

An aerial photograph of the Little Spokane River valley. The river is a prominent blue-green feature, winding through a landscape of brownish-yellow brush and some evergreen trees. In the background, a dense forest of evergreen trees covers the hillsides. The foreground shows rocky terrain with sparse vegetation and some evergreen trees.

# Little Spokane River- PCB in Fish Tissue Verification Study

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# Project Objectives

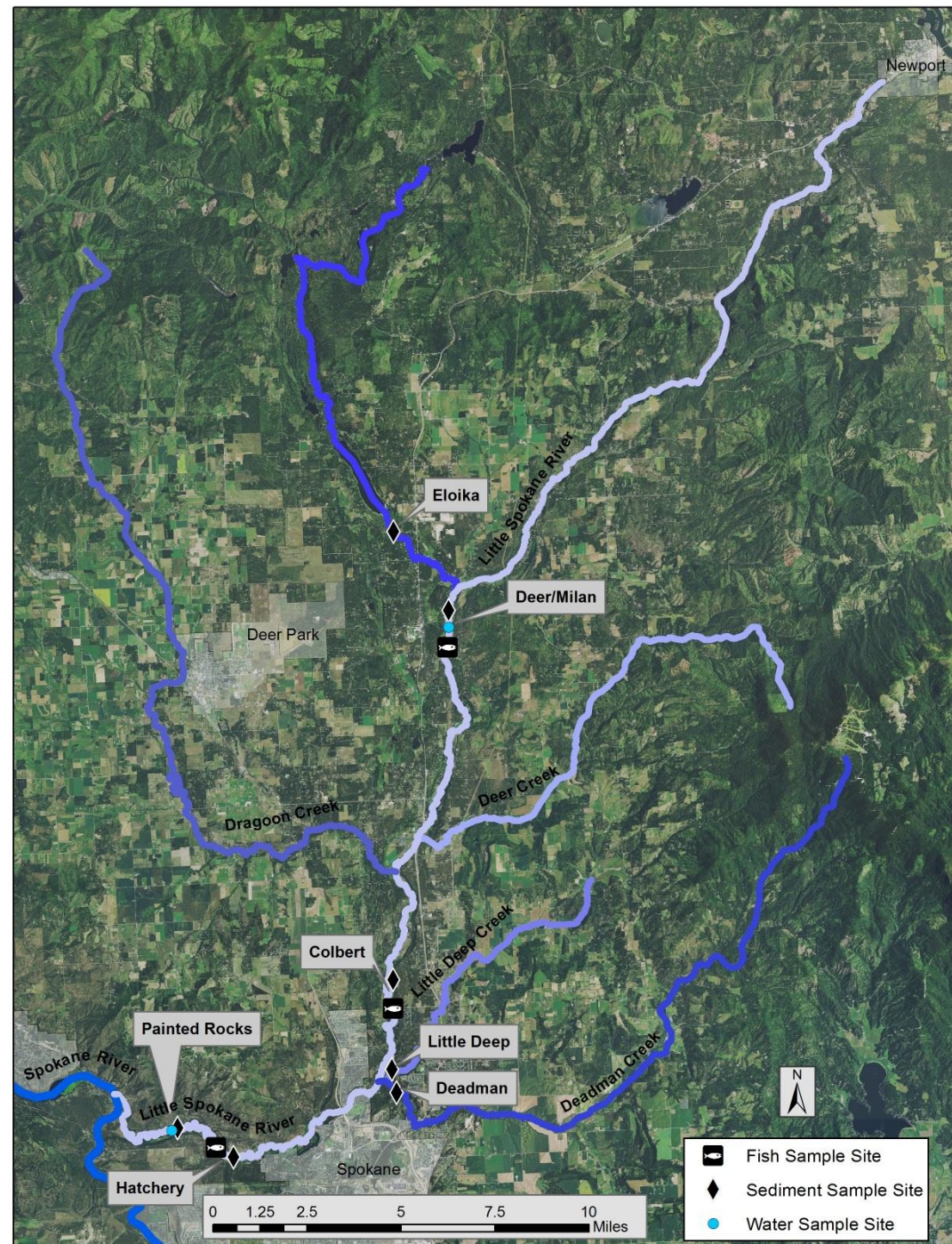
Assess current levels of PCBs in the Little Spokane River. Last sampling conducted in 1997 produced category 5 303(d) listings.

## Sampling

- Collected fish (as composites) upstream and downstream of the Spokane fish hatchery and analyze for PCB congeners.
- Collected sediment samples from spatially representative locations and analyze for PCB congeners.
- Collected water with Continuous Low-Level Aquatic Monitoring (CLAM) devices at two stream locations during high and low flow and analyze for PCB congeners.

## 7 Sediment Sites:

- Eloika
- Deer/Milan
- Colbert
- Little Deep
- Deadman
- Hatchery
- Painted Rocks



## 2 Water Sampling Sites:

- Deer/Milan- upstream “reference” site
- Painted Rocks- downstream of tributaries and major groundwater influences

## 3 Fish Collection Sites:

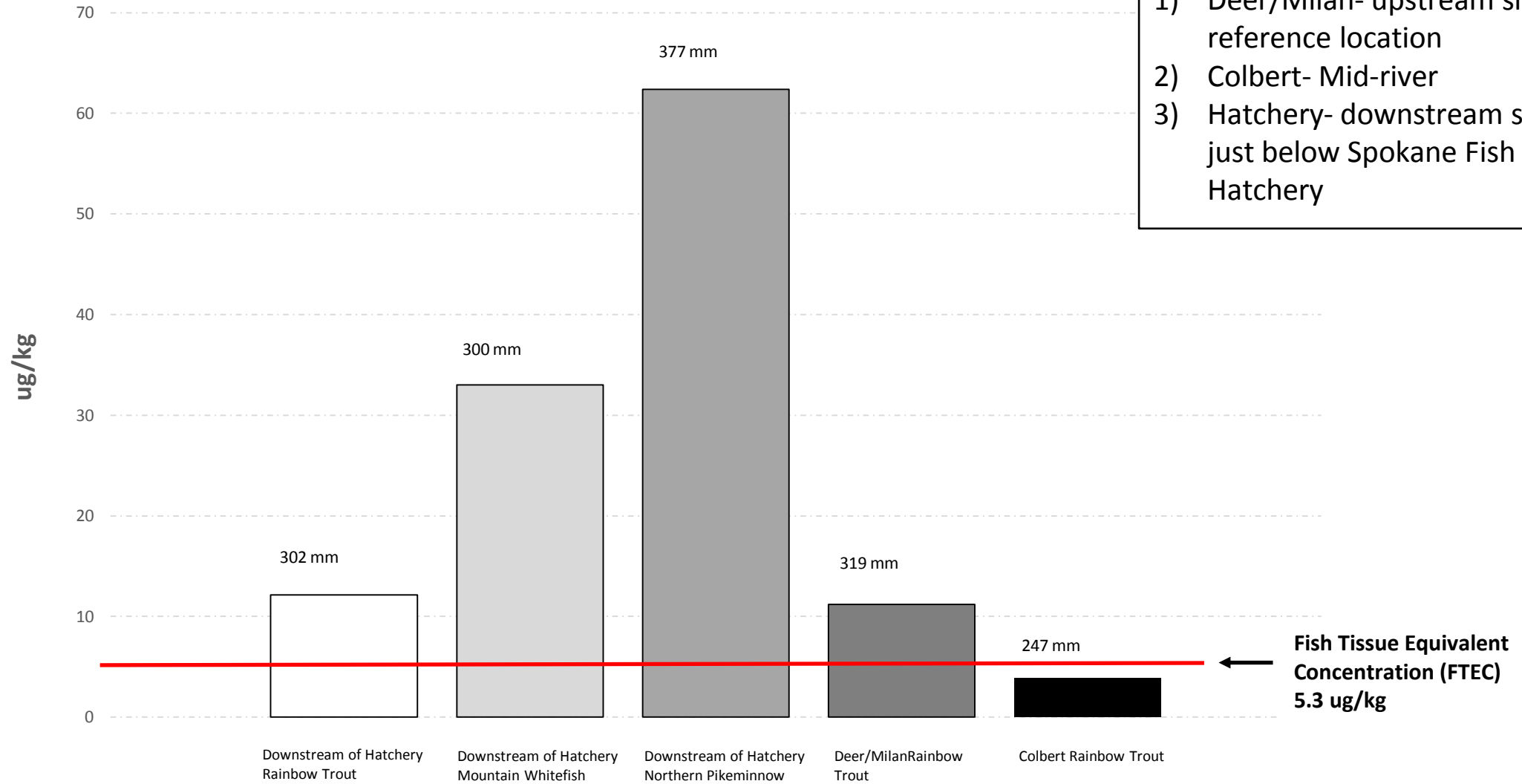
- Deer/Milan- upstream
- Colbert- midstream
- Hatchery- downstream

t-PCB in Little Spokane River Fish

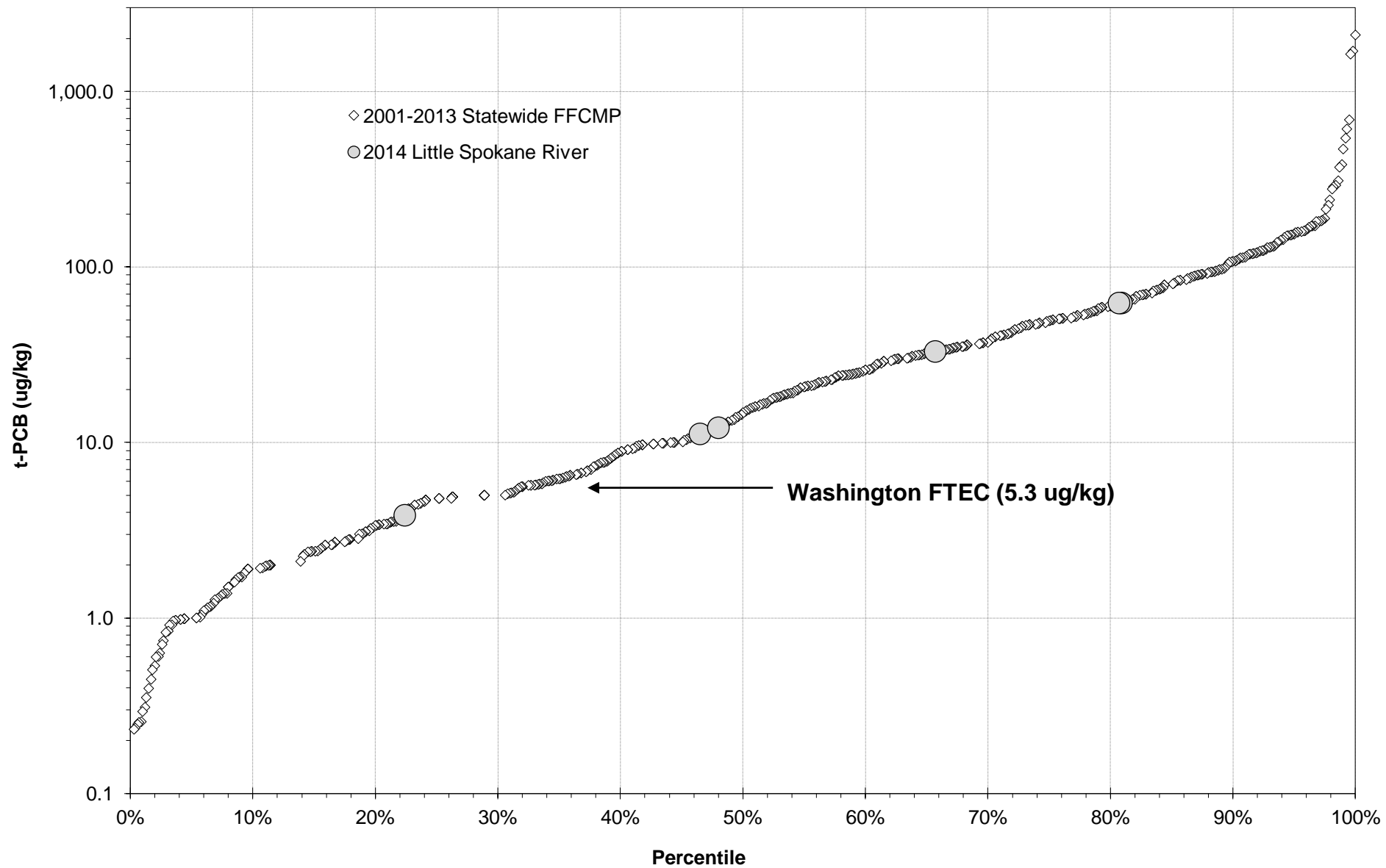
Species	Concentration (ug/kg)	Sample Type	Year Collected	Number in Composite	Data Source
Mountain whitefish	145	Fillet	1994	8	Ecology, 1995
Mountain whitefish	235	Fillet	1994	8	Ecology, 1995
Mountain whitefish	285	Fillet	1994	8	Ecology, 1995
Cutthroat trout	188	Fillet	1994	1	Ecology, 1995
Largescale Sucker	440	Whole Fish	1994	5	Ecology, 1995
Mountain whitefish	164	Fillet	1996	8	Johnson, 1997
Mountain whitefish	130	Fillet	1996	8	Johnson, 1997
Mountain whitefish	53	Fillet	1996	8	Johnson, 1997
Largescale Sucker	336	Whole Fish	1996	5	Johnson, 1997
Rainbow Trout	4	Fillet	2014	3	Present Study
Rainbow Trout	11	Fillet	2014	3	Present Study
Northern Pikeminnow	62	Fillet	2014	3	Present Study
Mountain Whitefish	33	Fillet	2014	1	Present Study
Rainbow Trout	12	Fillet	2014	1	Present Study
<b>FTEC</b>	<b>5.3</b>	<b>Fillet</b>	<b>n/a</b>	<b>≥ 3</b>	<b>National Toxics Rule</b>

# Total PCB in Little Spokane River Fish

Fish Sampled from 3 Locations:  
1) Deer/Milan- upstream site, reference location  
2) Colbert- Mid-river  
3) Hatchery- downstream site, just below Spokane Fish Hatchery



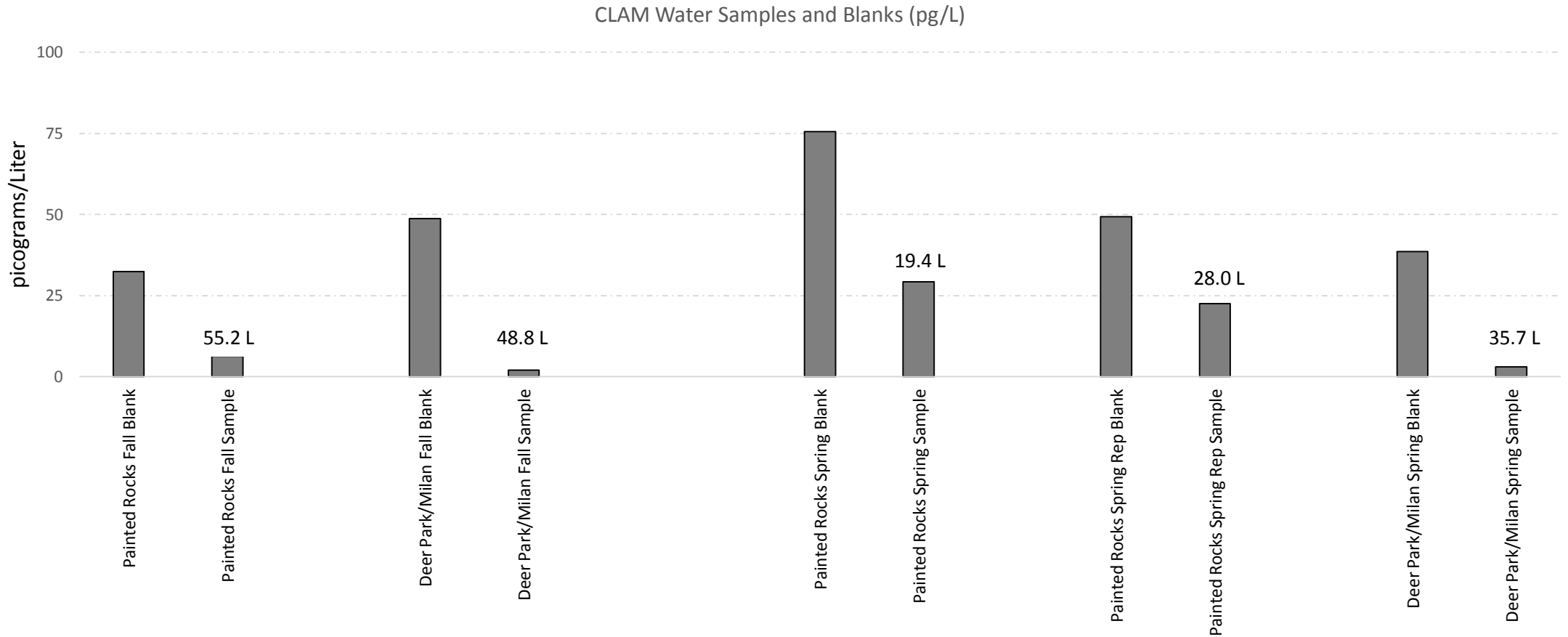
Distribution of Little Spokane River Fish t-PCB Results Within Statewide t-PCB Results



# Water samples collected with CLAM samplers

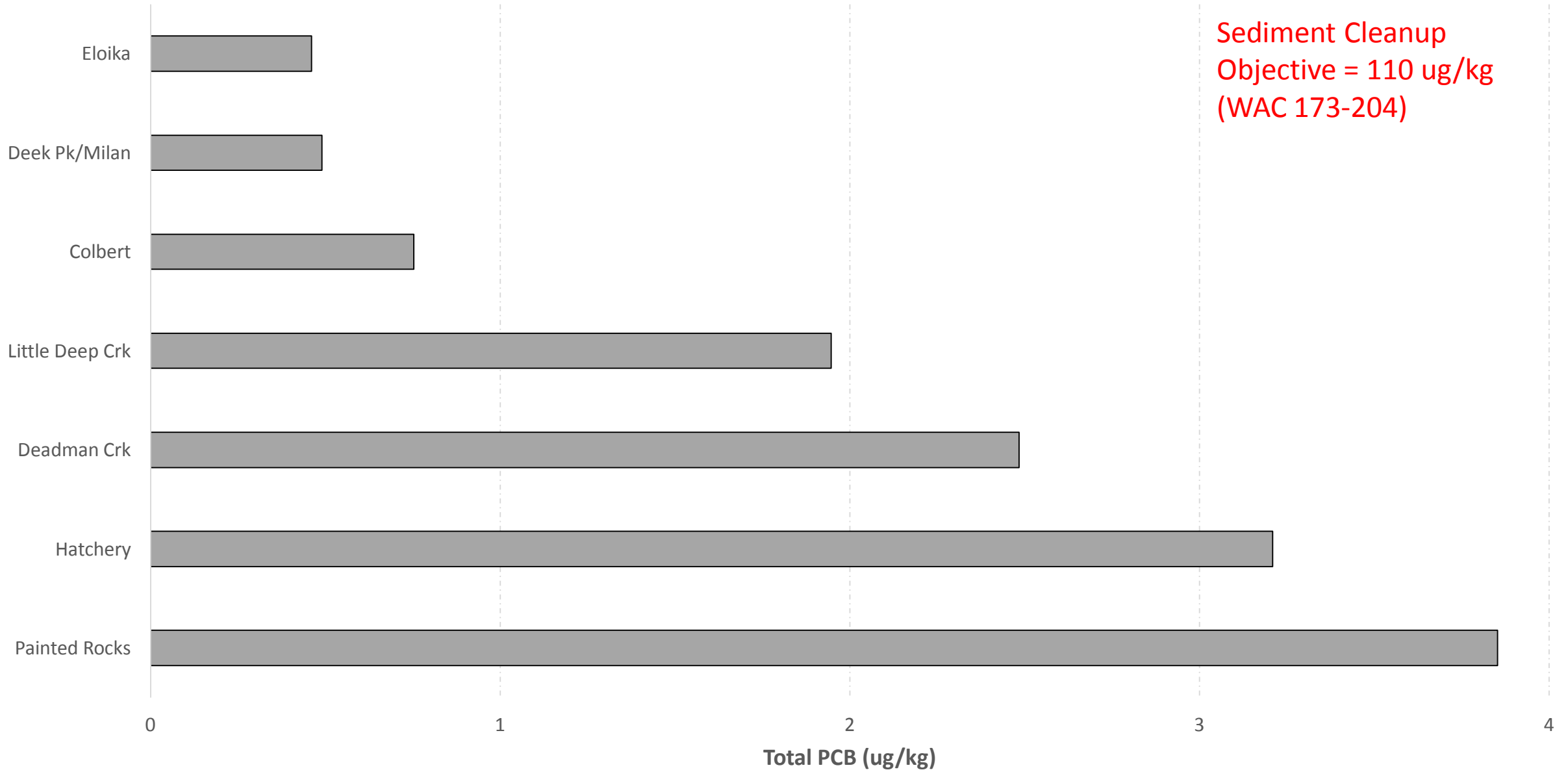
National Toxics Rule Human Health Criteria (as FTEC) = 170 pg/L

(sample volumes above histogram bars)



**Take home message- PCB concentrations were not high enough to separate from the background noise. PCB levels in Little Spokane River water were too low to reliably quantify.**

# Total PCB in Little Spokane River Sediments (ug/Kg)





# Conclusions:

- 3 of 4 fish composite samples exceeded Human Health Criteria (as FTEC) from the National Toxics Rule.
- Despite blank issues and system noise, CLAM collected water samples indicate low concentrations of PCB in water.
- Sediment results show a pattern of PCB concentrations increasing downstream, concentrations range from 0.5 to 3.9 ug/kg.
- PCB concentrations in most fish tissue are at or just above background levels, Northern Pikeminnow are elevated above Washington background levels which were established during an Ecology study that assessed PCB concentrations in waterbodies that exhibited relatively low direct impact from human activities.