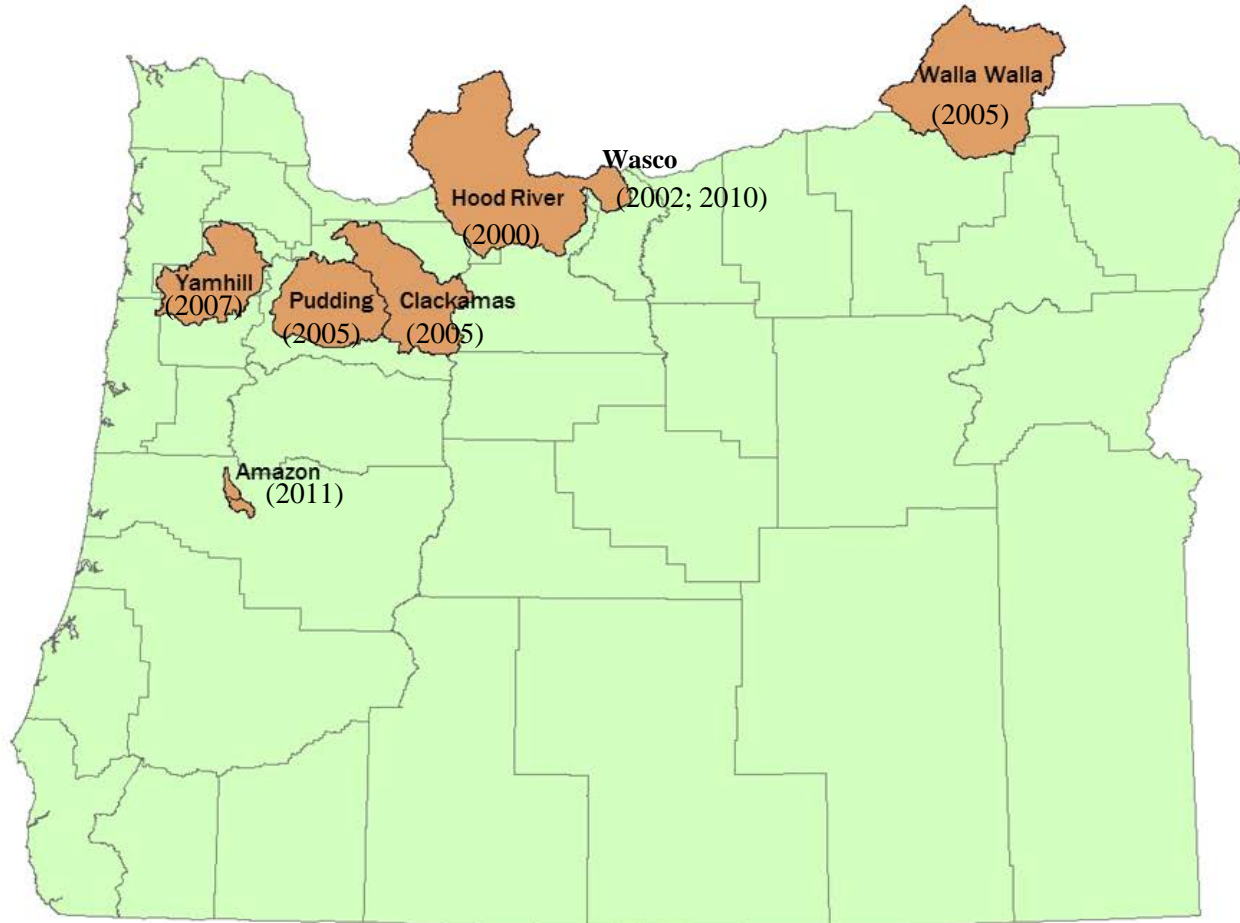
Collaborate to implement voluntary management practices



Follow-up monitoring to determine improvements over time



Oregon Pesticide Stewardship Partnerships Current Watershed Projects



Note: The year in parentheses indicates the starting date(s) for the projects

Pesticide-related Water Quality Management: Addressing Agency Resource Needs

- Consistent long-term funding of monitoring program
- *2013 Oregon Legislature allocated resources:*
 - 1. To add 2 new watersheds to program and support monitoring in existing PSP watersheds*
 - 2. To provide stewardship technical assistance for biennium*
 - 3. To conduct pesticide waste collection events during biennium (7 events over two years).*



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
- Fifteen Mile Creek Watershed Council
- US EPA (grant funding support)



Pesticide Monitoring Locations in Watershed

- 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)
 - South Fork Mill Creek*
 - At Reservoir Road
- *2010 and 2011 only*



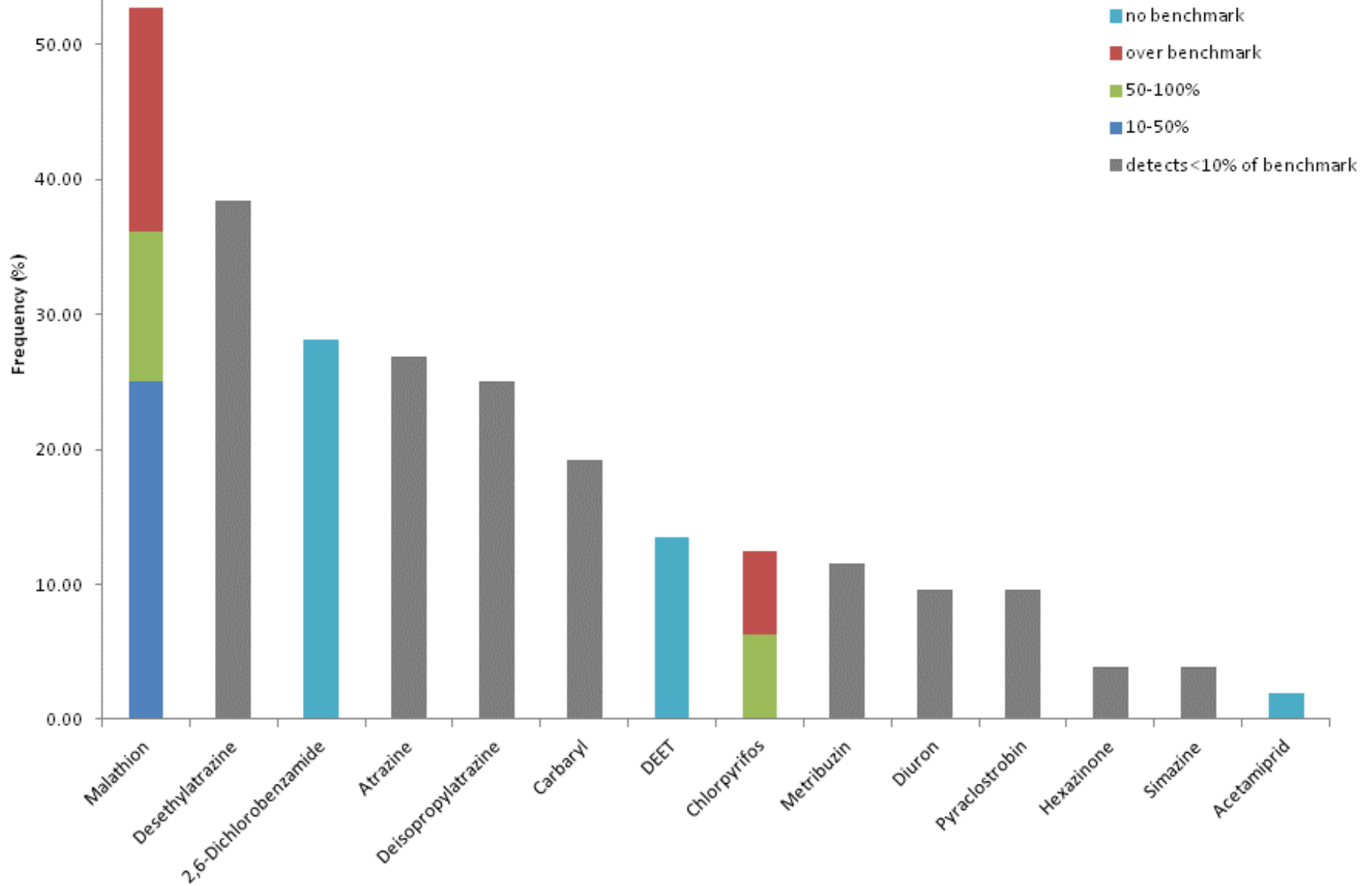


Pesticide Monitoring Overview

- 2013 Wasco Monitoring Timeframe
 - 13 sampling events → weekly from late March to end of July (with break in May)
- What Pesticides Are Analyzed?
 - Approximately 100 insecticides, herbicides and fungicides
 - DEQ working on dropping some and adding others (glyphosate, aka Roundup)

2013 Pesticide Monitoring Data Results: Wasco Watersheds

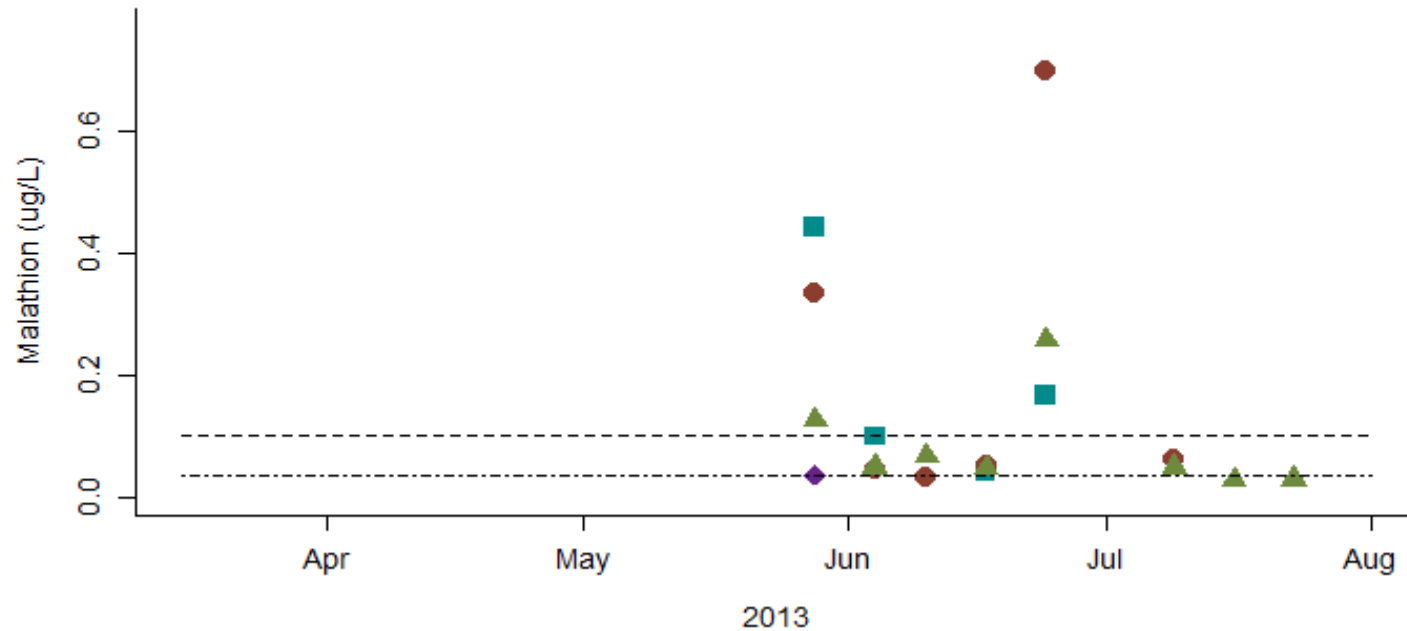
Pesticide Detection Frequency in Wasco Streams Spring/Summer 2013



Malathion– Wasco Basin 2013

Oregon Water Quality Standard = 0.1 ug/L

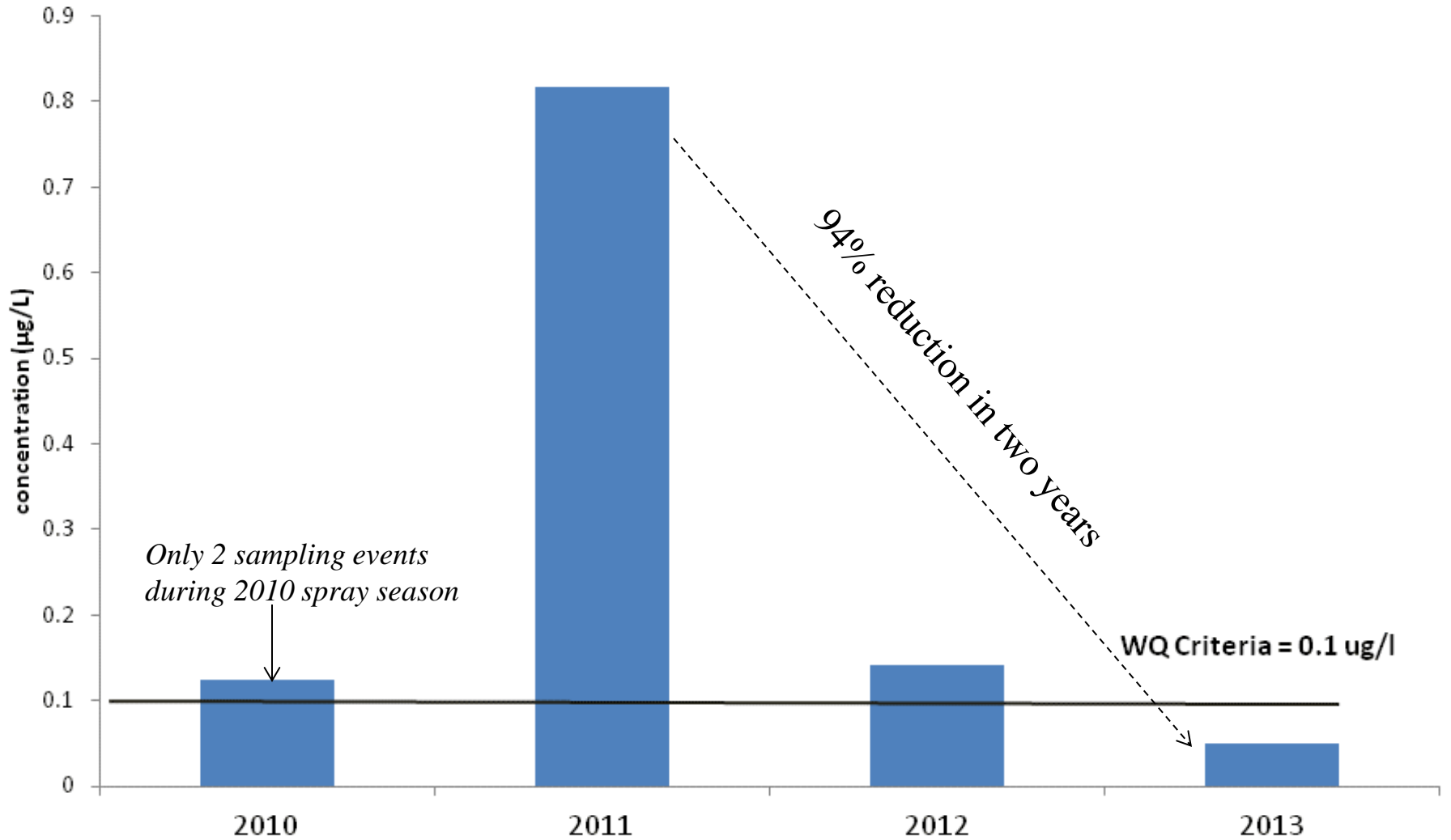
EPA Aquatic Life Benchmark = 0.035 ug/L



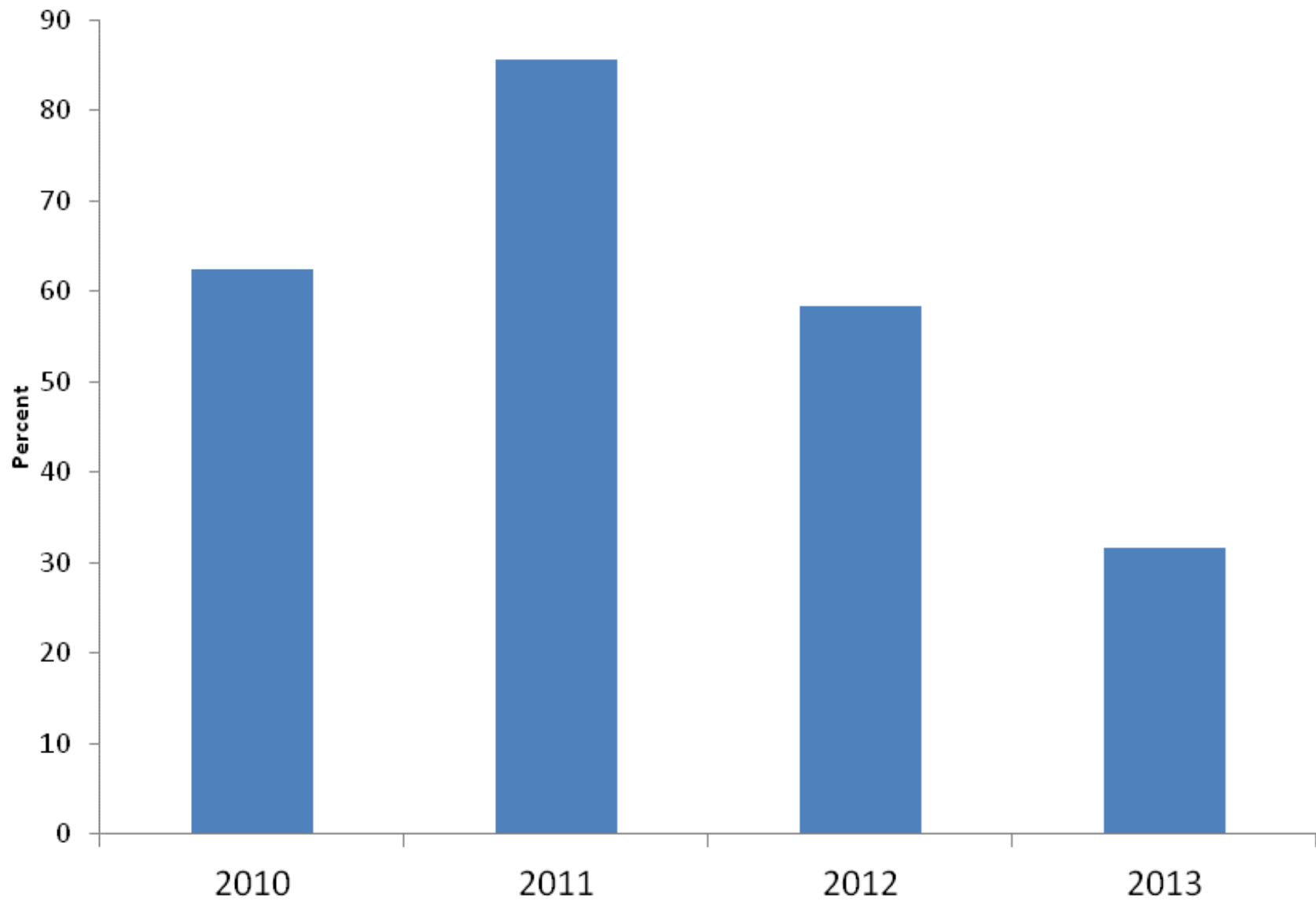
- Threemile Creek at Hwy 197
- Mill Creek at 2nd Street, The Dalles
- Mill Creek at Wright Road
- Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)

Malathion in Wasco Watersheds 2010-2013

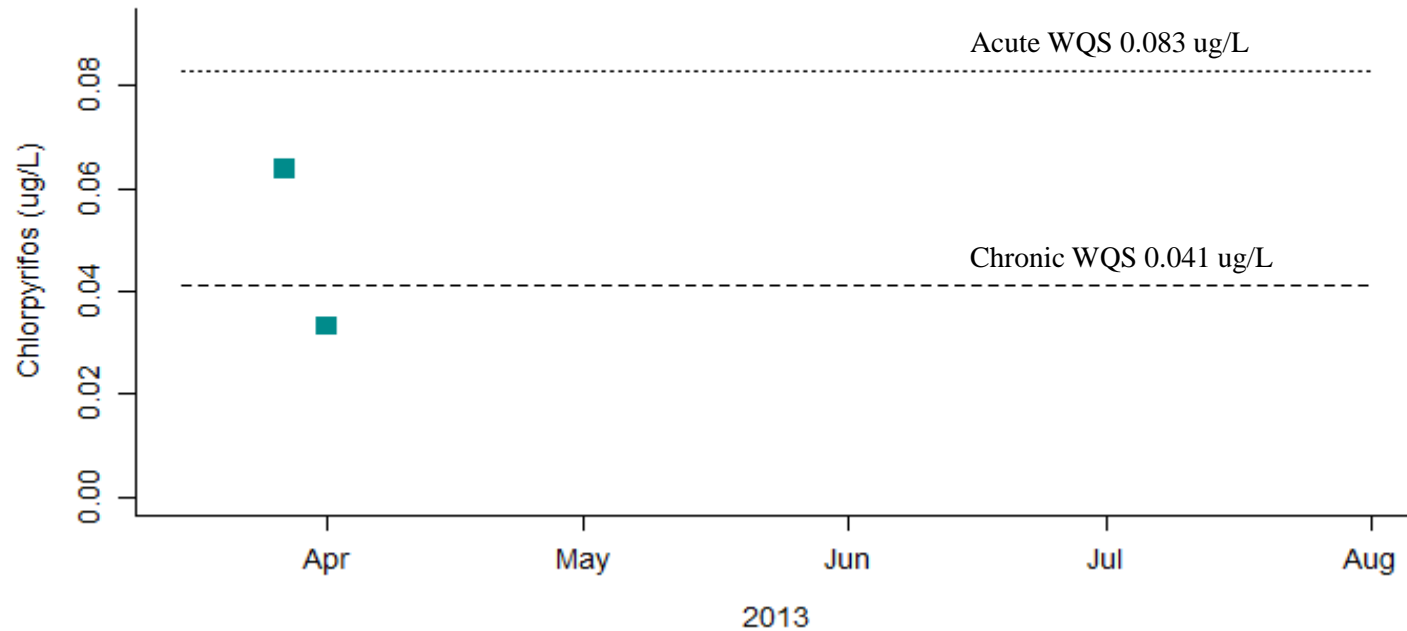
Median Concentration of Detections



Wasco Watersheds
Percent of Malathion Detects over 0.1 $\mu\text{g}/\text{L}$ Water Quality Criterion
2010-2013



Chlorpyrifos (Lorsban) – Wasco Watersheds 2013

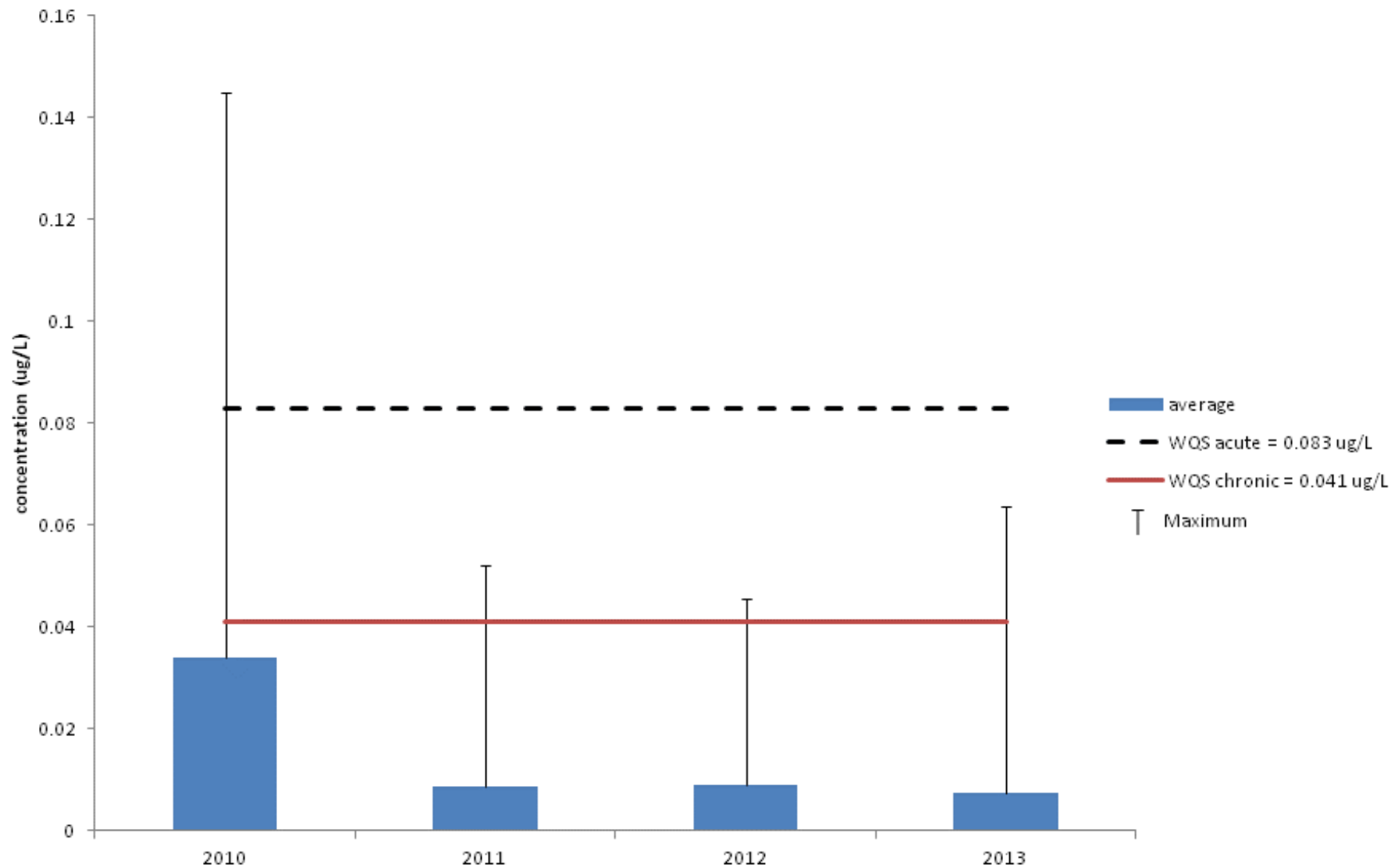


- Threemile Creek at Hwy 197
- Mill Creek at 2nd Street, The Dalles
- ▲ Mill Creek at Wright Road
- ◆ Fifteemile Creek Above Seufert Falls (AKA Cushing Falls)

Threemile Creek at Hwy 197

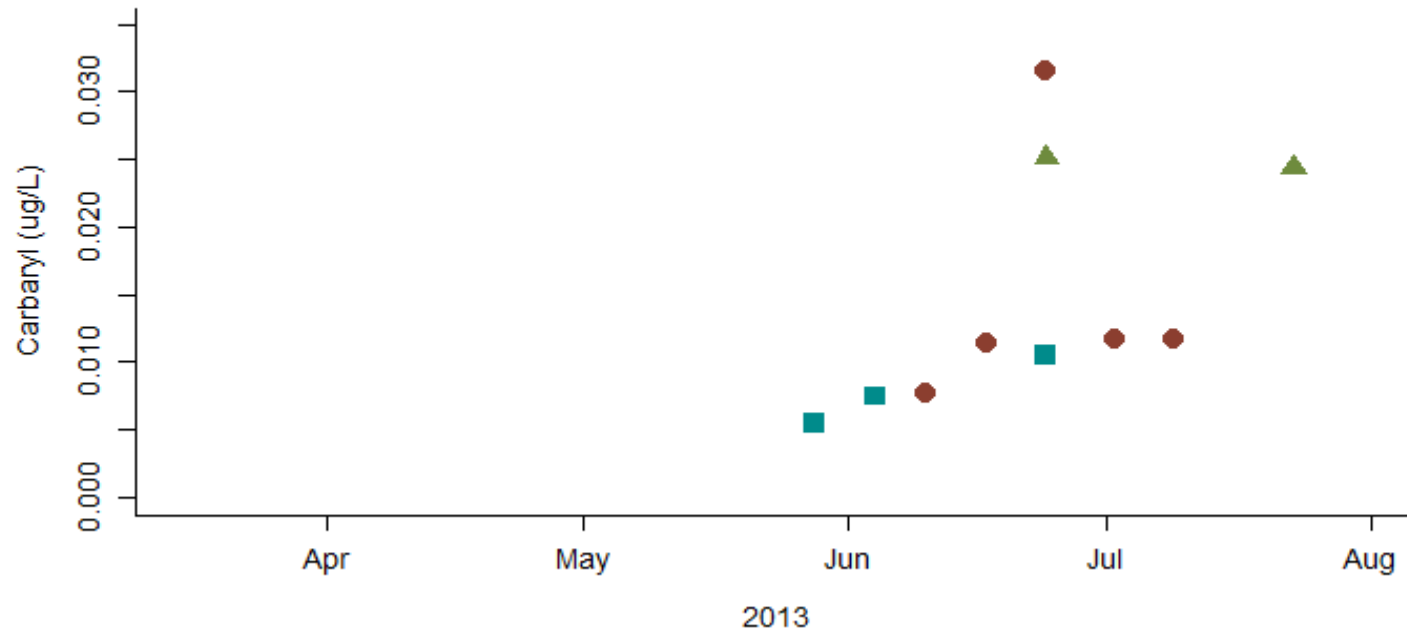
Average Chlorpyrifos (Lorsban) Concentrations

2010-2013



Carbaryl (Sevin) – Wasco Watersheds 2013

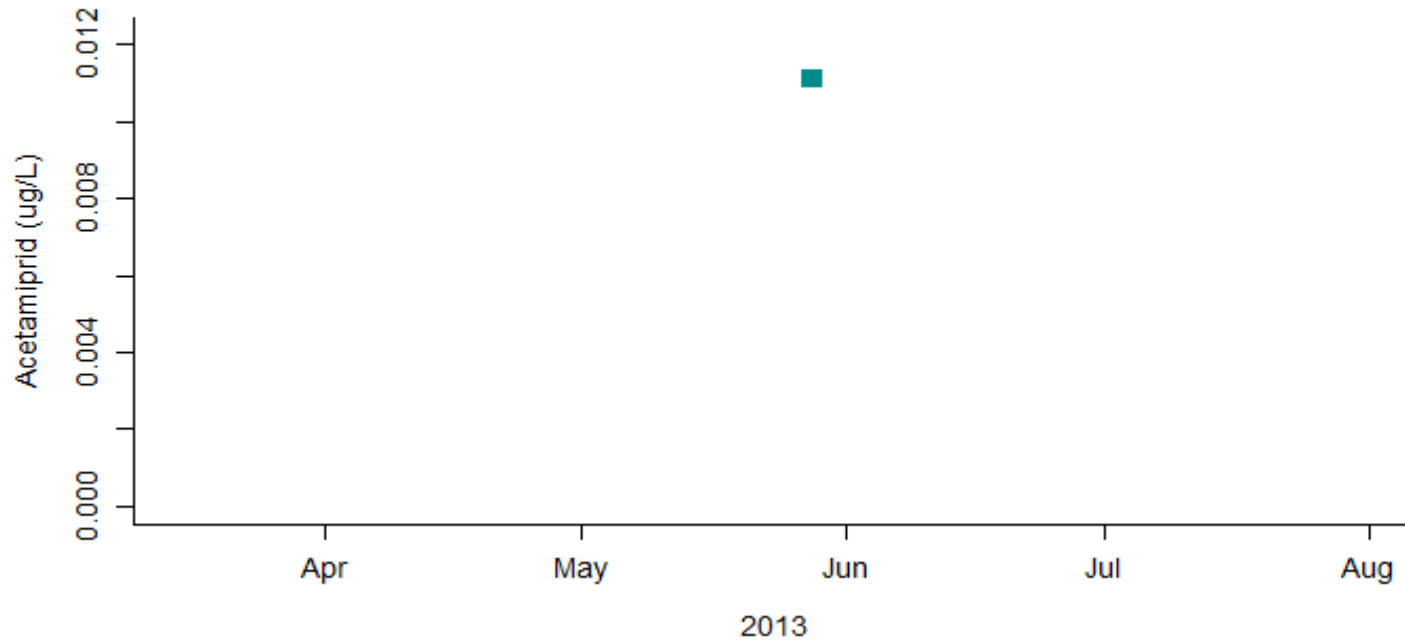
Aquatic Life Benchmark = 0.5 ug/L



- Threemile Creek at Hwy 197
- Mill Creek at 2nd Street, The Dalles
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Acetamiprid (Assail) – Wasco Watersheds 2013

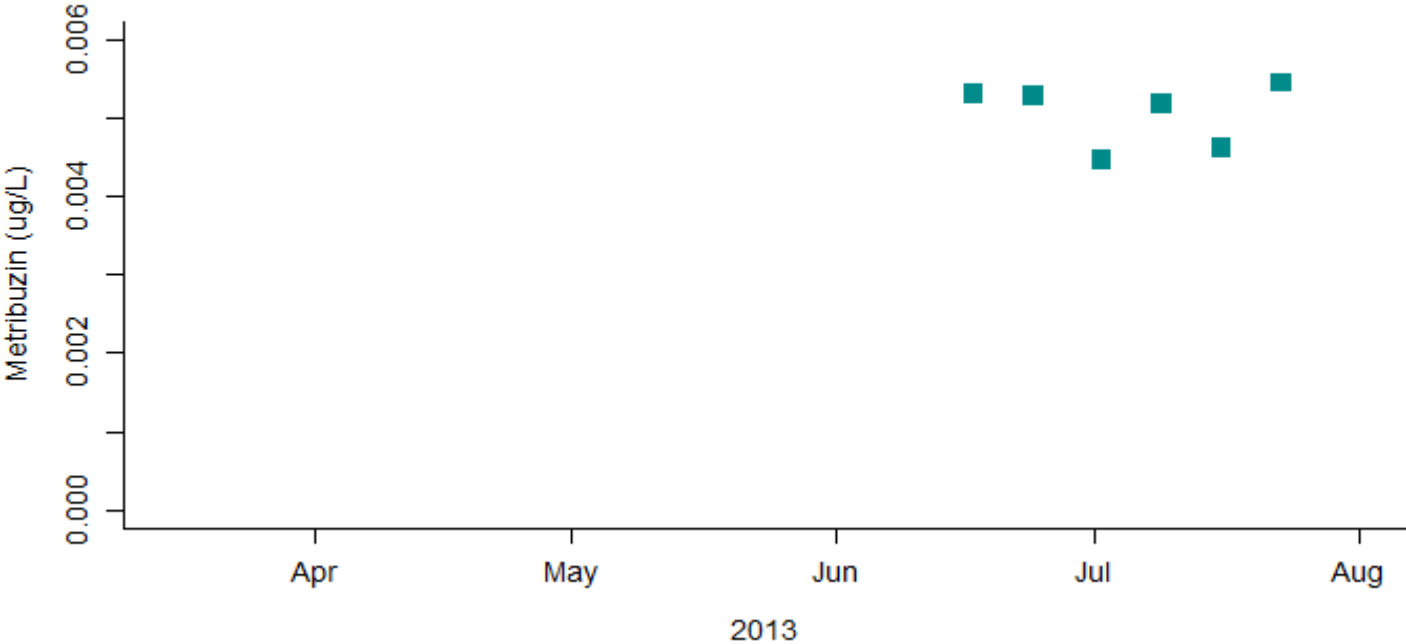
No EPA Benchmark



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

Metribuzin (Sencor, Lexone) – Wasco Watersheds 2013

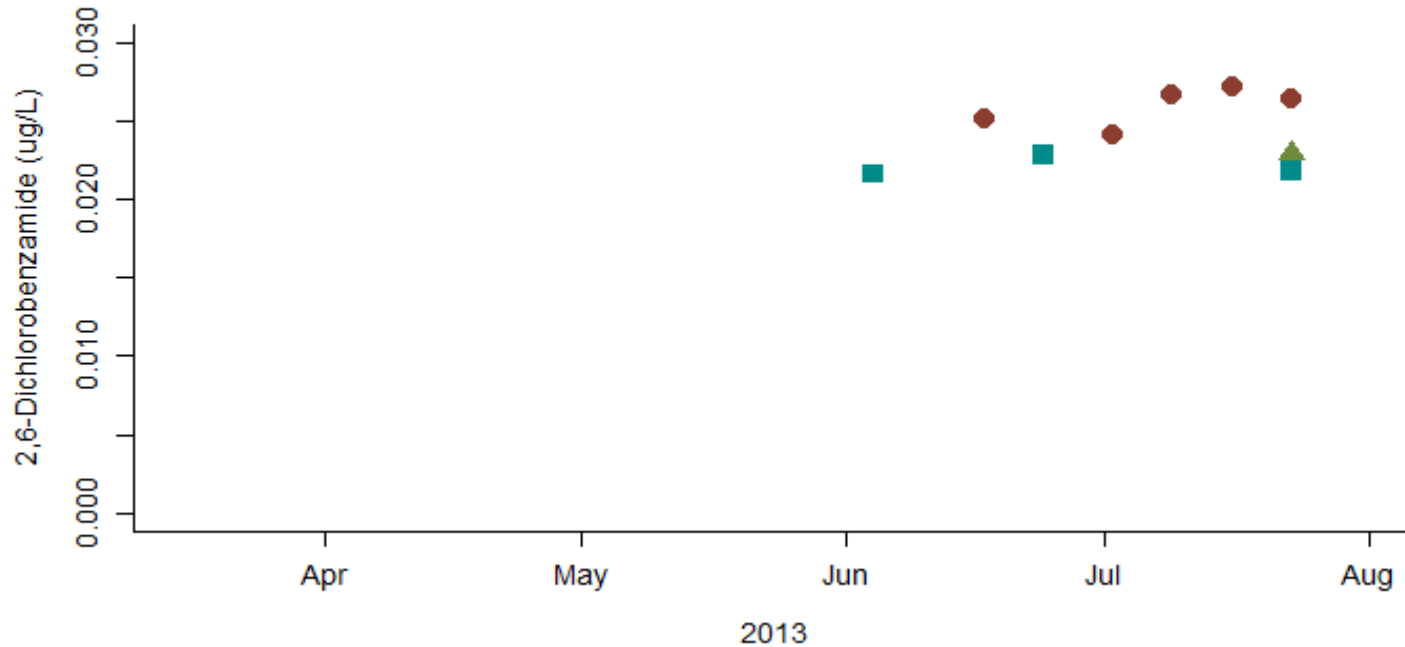
EPA Aquatic Life Benchmark = 8.7 ug/L



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

2,6-Dichlorobenzamide (Dichlobenil, Casoron) Wasco Watersheds 2013

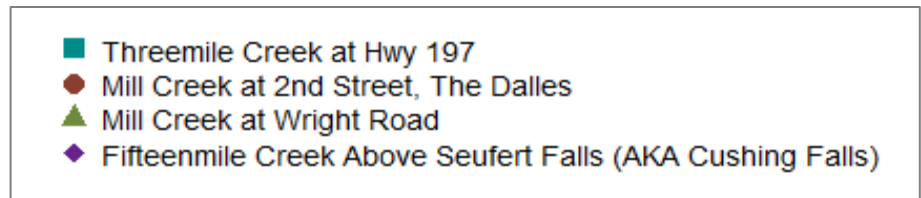
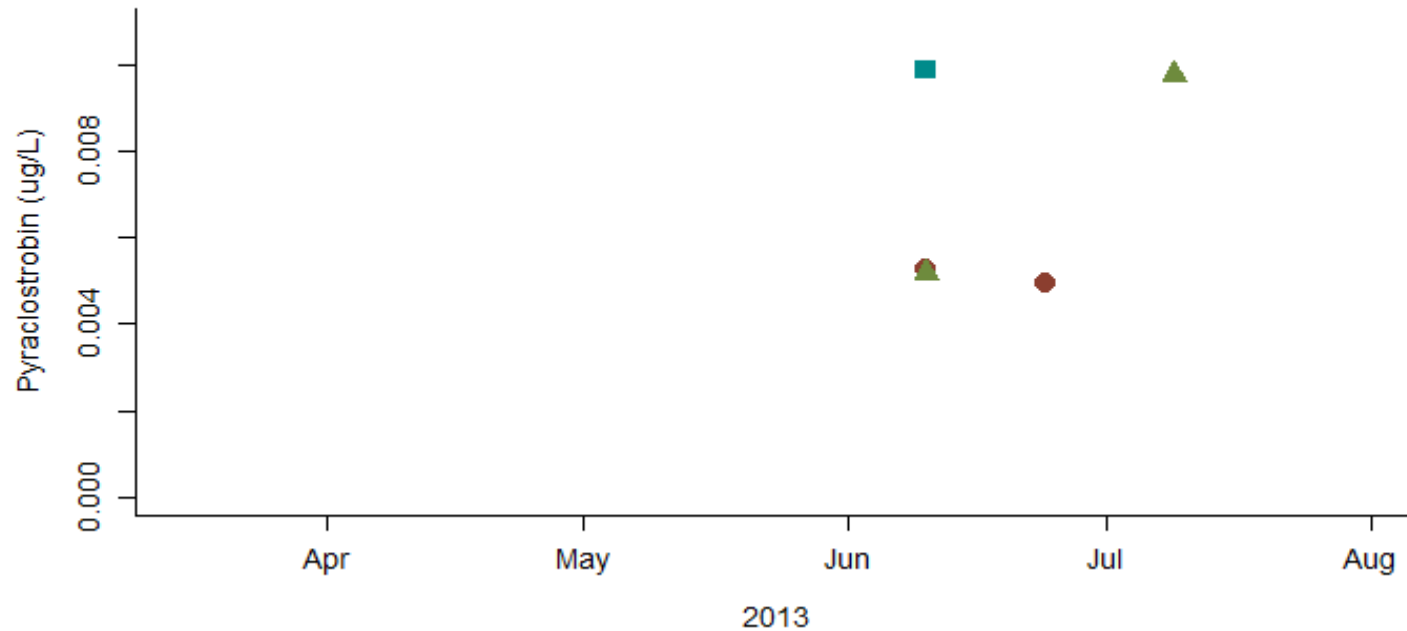
No Aquatic Life Benchmark



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

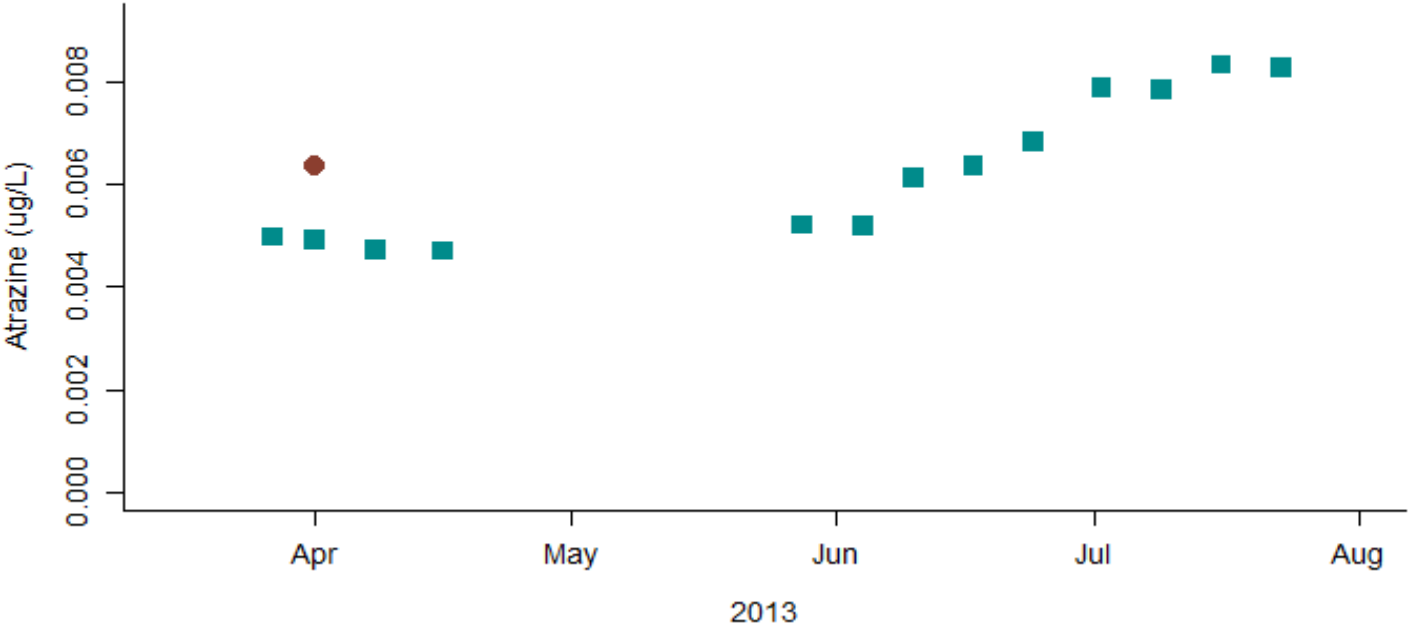
Pyraclostrobin (Headline, Cabrio) – Wasco Watersheds 2013

Aquatic Life Benchmark = 1.5 ug/L



Atrazine – Wasco Watersheds 2013

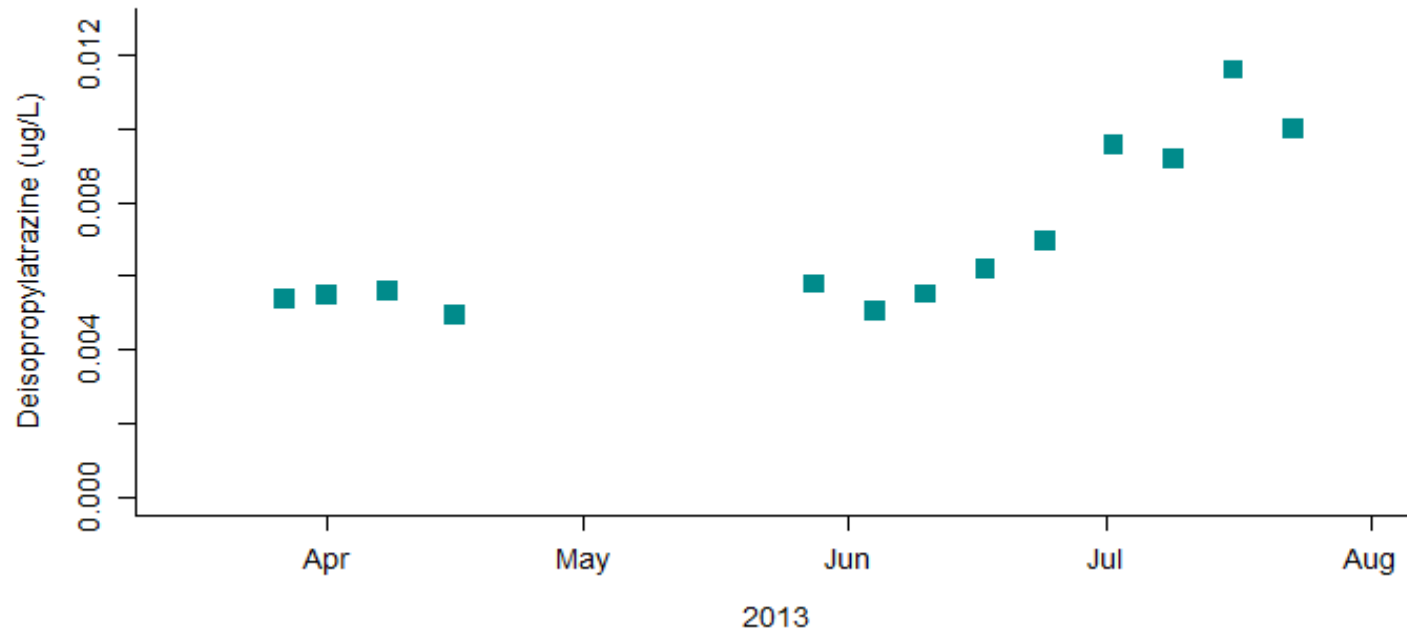
Water Quality Standard = 1 ug/L



- Threemile Creek at Hwy 197
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- ◆ Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)

Deisopropylatrazine – Wasco Watersheds 2013

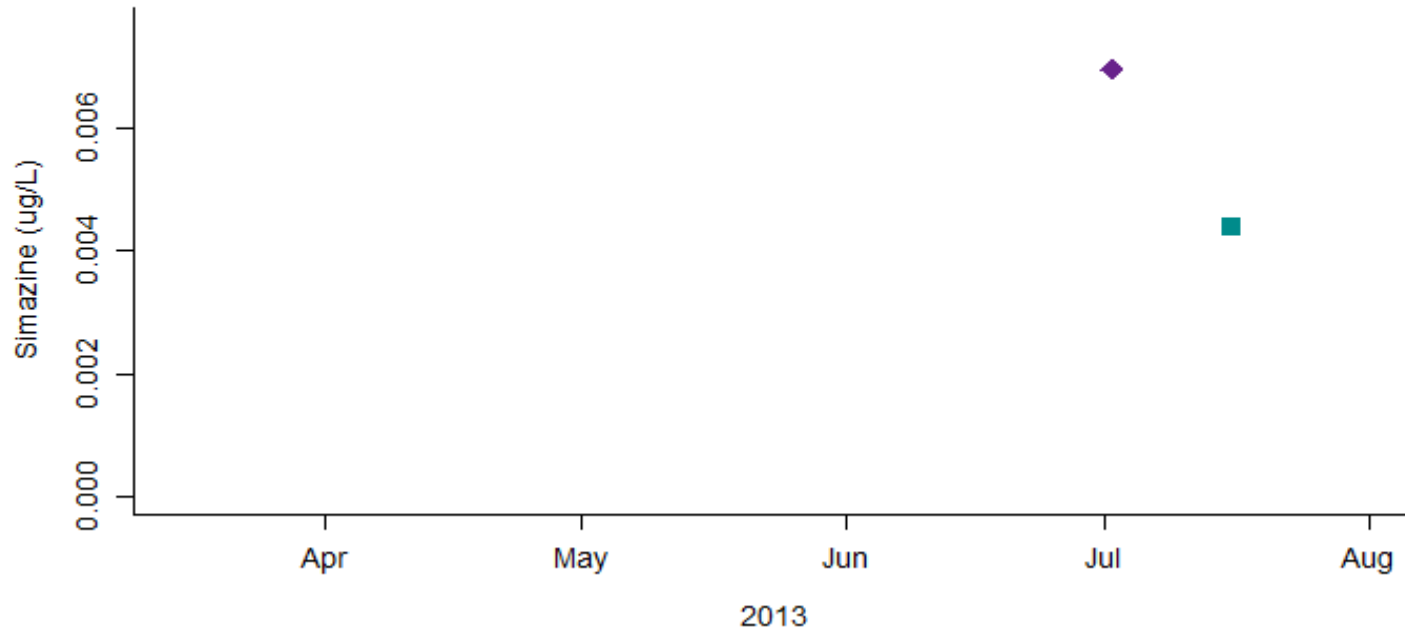
Aquatic Life Benchmark = 2500 ug/L



- Threemile Creek at Hwy 197
- Mill Creek at 2nd Street, The Dalles
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Simazine (Princep) – Wasco Watersheds 2013

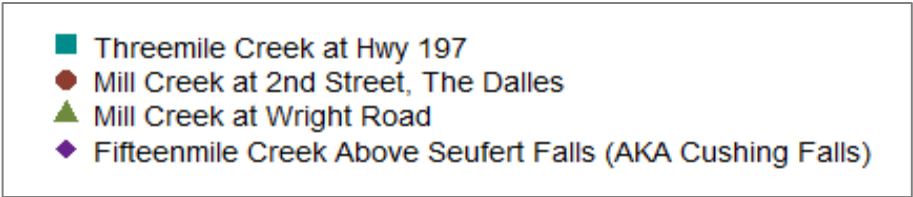
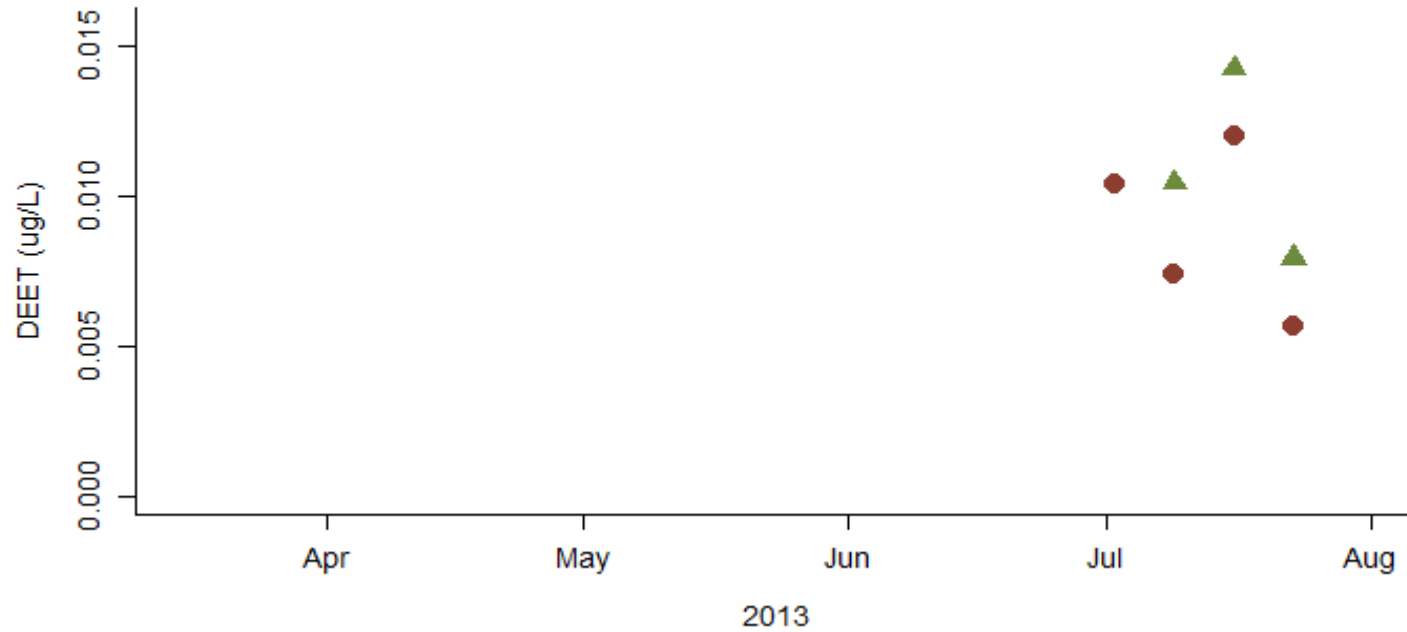
Aquatic Life Benchmark = 36 ug/L



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- ◆ Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)

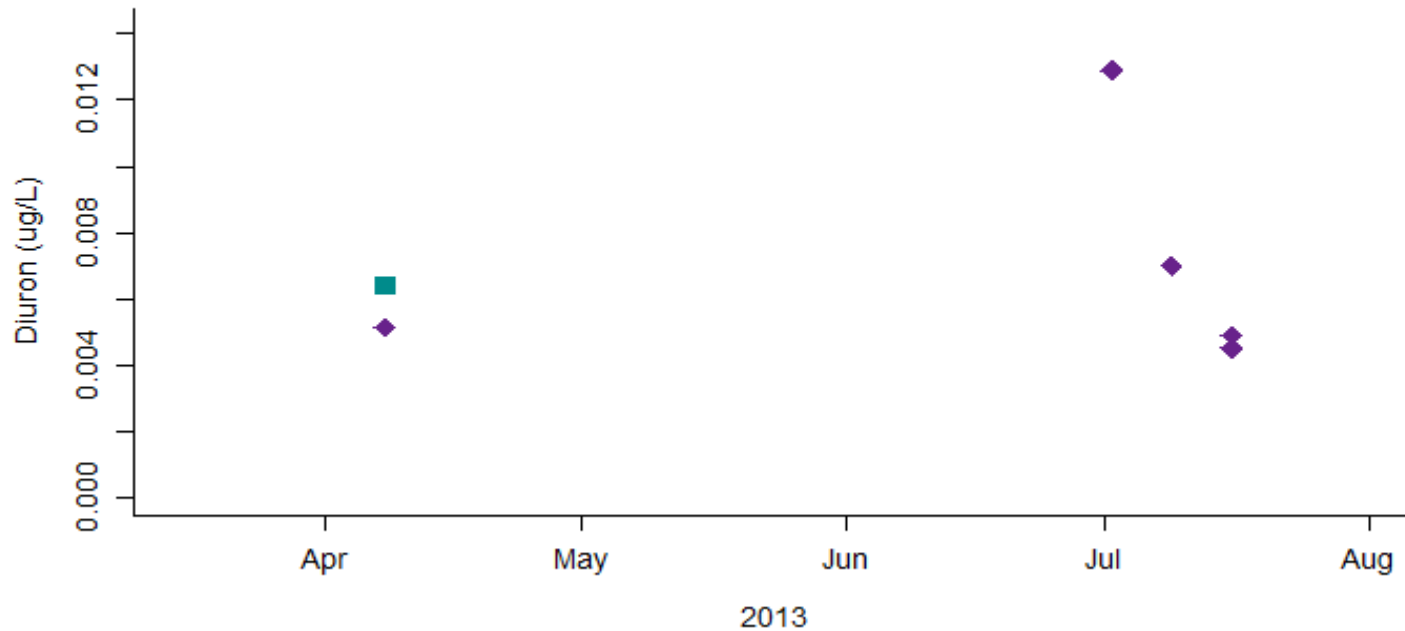
DEET – Wasco Watersheds 2013

No benchmark



Diuron (Karmex)– Wasco Watersheds 2013

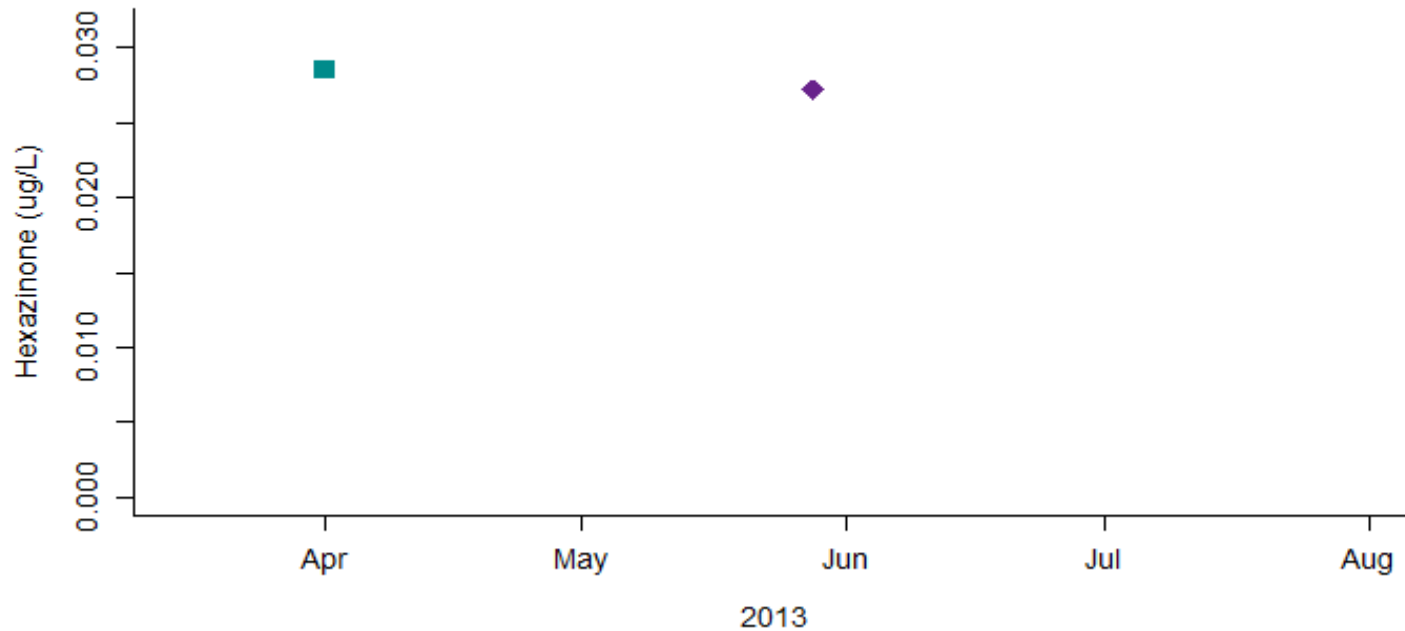
Aquatic Life Benchmark = 2.4 ug/L



- Threemile Creek at Hwy 197
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Hexazinone (Velpar) – Wasco Watersheds 2013

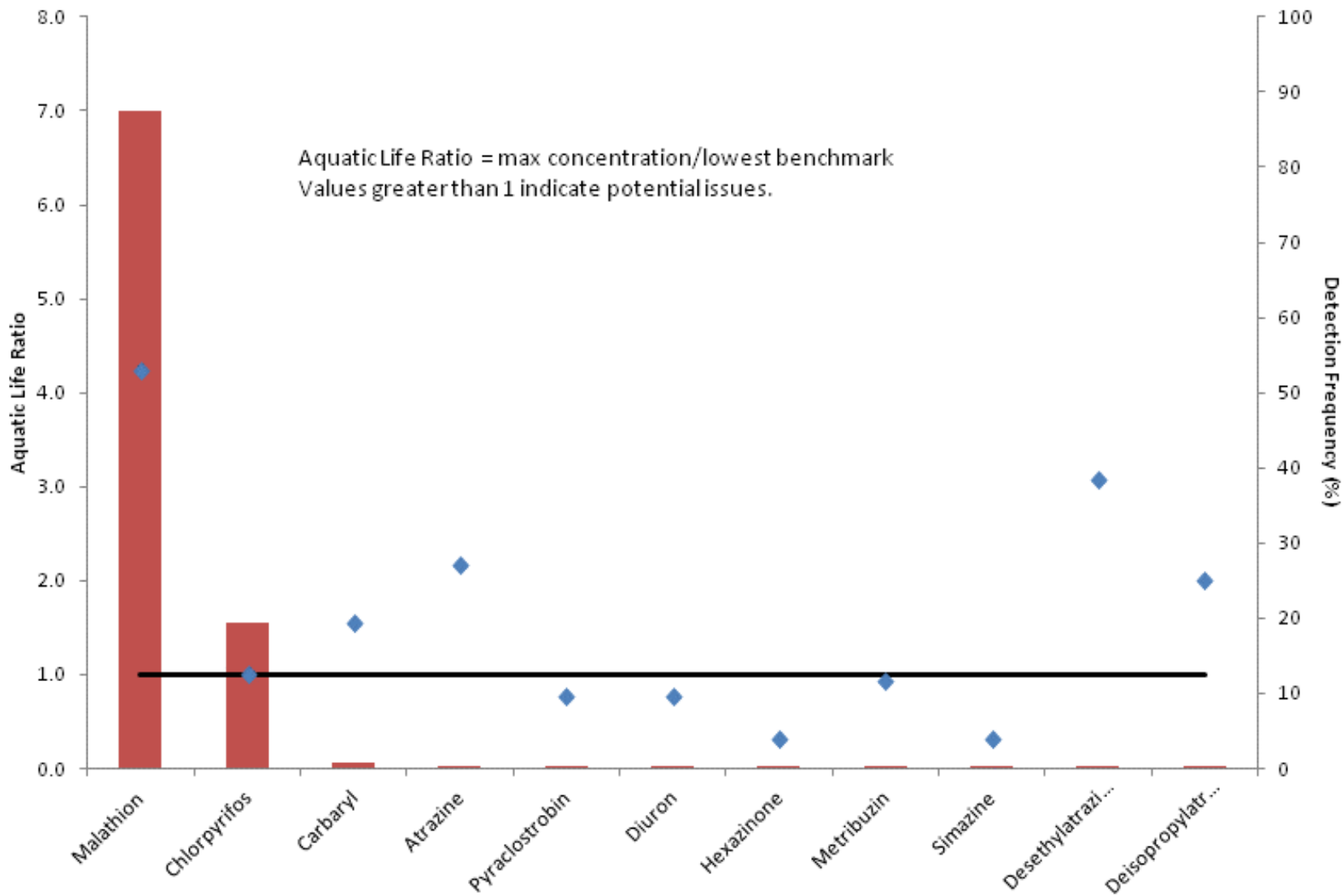
Aquatic Life Benchmark = 7 ug/L



- Threemile Creek at Hwy 197
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- ◆ Fifteenmile Creek Above Seufert Falls (AKA Cushing Falls)

Aquatic Life Ratio and Detection Frequency Wasco Watersheds 2013

- ALR
- ALR = 1
- ◆ detection frequency





Wasco Pesticide Monitoring Data: 2013 Summary

- 94% reduction in median **Malathion** concentrations between 2011 and 2013
 - Percent of detects over WQ Standard: → 85% in 2011 detections vs. 32% in 2013
- **Chlorpyrifos** (Lorsban) data consistent over past 3 years
 - 1 or 2 detections close to chronic standard in Threemile Creek
- All other pesticide detections well under the aquatic life benchmarks set by EPA
- Similar monitoring schedule planned for 2014

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.