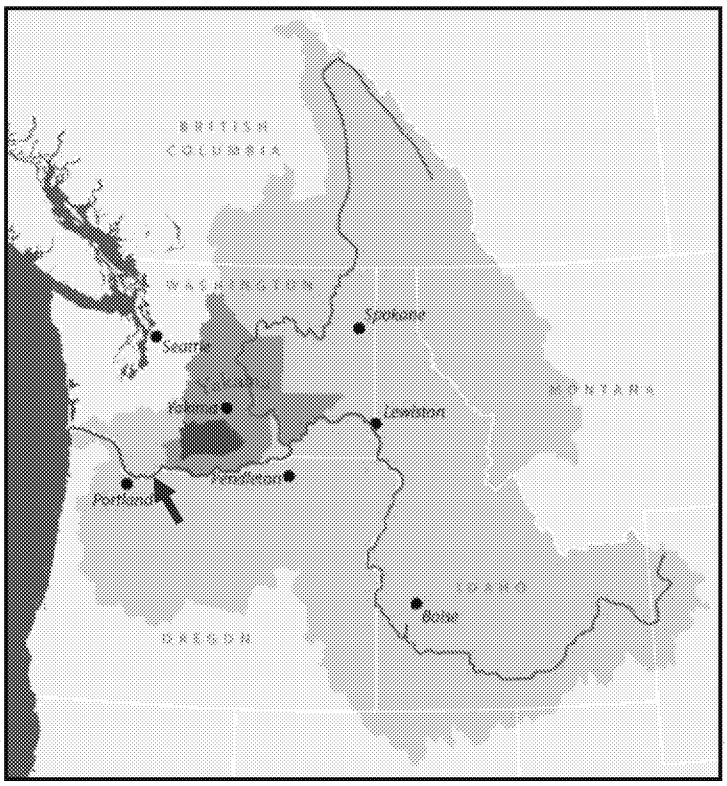
Bradford Island

Cleanup Site Overview

by Laura Shira,
Yakama Nation Fisheries

November 20, 2019

Yakama Nation Involvement



- Dark Purple - Yakama reservation
- Light Purple – Yakama land ceded to US
- Dark Tan – Columbia River Basin

Tribal Fisheries

HONOR. PROTECT. RESTORE.

Columbia River Fishing Platform

Yakama Nation Fisheries

HONOR. PROTECT. RESTORE.

Fishing villages (In Lieu Sites - Cookes)

Timeline

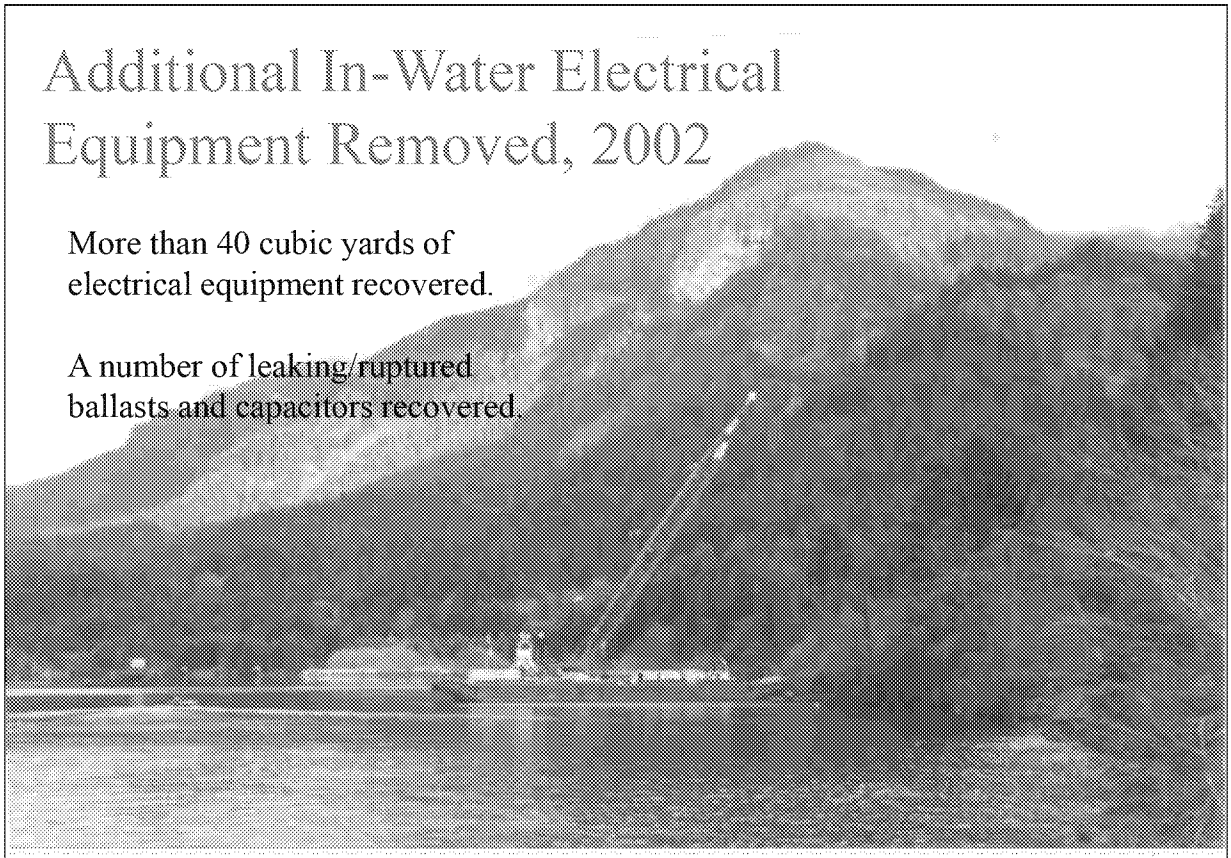
- Time Immemorial – strong Native American presence on and surrounding the island
- 1930s - Bonneville Dam Construction Started
- 1930s to1980s – Upland waste disposal from dam construction and operation, one or more in-river waste disposal incidents
- 1997 - Environmental investigations began
- 2000, 2002 and 2007 - Removal Actions
  - electrical equipment removal
  - diver assisted sediment dredging

Investigation of In-Water Disposal Areas, 2000-2001

Yakama Nation Fisheries

Electrical Equipment Removal (~60 pieces, 2000)

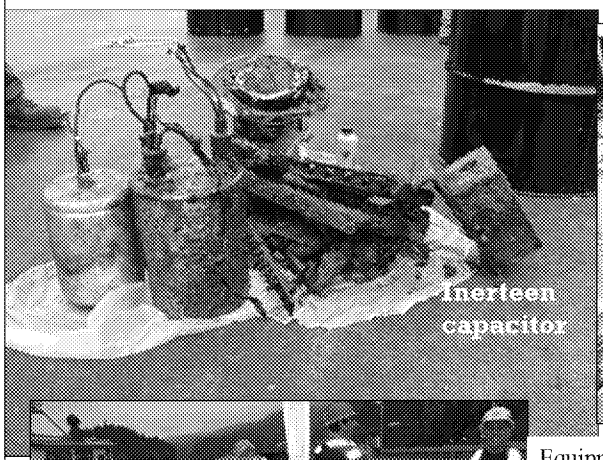
Additional In-Water Electrical Equipment Removed, 2002

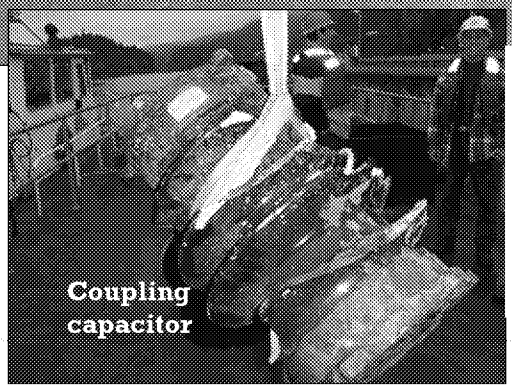


More than 40 cubic yards of electrical equipment recovered.

A number of leaking/ruptured ballasts and capacitors recovered.

In-River Hazardous Materials Recovered





Equipment Removed: Lightning arrestors, coupling capacitors, inerteen capacitors, light ballasts

PCB concentrations found:
-Westinghouse original formulation reported to be 60 to 75% PCBs
-Site electrical equip: up to 20% PCBs
-Sediment: up to 690,000 ppb (2003), decreased with removal actions
-Fish: up to 183,140 µg/kg (ppb) (2011)
-screening level = 0.57 ppb

Fish – small mouth bass

Diver-assisted suction dredging, 2007

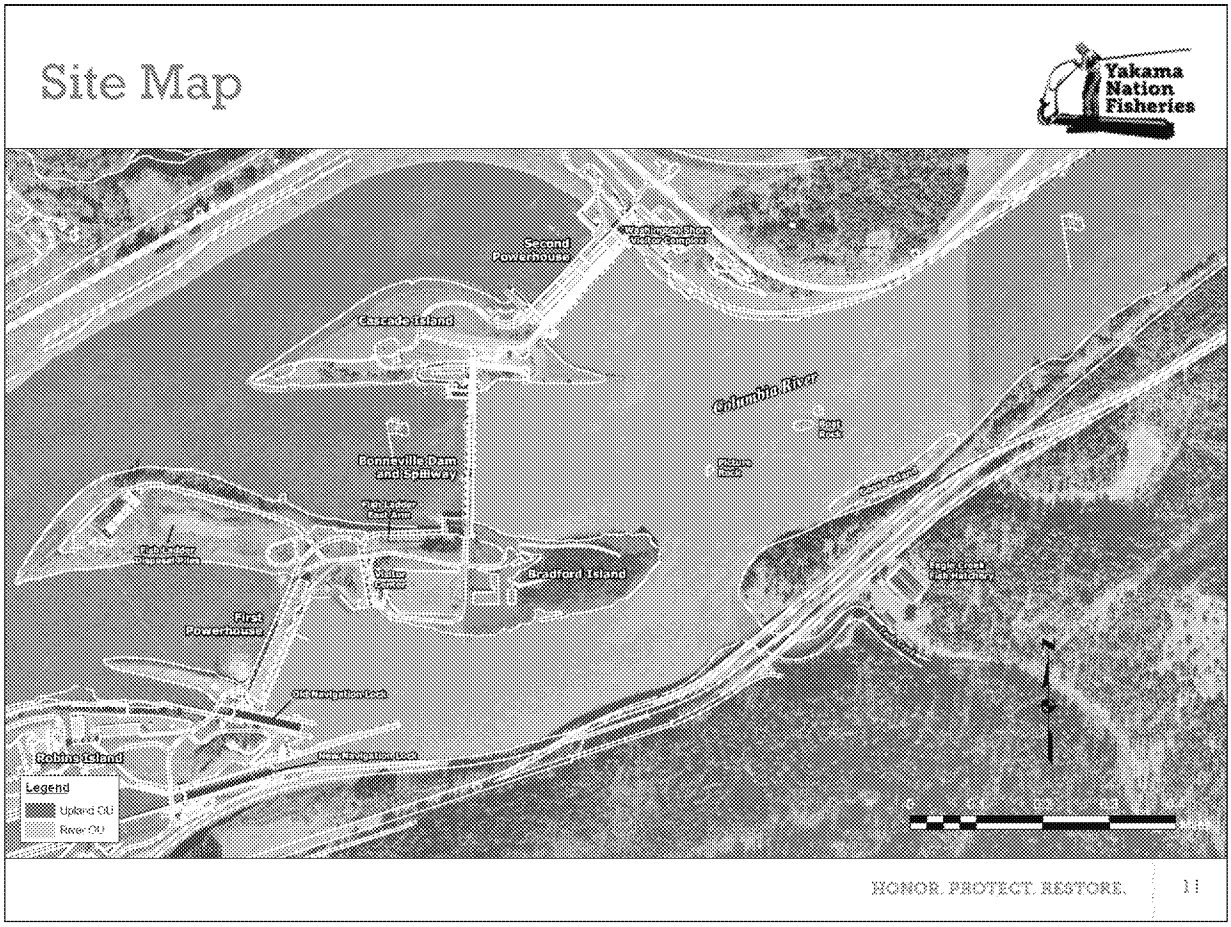
Dredge water collection and treatment system

Timeline continued…

- 2011 – multi-media sampling effort – improved sediment contaminant concentrations; however, maximum smallmouth bass concentration 183,140 µg/kg PCBs (ppb) (screening level = 0.57 ppb)
- 2012 - Remedial Investigation for Upland and In-River
- 2013 - DO NOT EAT Resident Fish Advisory issued jointly by WA and OR health departments for the ~1 mile area upstream of the BI dam
- 2016 to 2019
  - Ongoing evaluations of risk and potential cleanup options for Upland and In-River areas
  - Upland source control planning and data gaps investigations

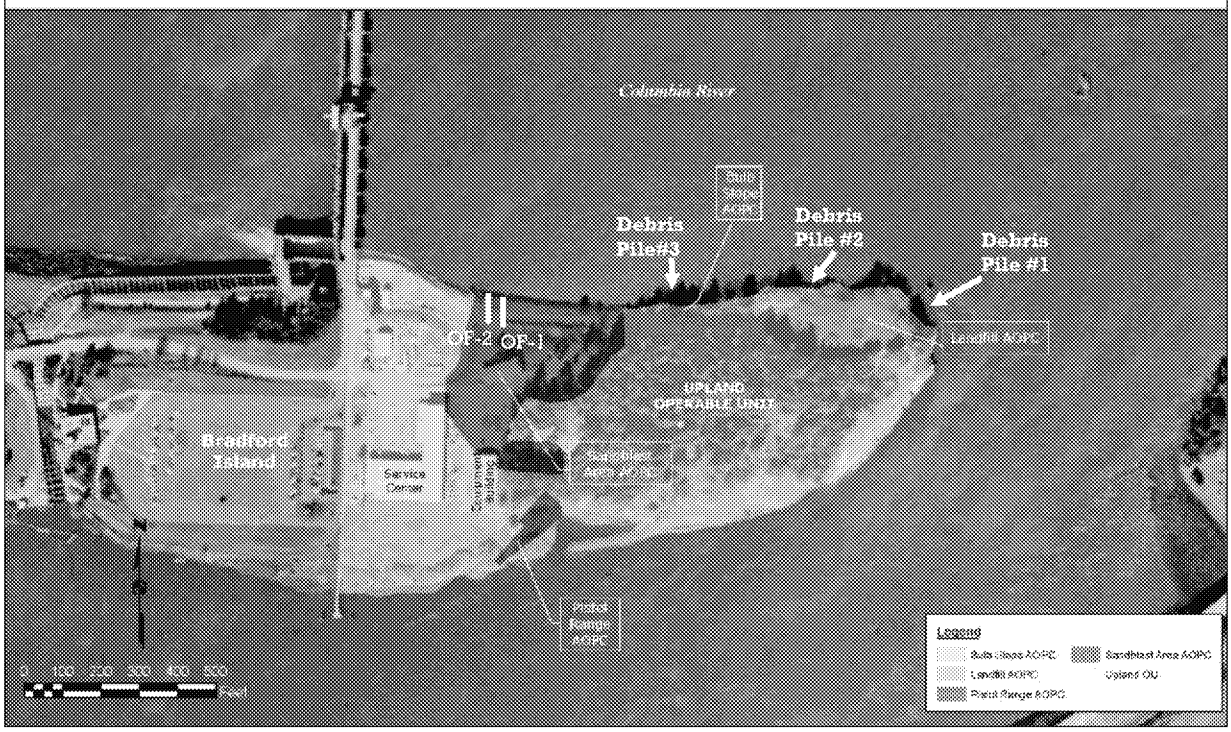
BI - Feb 2008 PCBs in fish: up to 26,502 ppb

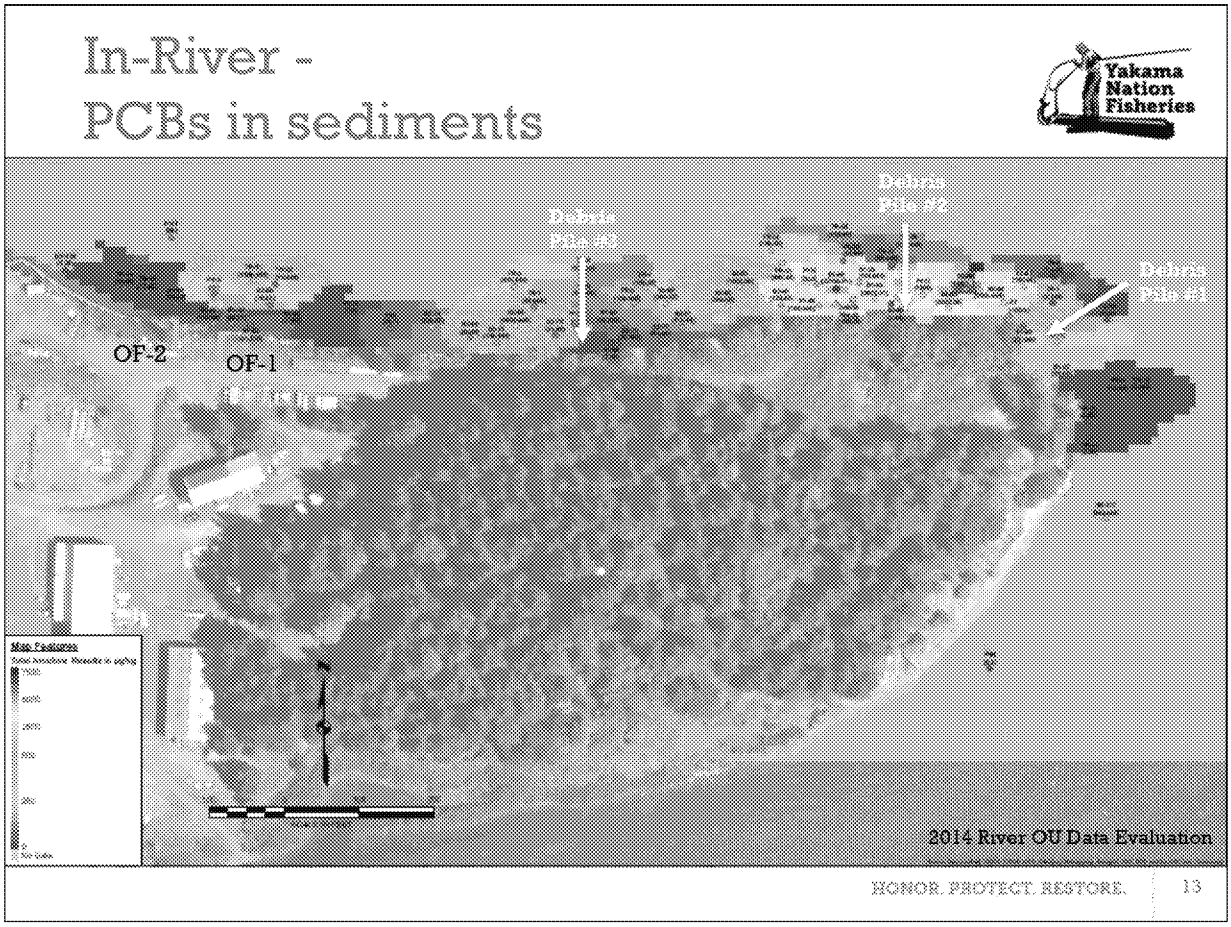
Portland Harbor maximum - 6,460 ppb PCBs in bass fish tissue concentrations in the 2018 OHA "Updated Fish Advisory for Resident Fish and Shellfish, Lower Willamette River" were approximately (Table 1, page 8).
https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Documents/LowerWillametteFishAdvisoryTechnicalReport.pdf



Disagreement between USACE and Corps on “Contaminants of Concern”

Upland - 4 Areas of Concern





Data is post-2007-Removal Action Sediment Data

Key Contaminants

Human Health Effects

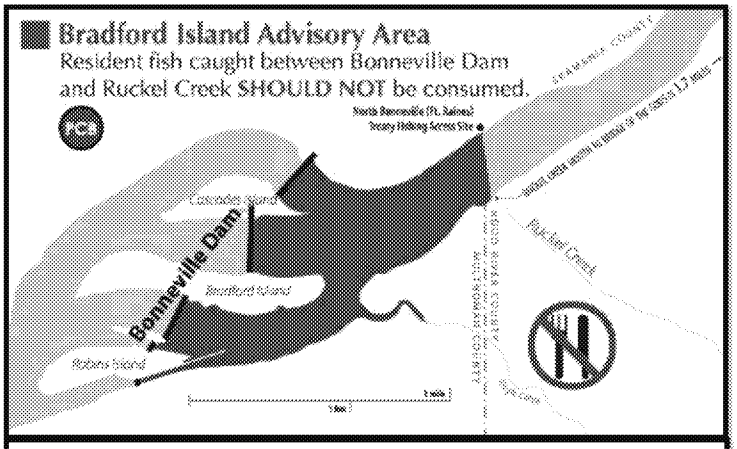
- **PCBs** (polychlorinated biphenyls) – liver, thyroid, skin, neurobehavioral and immune system changes in children, cancer
- **Pesticides** (ex. dieldrin, chlordane) – wide range, organs (kidney, liver), body systems (nervous, digestive, immune), and cancer
- **PAHs** (polycyclic aromatic hydrocarbons) – cancer
- **Metals** (ex. lead, arsenic) – neurological, GI system
- **Mercury** – neurotoxin, kidney, respiration
- **Phthalates** – reproduction, development, endocrine disrupter, cancer

Aquatic Ecosystem Effects

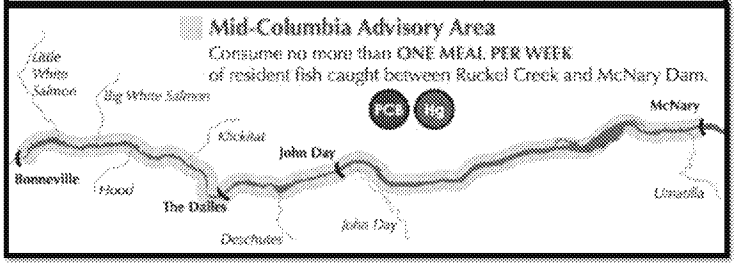
- Impacts to fish runs in the Columbia River due to:
  - Increased Juvenile Mortality
  - Reduced Adult Survival
  - Decreased Spawning Success

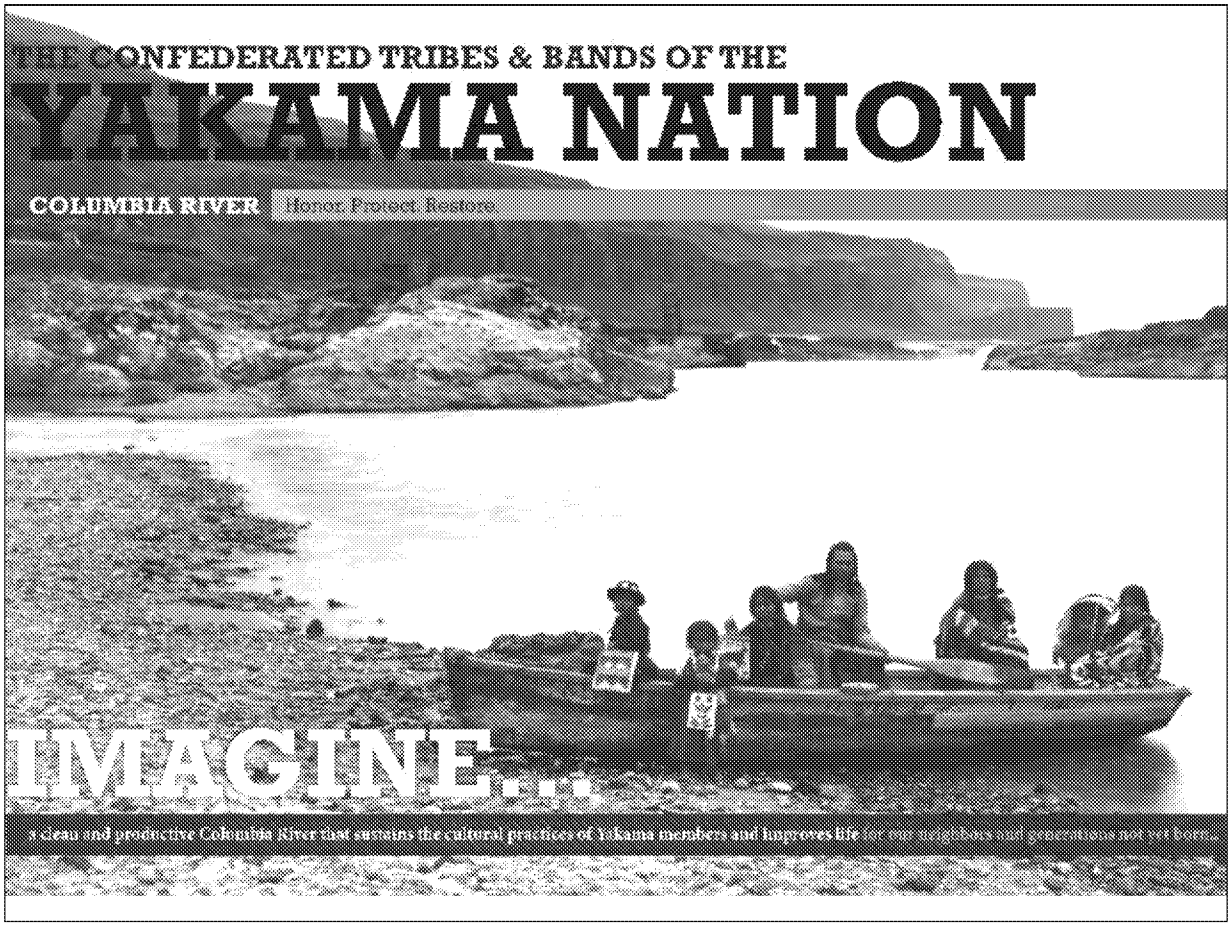
RESIDENT Fish Consumption Advisories

2013 Advisory - Site-Specific
WA & OR Health Departments



Mid-Columbia Advisory- RM 146-292




THE CONFEDERATED TRIBES & BANDS OF THE
YAKAMA NATION
COLUMBIA RIVER
Honor Protect Restore
IMAGINE...

Extra slides if questions

BONNEVILLE DAM FISH ADVISORY AT BRADFORD ISLAND

DO NOT EAT		HEALTHY TO EAT	
Carp		Salmon	
Bluegill		Steelhead	
Sucker		American Shad	
Smallmouth bass		Lamprey	
Largemouth bass			
Sturgeon			
Yellow Perch			
Crappie			
Walleye			
Catfish			

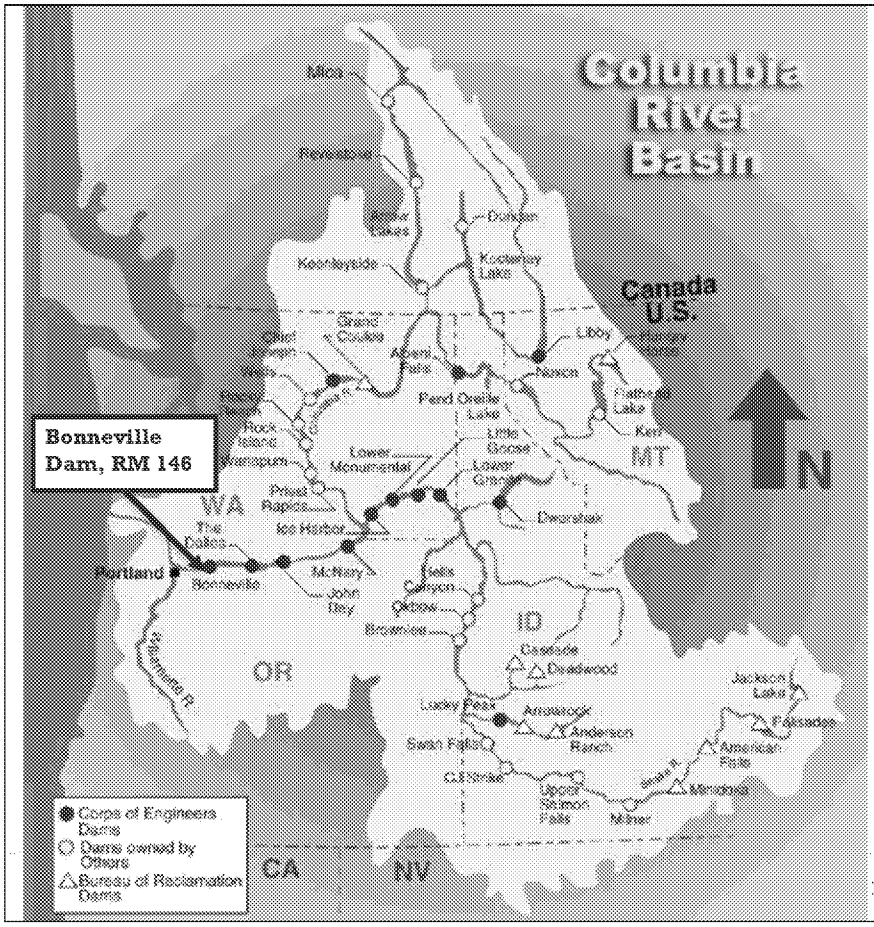
https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Pages/Bonneville.aspx

Mid-Columbia River Fish Advisory:

https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Pages/Mid-Columbia.aspx

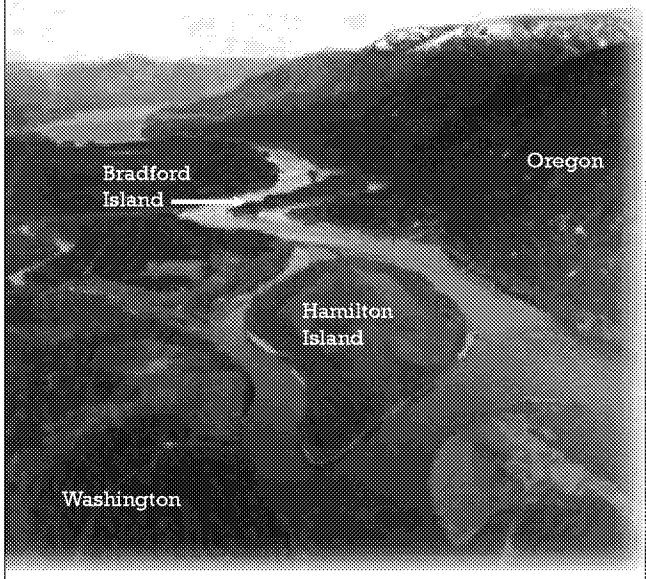
Yakama Nation Concerns

- Lack of Budget
- Lack of Protectiveness
  - Contaminants of concern, data, science & methods - disagreements
  - Legal interpretations
    - OR cleanup regs – not recognized
    - WA sediment regs – not recognized
    - CERCLA - alternative interpretations
  - Failure to use YN tribal exposure scenario in risk assessments
- Upland OU
  - Lack of certainty on authority for addressing ongoing pathways to river
- In-River OU
  - Severity of fish contamination & ongoing exposure to tribal members
  - Data gaps – full nature & extent of contamination not defined



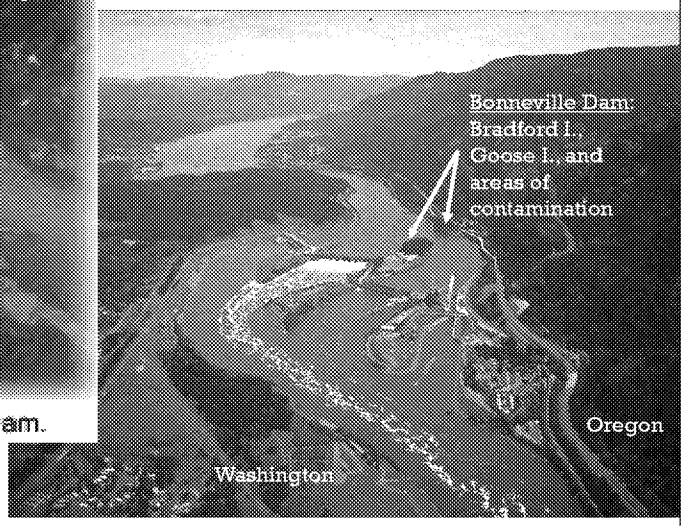
Yakama Nation Fisheries

Site Location



Columbia River, prior to construction of the Dam.

http://www.u-s-history.com/pages/h1792.html



Post-dam construction

NEXT STEPS:

- 2020 – minimal, continue contract work
  - stormwater sampling
  - cultural survey
  - near-bottom surface water passive sampling
- Unknown - Timeline for cleanup of upland and river
  - Upland - Final Proposed Plan
    - Active Cleanup – Landfill & Pistol Range AOPCs
    - No Further Action Determination – Sandblast & Bulb Slope AOPCs
  - Upland - Source Control Actions/O&M - Sandblast & Bulb Slope AOPCs
  - In-River – Feasibility Study