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Location: Trail, British Columbia
Date: February 2012

Upper Columbia River (UCR) Remedial Investigation Feasibility Study (RI/FS) Update

- Status check against the Settlement Agreement
- Data snapshot
- Next Steps

Upper Columbia River Background – Settlement Agreement

- In June 2006 we signed an Agreement with the U.S. Environmental Protection Agency (EPA), in which we agreed to voluntarily carry-out a Remedial Investigation/Feasibility Study under the oversight of EPA, and with the participation of the following parties:
 - The State of Washington (Ecology),
 - The U.S. Department of Interior, and
 - The Tribes (Colville and Spokane).

Agreement - Status

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February 2012

SOW TASK / DELIVERABLE DESCRIPTION	STATUS
Risk-Management Based Action Objectives	Completed - Approved
Problem Formulation - RI/FS Work Plan	Completed - Approved
Screening Level Ecological Risk Assessment	Completed - Approved
BERA Work Plan	Completed - Approved
Sampling Designs and Data Collection (Field Programs)	
Beach Sediment	Completed
Fish Tissue	Completed
Surface Water	Completed
White Sturgeon – <u>Surface Water</u> Toxicity Tests	Completed
White Sturgeon – <u>Sediment</u> Toxicity Tests	Completed

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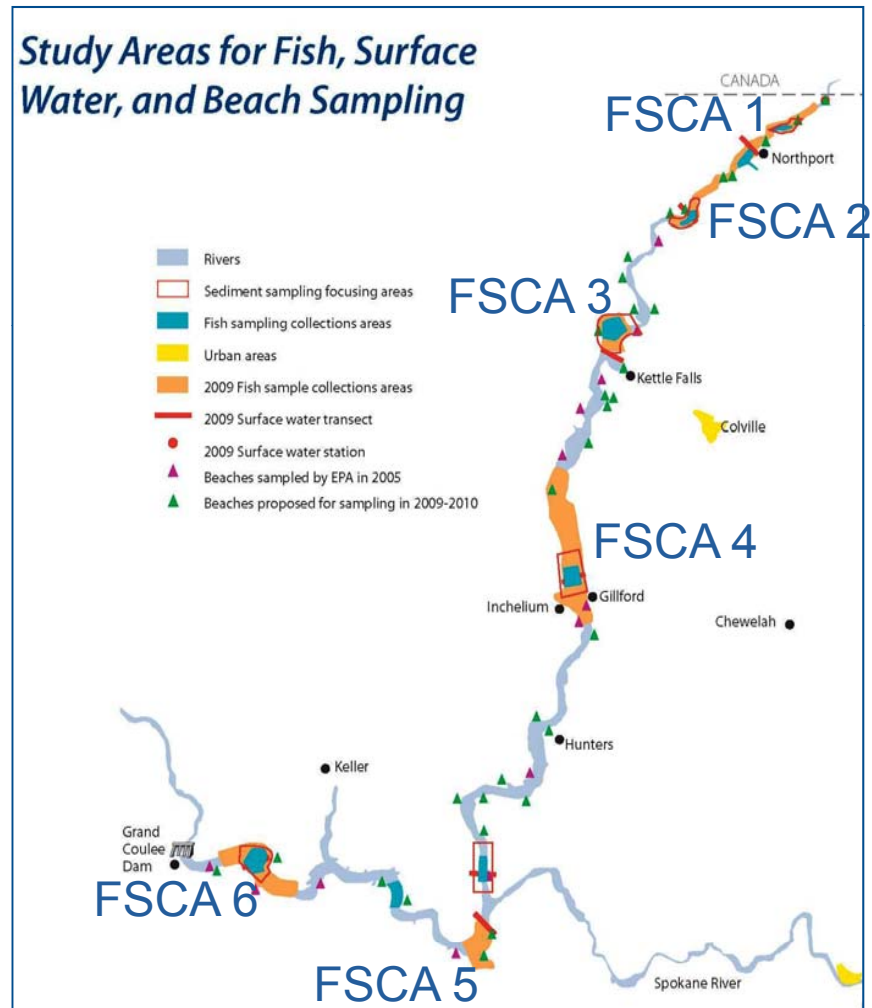
Agreement - Status

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TASK / DELIVERABLE DESCRIPTION	STATUS
Plankton Tissue	Deferred by EPA
Sediment / Pore Water	Under EPA Review - 2012
Macro-invertebrate (Mussels) Tissue	2012
Upland Soils	2013

- In short:
 - Have fulfilled >80 percent of our commitment as specified under the Settlement Agreement

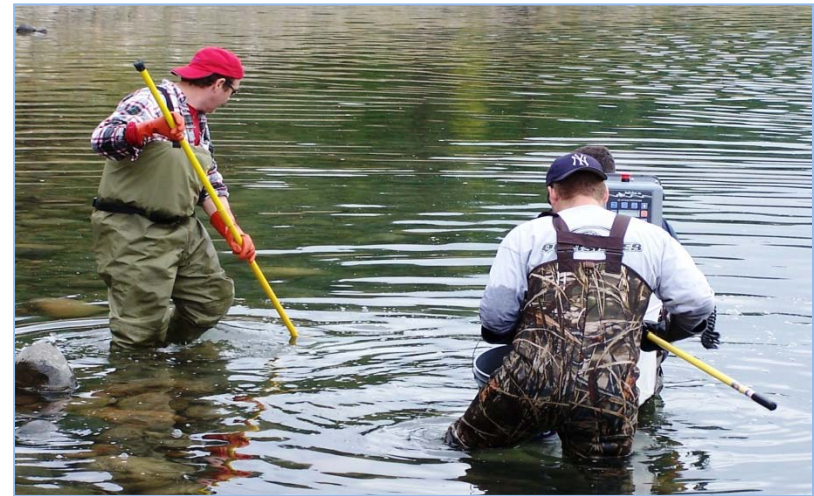
- Field programs completed:
 - Fish tissue
 - Surface water
 - Beach sediments
 - White sturgeon toxicity tests
 - Tribal use survey
 - Recreational use survey



Fish Sampling Program Overview

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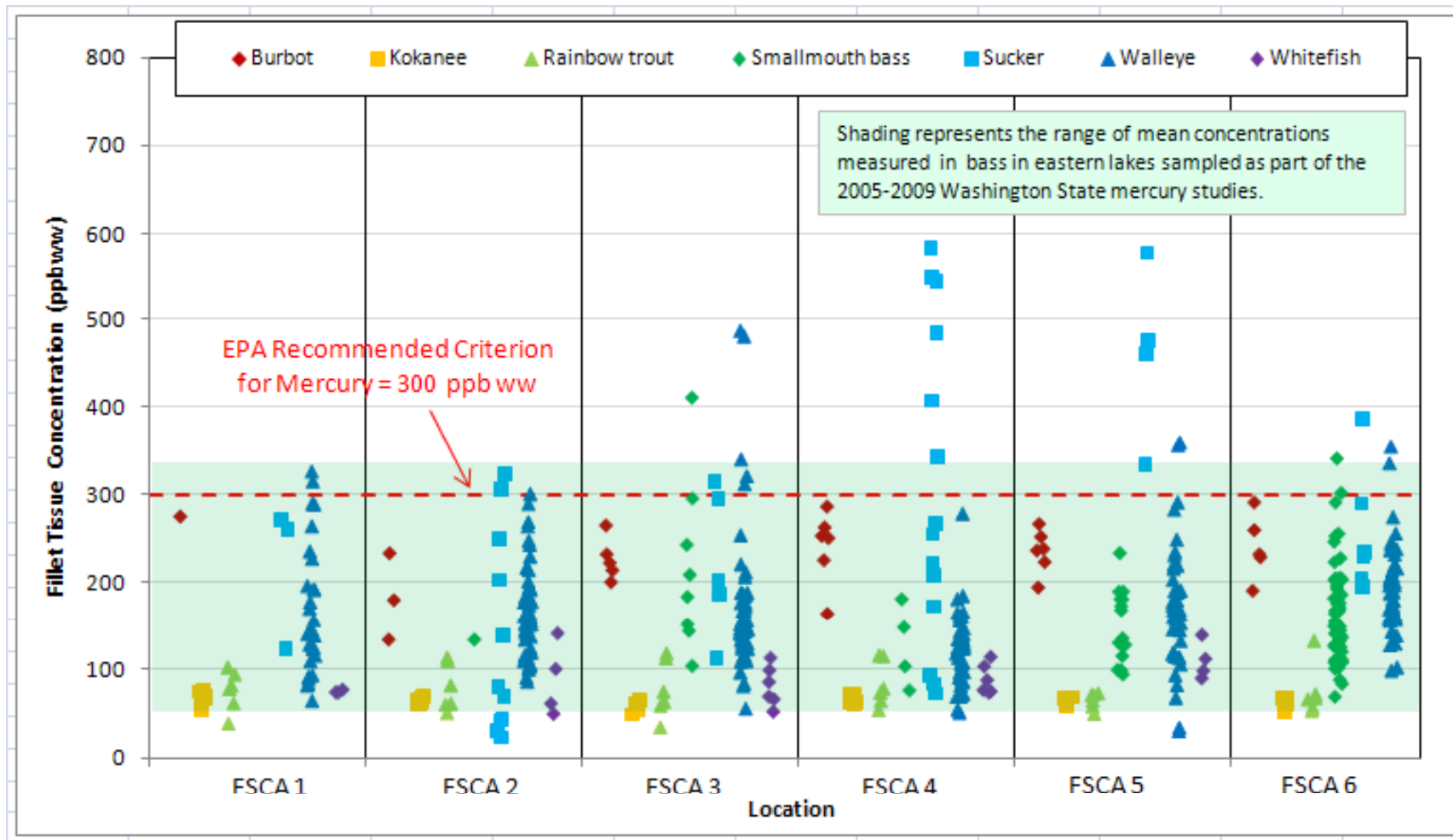
- Over 2,300 fish caught between Sept. 28 to Oct. 18, 2009
- Six areas spanning the entire site were targeted
- Three size class within each area were sampled
 - Small (<6 in.)
 - Medium (6-12 in.)
 - Large (>12 in.)



Fish Sampling Program Results

Mercury in Fillet Tissues (>12 in.)

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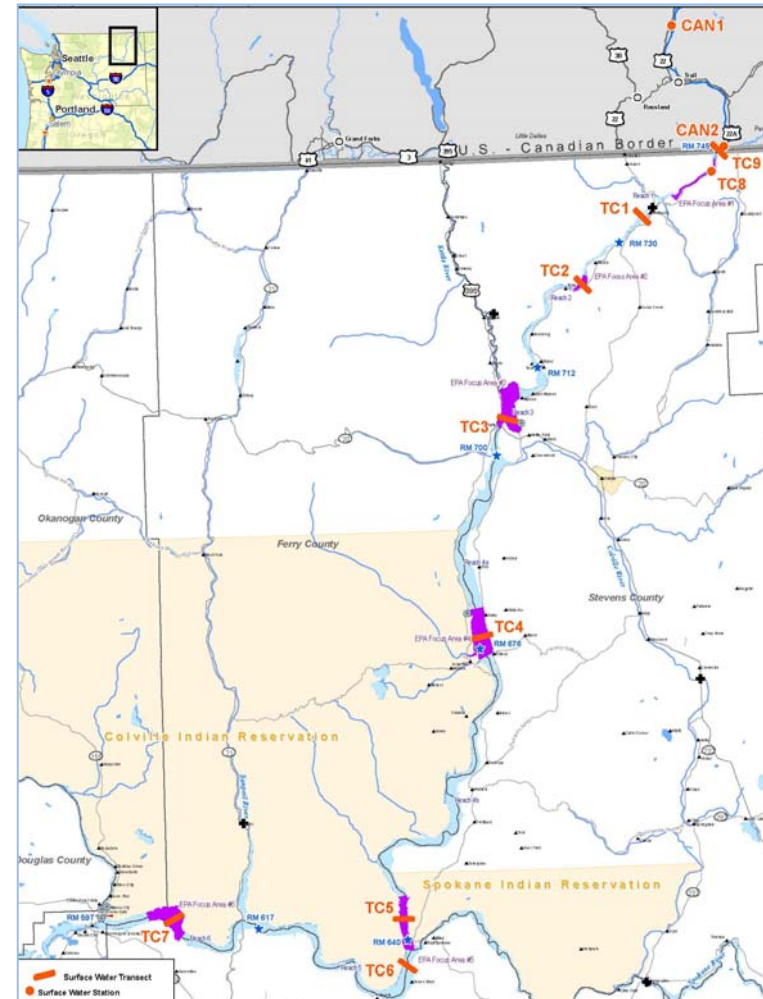
- Applies only to women who are or might become pregnant, nursing mothers and young children
- State wide mercury (Hg) advisory:
 - Smallmouth & largemouth bass (2 meals per month)
 - Do not eat northern pikeminnow
- Lake Roosevelt (upper Columbia River) advisory:
 - Smallmouth & largemouth bass (2 meals per month)
 - Walleye (2 meals per month)
 - Sucker and/or burbot (4 meals per month)

- Expected changes in Lake Roosevelt advisory (*source: Dave McBride; Office of Environmental Health, Safety, & Toxicology, Washington State Dept. of Health; September 30, 2011*):
 - Small- & large-mouth bass ↑ : 2 → 4 meals per month
 - Walleye ↑ : 2 → 4 meals per month
 - Suckers ↓ : 4 → 2 meals per month
 - Burbot ↔ : no change @ 4 meals per month

Surface Water Program Overview

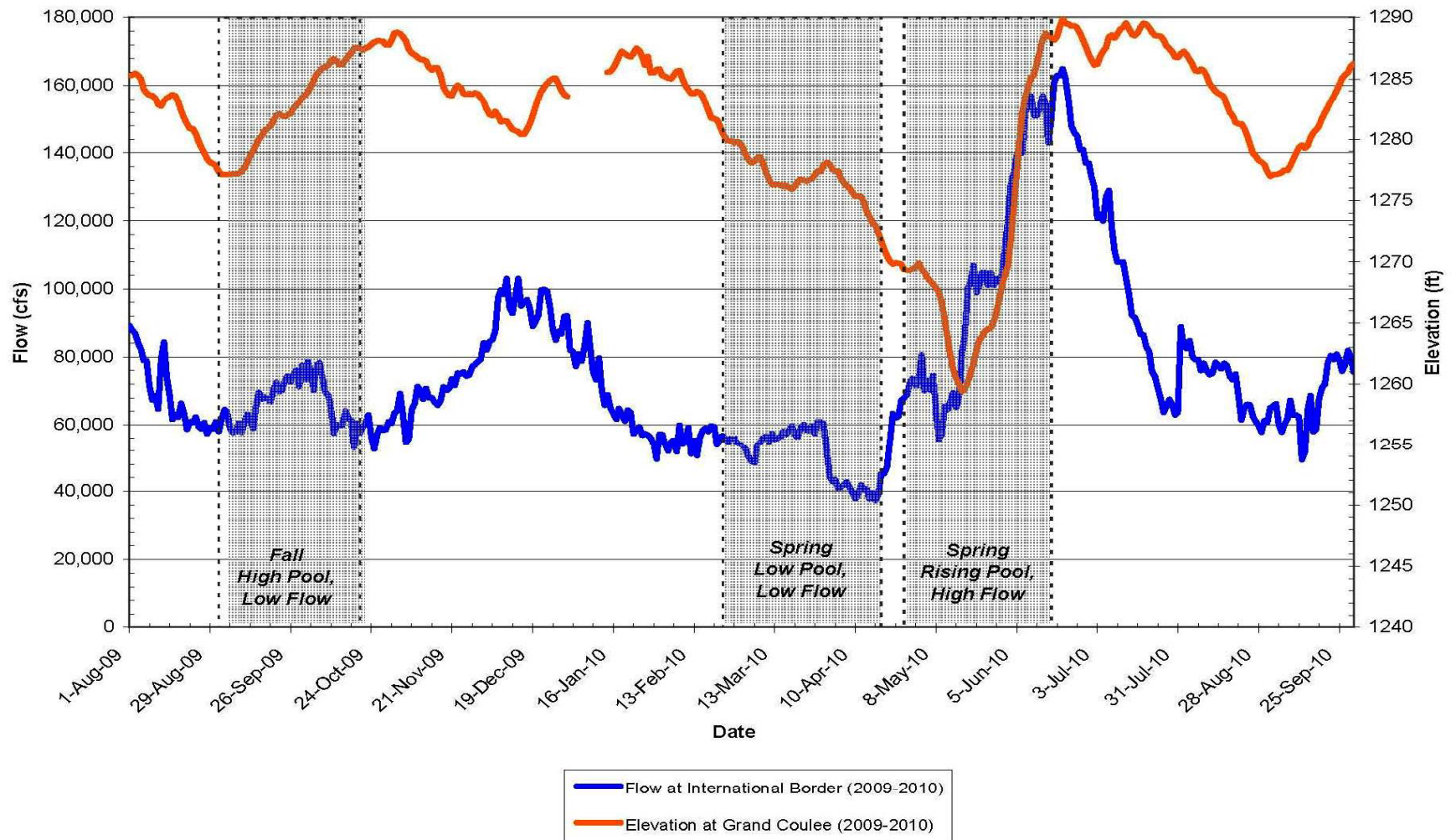
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- Ten transects along the upper Columbia River
 - Starting in Canada and ending at Grand Coulee Dam
- Three separate rounds of sampling:
 - Sept. / Oct. 2009
 - March / April 2010
 - May / June 2010



Why Three Rounds?

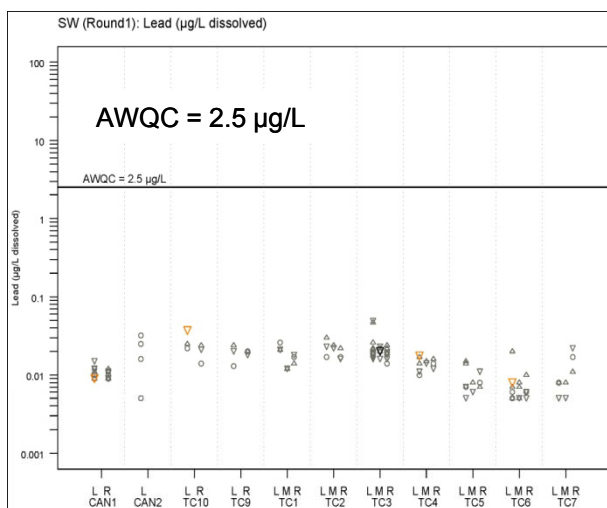
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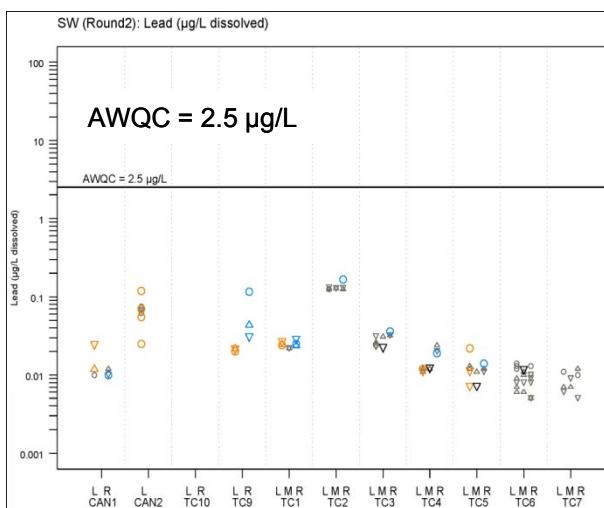
Surface Water Results Dissolved Lead ($\mu\text{g/L}$)

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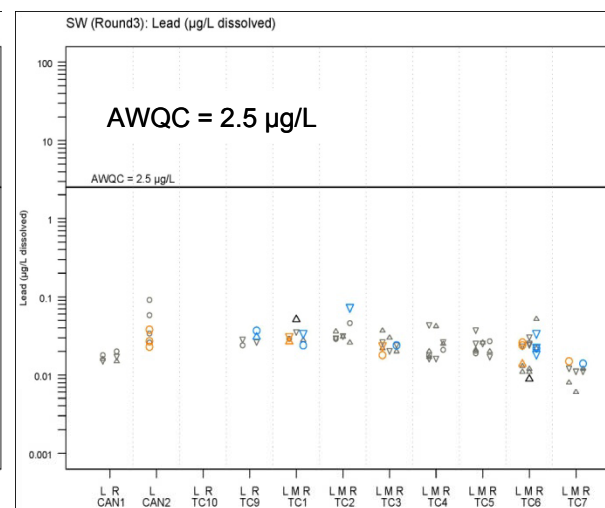
Round 1: September–October 2009



Round 2: February–April 2010



Round 3: April–June 2010



Border



Grand Coulee

- ▽ Near-surface
- Nearshore
- △ Near-bottom
- ◆ Undetected (full detection limit)
- L = Left bank (orange)
- M = Mid-channel (black)
- R = Right bank (blue)

Note: Disturbed samples are not shown.

Note: Y-axes are on \log_{10} scale.

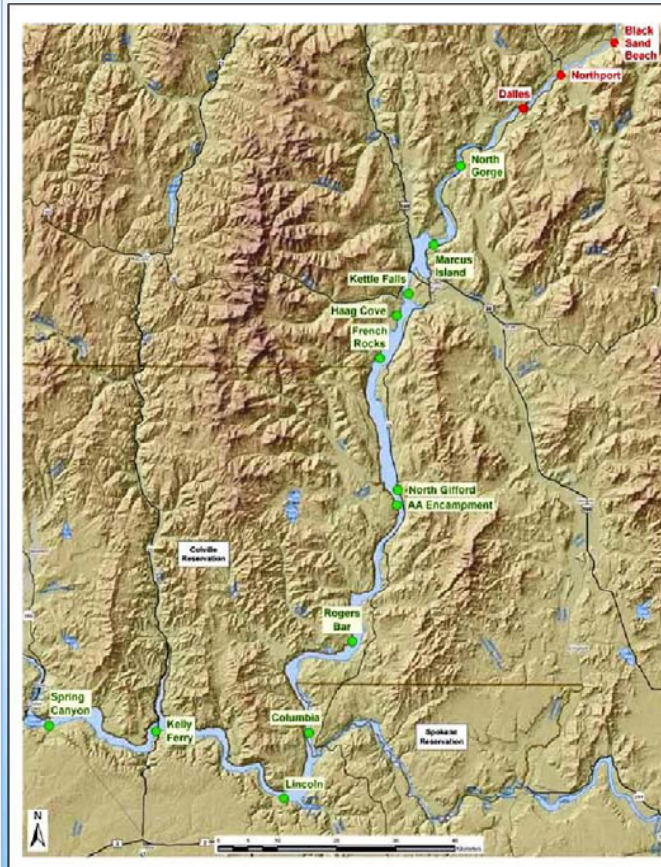
AWQC Chronic EPA ambient water quality criterion

Beach Sediments

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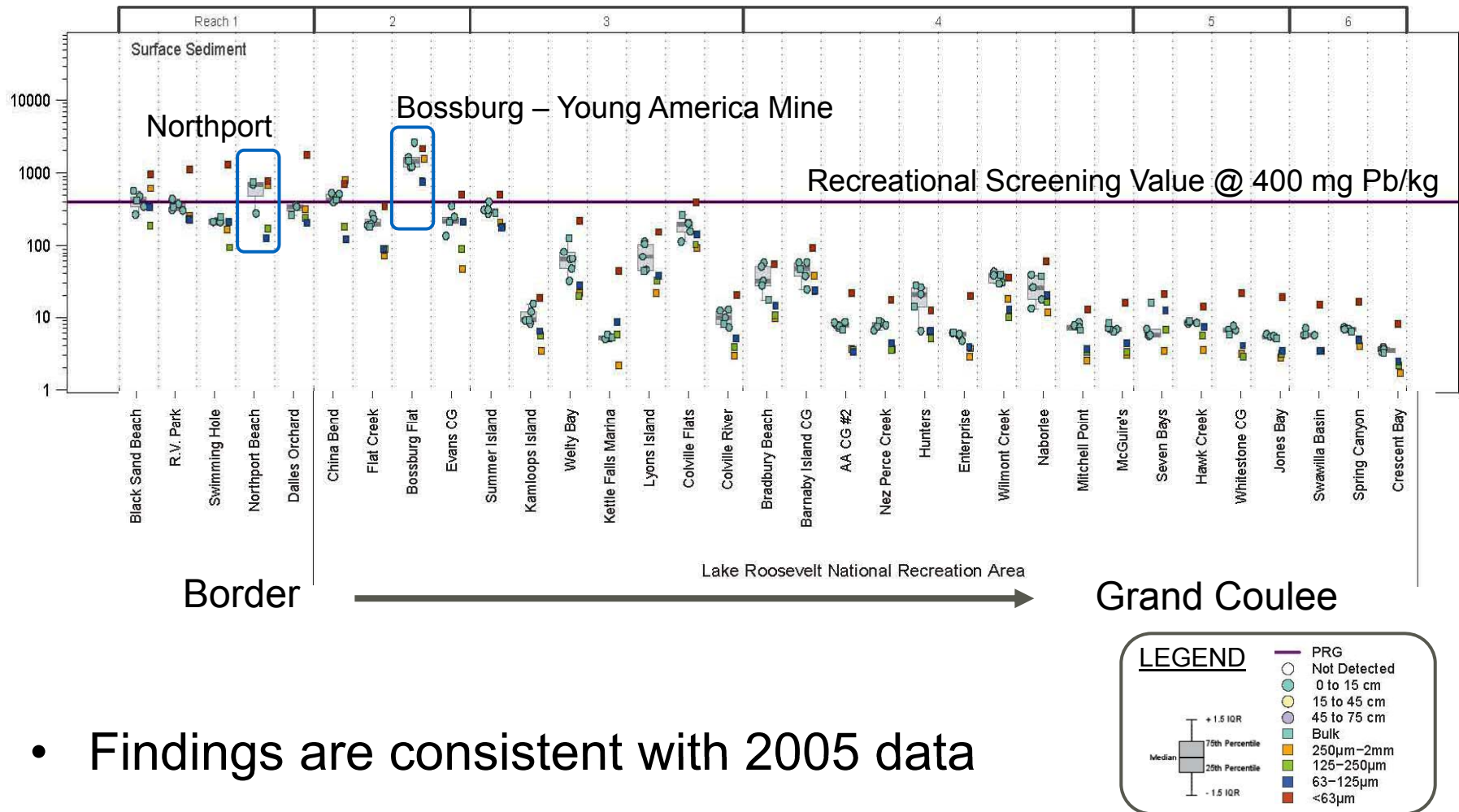
- 15 beaches sampled in 2005
- All but 3 were identified as “safe for recreational use”
 - Black Sand Beach
 - Northport
 - Dalles Orchard
- Lead and arsenic drivers
- 35 additional beaches sampled since 2005

- Beaches shown in *green* are *safe* for recreational use
- Beaches shown in *red* will be *re-evaluated*, but present *minimal risks* for recreational use



Beach Sediments Results: Lead (mg/kg)

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- Findings are consistent with 2005 data

Beach Sediments – Bossburg Flats Parallel Items

- Further investigated by the EPA Emergency Response Team
- EPA is in the Removal Site Evaluation phase
- National Park Service (NPS) has become engaged (01-12-12 Press Release)

	National Park Service U.S. Department of the Interior	Lake Roosevelt National Recreation Area	1008 Crest Drive Coulee Dam, WA 99116 509 633-9441 phone 509 633-9332 fax
Lake Roosevelt National Recreation Area News Release			
Date: January 10, 2012 For Immediate Release Contact: Keith Holliday, 509-633-3860, extension 161			
Bossburg Flat Closed at Lake Roosevelt National Recreation Area			
Under signature of Superintendent Debbie Bird, an area of Bossburg Flat and beach has been closed. The closure is in response to environmental sampling information recently provided to the National Park Service (NPS) by the U. S. Environmental Protection Agency (EPA) that indicate lead and arsenic levels in this area may be a risk to human health.			
When EPA provided the NPS this information in December of 2011, NPS staff put up temporary barriers and signs closing the area of concern. While investigating the Young America Mine's Mill Site near Bossburg, using field instruments, the EPA detected elevated levels of arsenic and lead in the soils and sediments on the shoreline and uplands at Bossburg.			
Bossburg began as a mining camp for the Young America Mine that was operated by a number of different companies and leaseholders between 1885 and 1954. Originally known as Millington, then Young America, it was renamed Bossburg in 1892 in honor of two influential citizens, Chester S. Boss and John Bergh. The last operating feature of the town was the school which remained in operation until 1956.			
At this time, there are a lot of questions remaining to be answered about this site. The NPS and EPA are working to determine the next steps, such as determining potential sources, better defining the contaminated area, and how best to clean up the area. In the meantime, the area will remain closed.			
-nps-			

- All EPA approved data and technical reports are publically available via the following websites:
 - Reports = <http://www.ucr-rifs.com>
 - Data = <http://teck-ucr.exponent.com>

2012:

- Complete field sampling activities for:
 - Sediments sampling and toxicity tests
 - Macro-invertebrate tissues

2013: Complete upland soil sampling

2014: Complete risk assessments (human health & ecological)