



Oregon Fish Consumption Rate Project Meeting

MAY 2008

Oregon Pesticide Stewardship Partnerships



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Pesticide Stewardship Partnership Approach

Using collaborative partnerships, local expertise and voluntary actions to produce measurable water quality improvements



Pesticide Stewardship Partnerships: Overview

KEY STEPS IN PARTNERSHIP PROJECTS

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



**Identify streams with elevated pesticide
concentrations**



**Collaborate to implement voluntary
best management practices**



**Follow-up monitoring to determine water quality
improvements over time**



Pesticide Stewardship Partnerships: Overview

WHO ARE THE PARTNERS

- *Oregon Department of Environmental Quality*
- *OSU Extension Service*
- *Grower groups*
- *Oregon Department of Agriculture*
- *Soil and Water Conservation Districts*
- *Watershed Councils*
- *Agricultural Product Suppliers*



Origins of Pesticide Partnerships: Hood River Experience

- DEQ working on temperature issues in the Hood Basin in late 1990s
- Concerns raised about pesticide impacts on Steelhead and other fish species
- Fruit orchards = dominant ag land use
 - *Used organophosphate insecticides: chlorpyrifos (Lorsban) and azinphos-methyl (Guthion)*





Origins of Pesticide Partnerships: Hood River Experience

Spring Chlorpyrifos spraying in Hood River Basin





Hood River Pilot Project: Environmental & Ecological Data

- **The organophosphate (OP) insecticides chlorpyrifos and azinphos-methyl were above Oregon water quality standards**
- **Acetylcholine Esterase inhibition was observed in caged Steelhead at stream locations with elevated OP levels**
- **Indirect fish effects → decreased macroinvertebrate density and preferred prey items at OP sites**



Hood River Pilot Project: Collaborating on Improvements

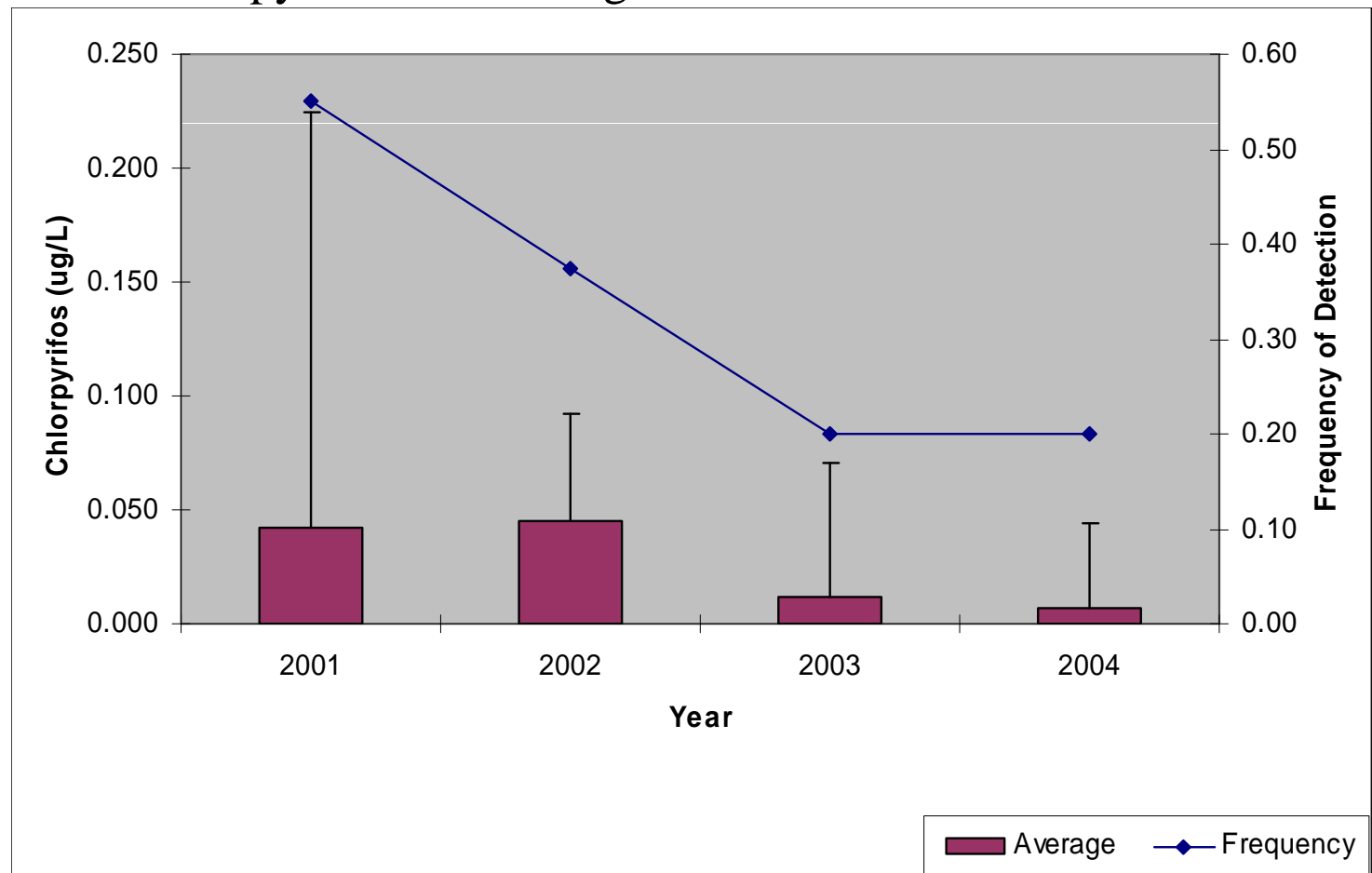
- Hood River Grower-Shipper Association BMP Handbook
 - *Providing information about recommended management practices related to pesticide use*
 - *Encouraging the reduction in the amount of organophosphate insecticides used in the Hood River Valley*
 - *Protecting and enhancing the quality of natural resources, especially local waterways*
- Training and Outreach
 - *Workshops and demonstration trainings, videos, newsletters in partnership with OSU Extension Service*



Pesticide Stewardship Partnerships: Historical Perspective

HOOD RIVER PILOT PROJECT

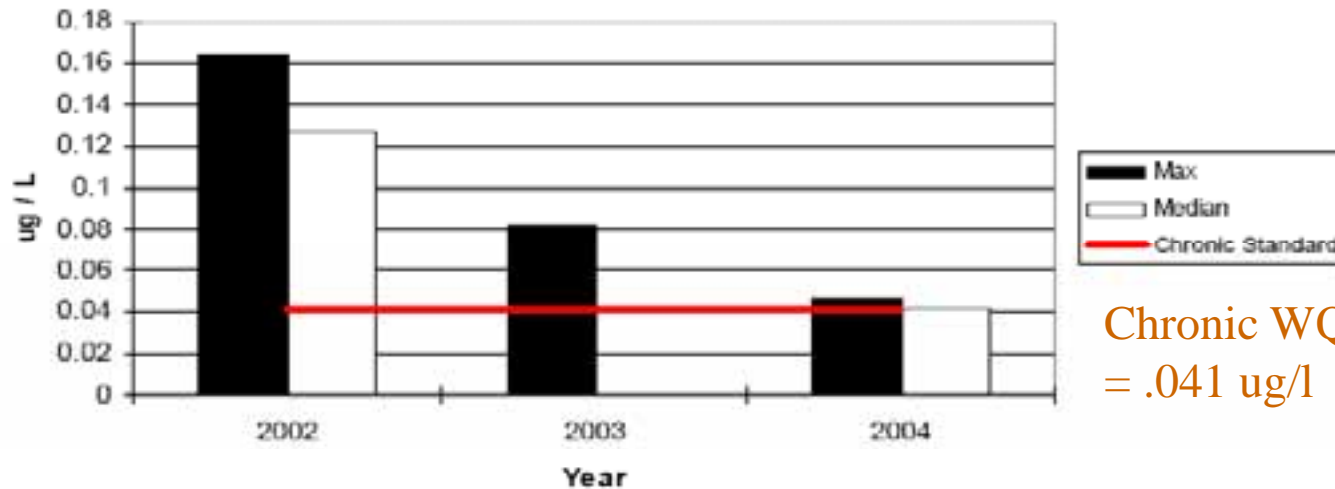
Chlorpyrifos Monitoring: Lower Neal Creek 2000-2004



Expanding Partnership Model: Mill Creek (The Dalles)

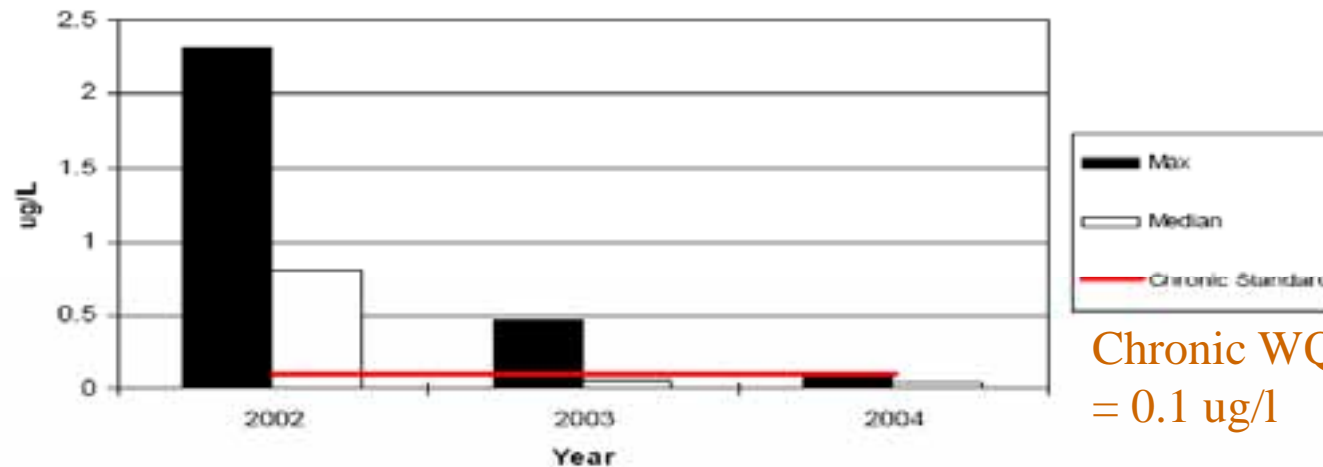
Fifteen Mile Creek Monitoring Results

Chlorpyrifos Sampling



Chronic WQ standard
= .041 ug/l

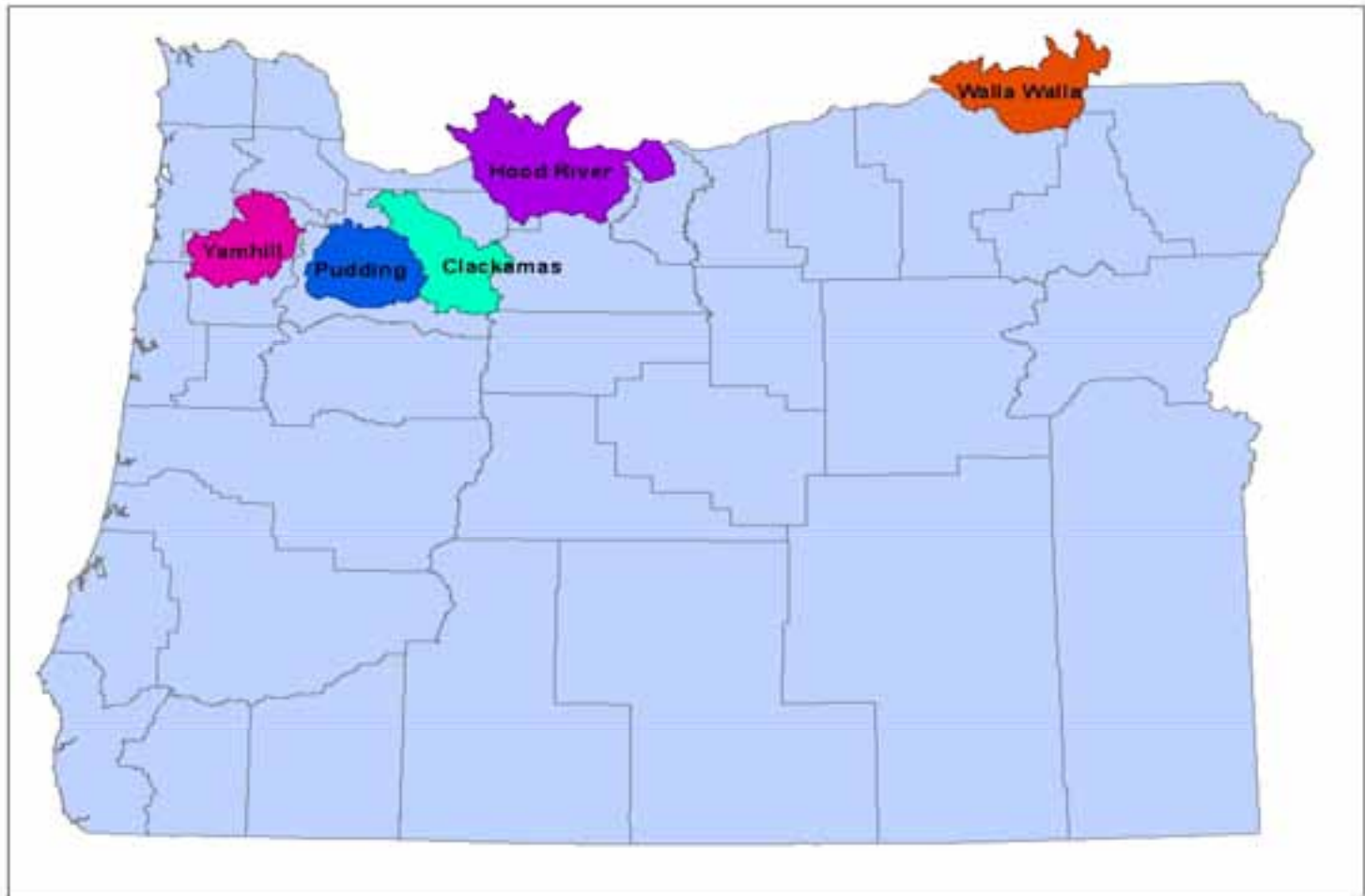
Malathion Sampling



Chronic WQ Standard
= 0.1 ug/l



Expanding Partnership Model: Four New Projects Since 2005





Walla Walla Basin Pesticide Stewardship Partnership

- Monitoring began in 2005, with high concentrations of OP insecticides found in “distributaries” in orchard areas
- Two new monitoring locations along distributaries added in 2006





Walla Walla Partnership: Collaborative Improvement Actions

- OSU Extension & Grower group technical assistance and outreach:
 - *March 2007 Spray Calibration Workshop*
 - *Promoting alternatives to organophosphates and other best practices*
 - *One-on-one applicator training*
 - *Buffer strips along streams*



- *Installation of weather stations by watershed council*



Walla Walla Basin Partnership: Removing Old “Legacy” Pesticides

- 2007 Ag Pesticide Waste Collection in Milton-Freewater
 - *7,600 pounds of waste pesticides*
 - *3,000 pounds of empty containers*
- 2006-2007: 6 ag collections for WQ protection purposes
 - *92,000 pounds of pesticide waste*

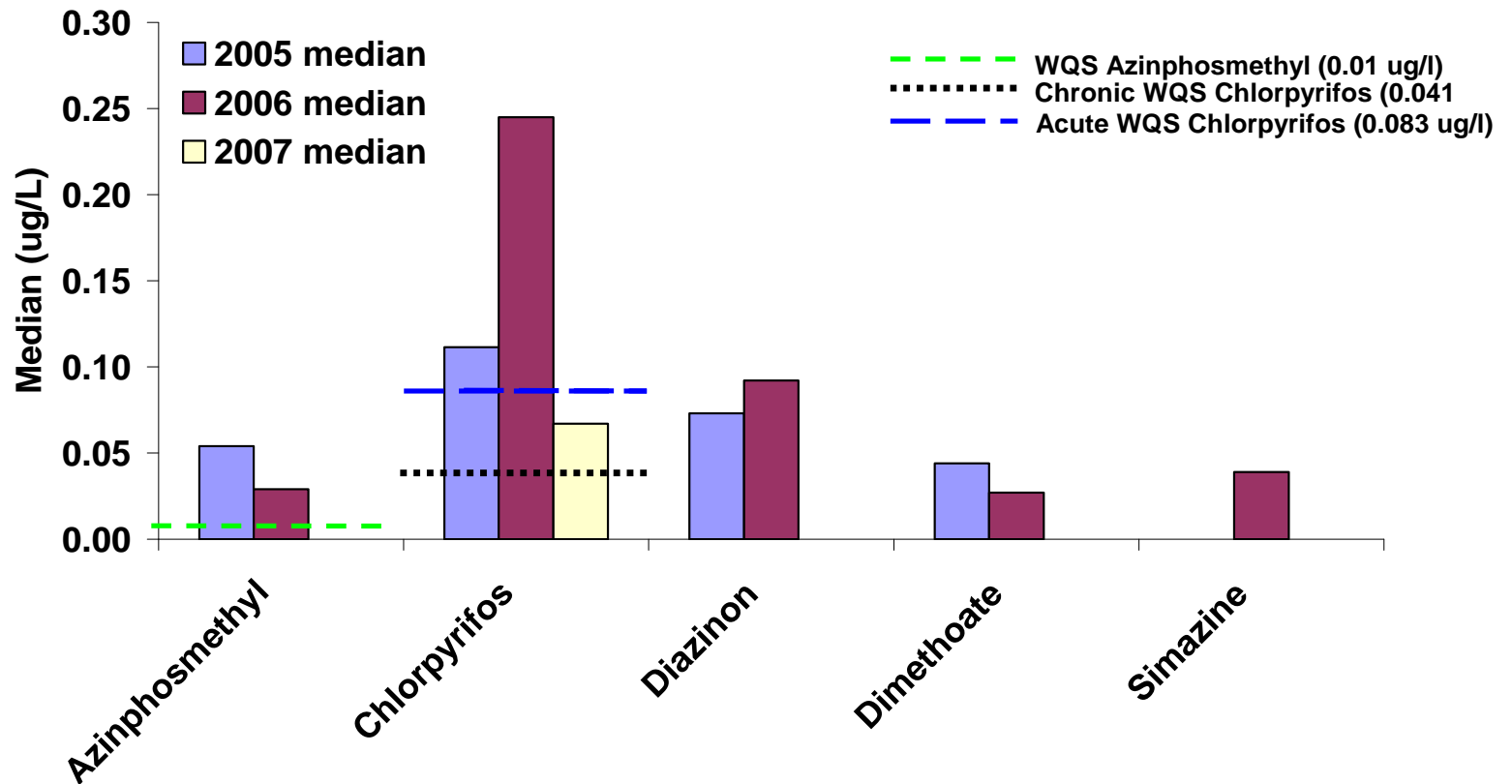




Pesticide Stewardship Partnerships: Documenting Improvements

WALLA WALLA: SITE-SPECIFIC RESULTS

Median Pesticide Concentrations:
West Prong Little WW River, N. Stateline Rd.

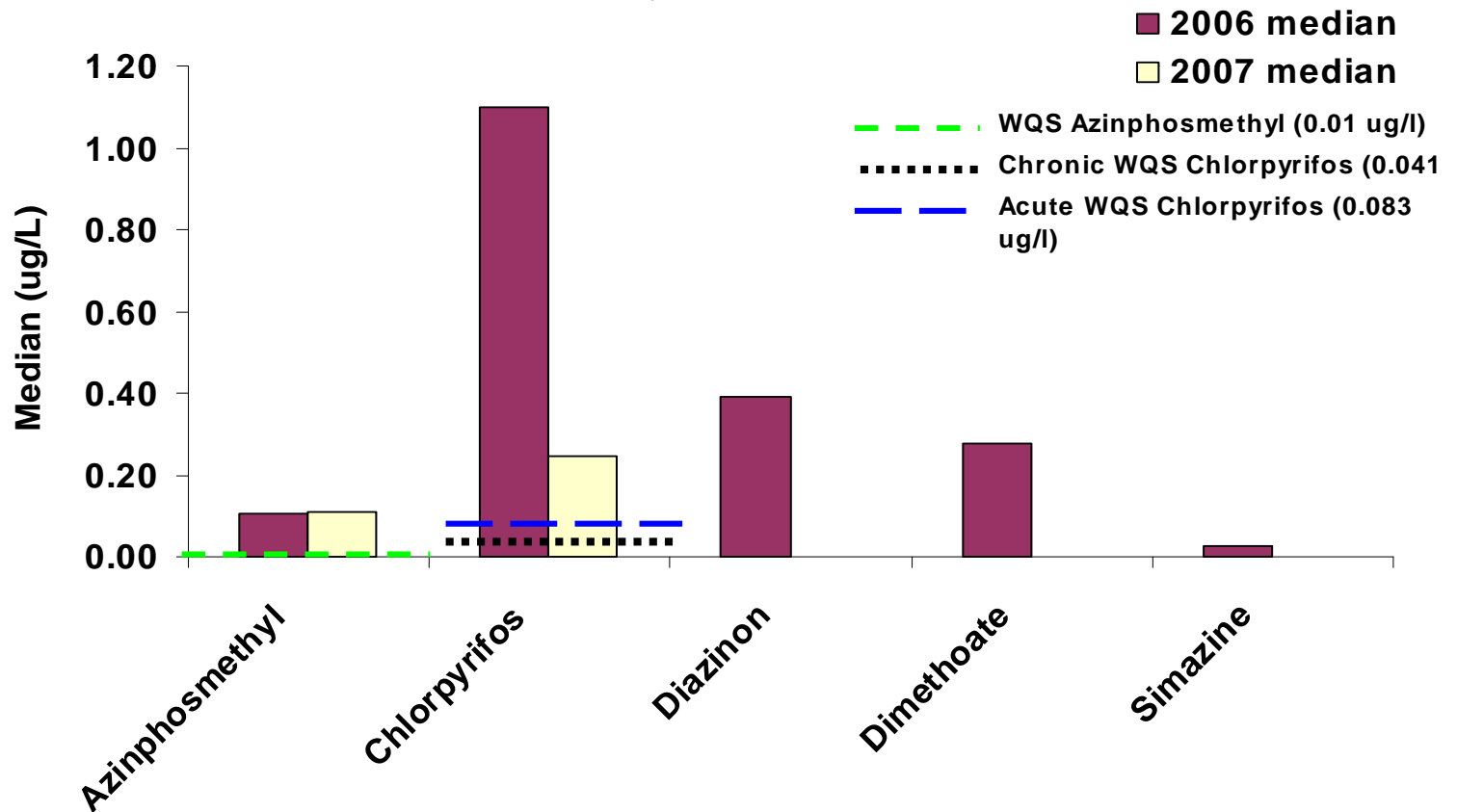




Pesticide Stewardship Partnerships: Documenting Improvements

WALLA WALLA: SITE-SPECIFIC RESULTS

**Median Pesticide Concentrations:
Little WW River, West Branch/Crockett**





Pesticide Stewardship Partnerships: Challenges and Opportunities

- Short-term results are possible in area with one or two agricultural land uses
- Willamette Valley projects more complex
 - Myriad of ag, urban and forest land uses pose challenges for source identification and outreach
- Need to establish “effects” levels for most current use pesticides
 - WQ standards exist only for a handful
- Some best practices require significant investment
 - Incentives would help ease the burden for ag sector



Plans for Pesticide Monitoring and Stewardship Activities

- DEQ expanding list of pesticides to be included in lab analyses, such as:
 - *Phenoxy herbicides (e.g., 2,4-D)*
 - *Carbamates (e.g., Carbaryl)*
 - *Fungicides (eg. Chlorothalonil)*
- Working towards more stable funding for PSP program
- State agencies (DEQ, ODA, ODF, Health) working together on statewide pesticide water quality plan
 - *Clackamas may be focus of pilot project*
 - *Establish water concentration benchmarks*