Screening Risk Assessment for Recreational Beach Use – Upper Columbia River and Lake Roosevelt

Overview

Select and Sample Beaches Based on Level of Use and Visible Slag

Select Contaminants of Potential Concern

Compare maximum values to *residential* screening levels (exposure: 350 days per year; 30 years)

Develop risk-based recreational screening levels

1. Use recreation exposures to calculate safe beach levels (14 days per year for 30 years with high (0.3 g/day) soil ingestion)
2. Compare maximum beach levels to recreational screening levels

Prioritize beaches

Safe for recreational use

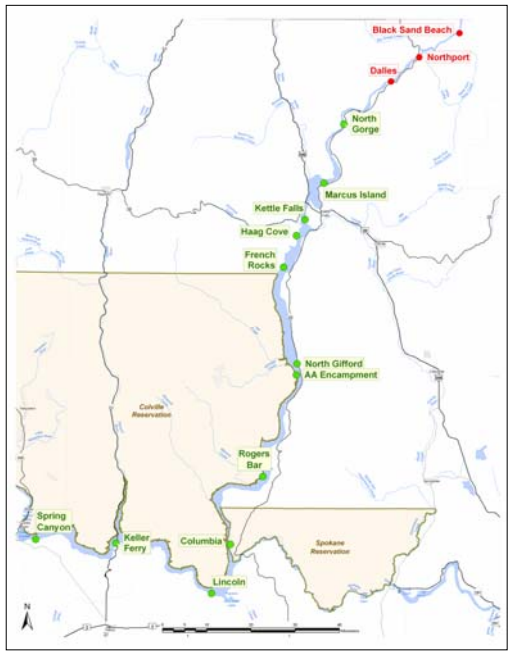
Additional evaluation in baseline risk assessment

Sediment Lab Analyses:

- Pesticides
- Polychlorinated Biphenyls – (PCBs)
- Dioxins and Furans
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Semi-volatile organic compounds (SVOC)
- Metals

Beaches

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



Screening Levels

Target Risks

- 1 in 1,000,000 increase in cancer (above naturally occurring background) risk for arsenic
- Hazard Quotient of 1 non-cancer effects of other metals
- EPA National Soil Lead Goal of 400 mg/kg - safe for residential land use
  - Target: ≤ 5% blood lead ≥ 10 µg/dL

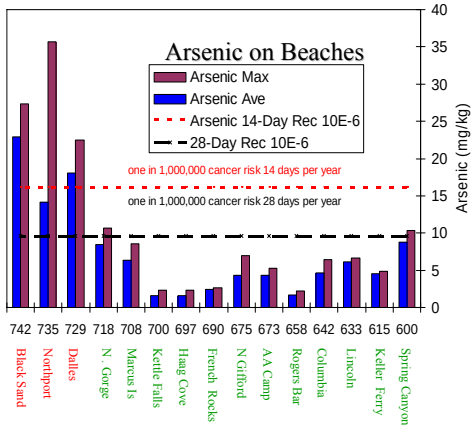
Exposure

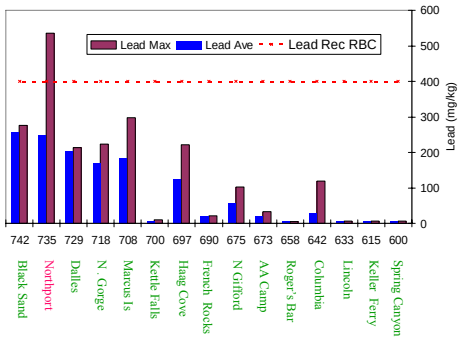
- 14 days per year with high (i.e., 0.3 g/day) soil ingestion for a child
- Solve for concentration using equations for ingestion and dermal absorption

http://www.epa.gov/region09/waste/sfund/prg/files/04usersguide.pdf

	Maximum (mg/kg)	Residential Screening	Recreational Screening
Antimony	53	31	521
Arsenic	36	0.4	16
Copper	3,290	3,129	52,143
Iron	254,000	23,463	782,143
Lead	535	400	400
Manganese	4,780	1,762	60,833
Uranium	84	16	261

Results





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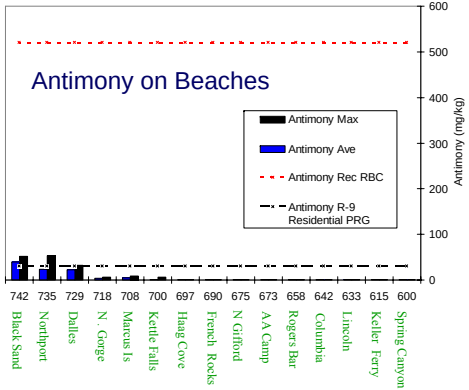
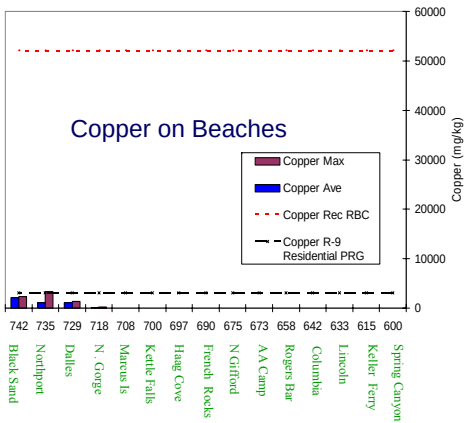
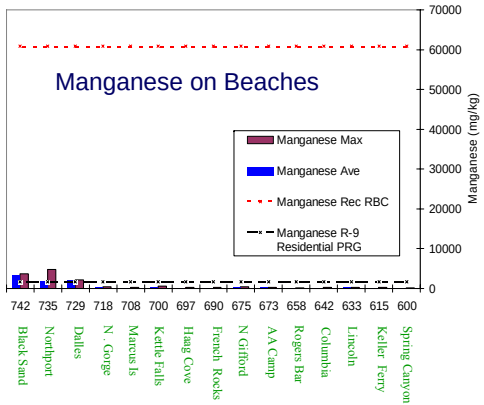
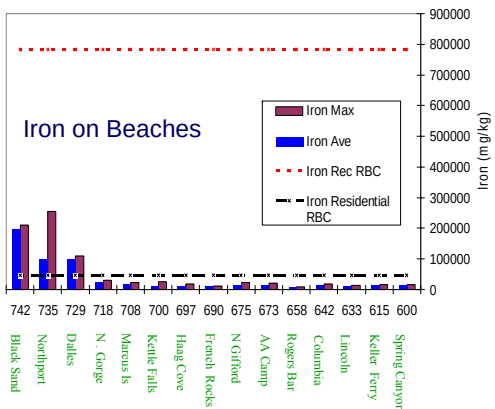


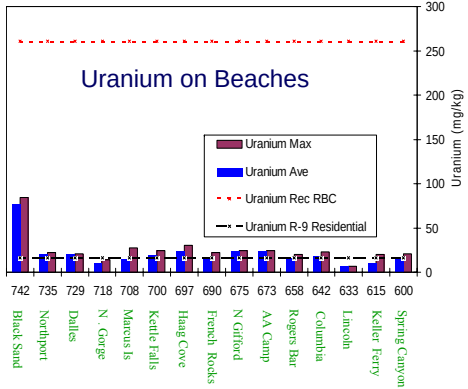


Results





Beaches to be Re-evaluated



Northport

"Black Sand Beach"

Dalles