

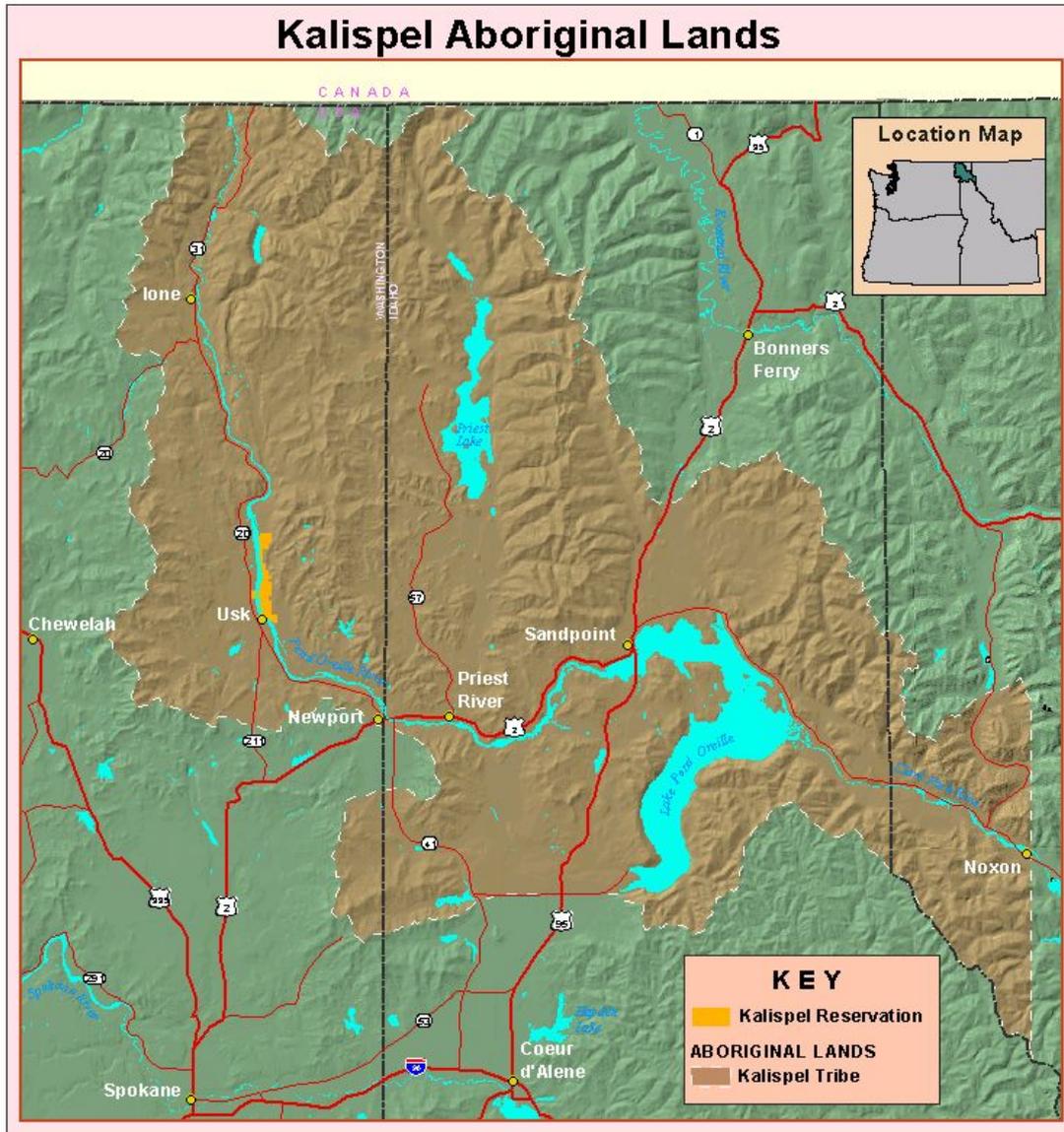


# The 3 R's of Cee Cee Ah Creek ...Rotenone, Reintroduction, and Recovery

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October 18-19, 2016

# Kalispel Lands



- Kalispel Ceded Lands
  - NE Washington, Idaho and Western Montana
  - Over 2.3 million acres
- Reservation
  - NE Washington
  - 4,750 acres
  - 1,800 acres in Trust status

# A Declining Species: Westslope Cutthroat Trout



- WCT historically present in 99% of Pend Oreille Basin streams.
  - Now only found in 35%.
- Petitioned for ESA listing (1998).
  - “Not warranted” at the time.
- Many factors have/continue to contribute to decline.
  - Habitat loss, fragmentation, degradation, and isolation.
  - Introduced (non-native) fish a significant contributor.

# The Issue:

## Introduced Fish Species

- Non-native (introduced) fish are a major limiting factor to native salmonids in the Pend Oreille Basin.
  - Competition for resources and habitat.
  - Extensive stocking history in the Basin.
  - Pure WCT populations now limited to areas above barriers.
- Addressing introduced fish species critical for WCT recovery.



# Importance of WCT Restoration

- Restoration of WCT in the Pend Oreille Basin will:
  - Create more resilient and genetically diverse WCT populations.
  - Reduce the potential for listing or efforts to petition a listing of WCT under the Endangered Species Act.



Photo: KNRD

# How do you get rid of Brook Trout?

- Liberalized angling regulations
- Physical removal via electrofishing
- Dewatering
- Explosives
- Piscicides

With the exception of dewatering, the other alternatives rarely result in complete eradication.

Alternatives require much more time, labor and money

# Rotenone Project that wasn't- 2002

- 2002-Middle Branch LeClerc Creek Rotenone Project
  - Funding through the Salmon Recovery Funding Board
  - Undertaken by Washington Dept of Fish and Wildlife and US Forest Service
  - No outreach or education
  - Public meetings put a stop to the project

# Back to the Drawing Board...Involve the Public!

- Summer 2007-Hired WSU Extension Center
  - Resource Manager Interviews and Meetings
  - Interviews of Citizens
  - Citizen Discussions and Meetings
- Spring/Summer 2008
  - Discuss Public Involvement
  - Initiate NEPA and SEPA

# Information in Public Meetings

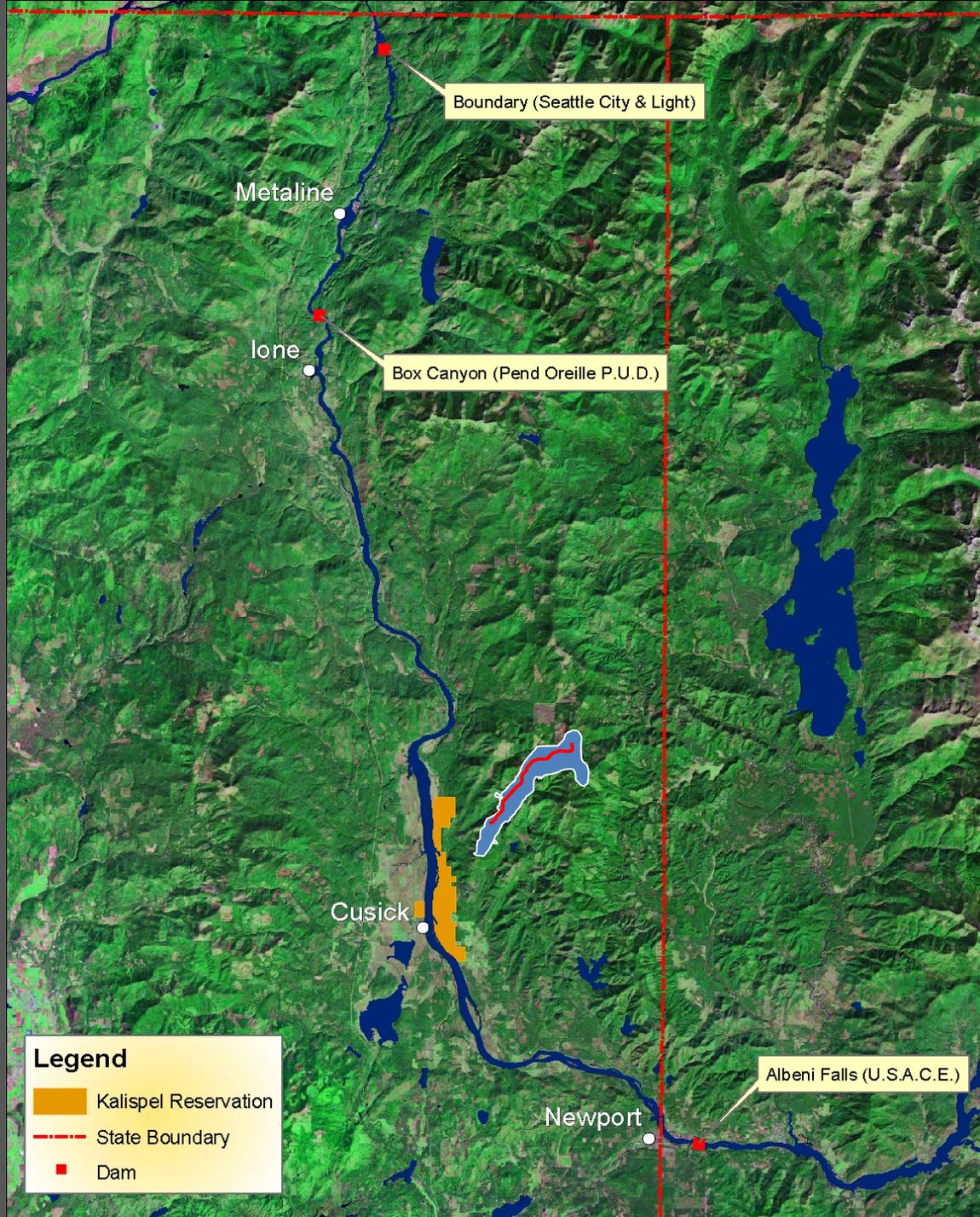
- Information about the pilot project, criteria used to select this location, rotenone application, monitoring, and re-introduction of native species,
- Discuss the benefit of enhancing and conserving native species.
- Answer question from citizens

# Cee Cee Ah Creek Westslope Cutthroat Trout Restoration Project



A partnership of the Kalispel Tribe of Indians, the Washington Department of Fish and Wildlife, and Washington State University Extension





Boundary (Seattle City & Light)

Metaline

Lone

Box Canyon (Pend Oreille P.U.D.)

Cusick

Newport

Albeni Falls (U.S.A.C.E.)

**Legend**

-  Kalispel Reservation
-  State Boundary
-  Dam

# Why Cee Cee Ah Creek?

## Criteria for selection:

- Suitable habitat for WCT to thrive
- No grazing or range livestock nearby
- No known domestic water rights that might be affected
- Limited land owners downstream (U.S. Forest Service, Stimson Lumber Company, Riley Creek Timber and Kalispel Tribal land).
- Little fishing in this section of the stream.
- WCT are functionally extinct, so efforts to salvage the fish are not required.



Waterfall will prevent non-native species from invading habitat after treatment.

# Rotenone: Effectiveness & Safety

- Rotenone is a naturally occurring substance from the roots of some plants in the Legume (bean) family.
- Highly effective and specific to fish and other aquatic life.
- Breaks down rapidly once exposed to air and sunlight.
  - Undetectable in streams within a matter of hours.
  - Readily binds to organic matter, preventing it from leaching into groundwater supplies.
  - Deactivated using potassium permanganate in flowing water so no downstream risk.
- Poses virtually no threat to mammals, birds, or humans at concentrations used in Fisheries Management.

# Rotenone: Use in Fisheries Management & Conservation

- Fisheries Management in the U.S. since the 1930's.
- Used for native fish conservation in the West.
  - Montana treated 100 miles since 2000.
- Use in Washington (since 1940's).
  - Sport-fisheries (lakes) and conservation (streams).
  - 804 treatments in 308 Eastern WA water bodies.
  - Cee Cee Ah Creek WCT Restoration: A recent success and similar to other candidates in the Basin.
  - Many conservation (stream) candidates in Pend Oreille Basin.

# Pre-Treatment Data Collection

- Project Preparation.
  - Travel time.
  - Discharge measurements.
  - Fish distribution and population size/density.
  - Location of tributaries, springs, seeps, bogs, beaver ponds.
  - Water chemistry.
- Monitoring (pre and post).
  - Aquatic invertebrate samples.
  - Additional water chemistry.



Photo: KNRD





# Rotenone Drip Stations

- Liquid Rotenone.
  - 0.5 to 1 ppm.
- Drip stations.
  - 5-gallon can.
  - Strategically placed
  - 4 Hour treatment.
- Roving teams.
  - Off-channel areas.
  - Backpack tank sprayers.
  - Rotenone/sand/gelatin mix.



# Backpack Sprayer



# Tank Sprayer



# Deactivation Stations

- Potassium Permanganate used to deactivate Rotenone.
  - Oxidizer.
  - 2.5 to 3 ppm.
- Dual stations.
  - Station 1 at Falls.
  - Station 2 is 30 minutes travel time below Station 1.



# Problems Encountered





# Results

- Estimated 6,733 fish killed in the first treatment (2008).
- A handful of fish killed in the second treatment (2009).
- Zero fish killed in 2010.

# Restoring Westslope Cutthroat Trout

## Donor stock requirements:

1. Genetically pure Westslope Cutthroat Trout.
  - No Rainbow Trout hybridization.
2. Population size sufficient to withstand mining of fish and gametes.
3. Close proximity to creek.
  - Neighbor sub-basin preferred.



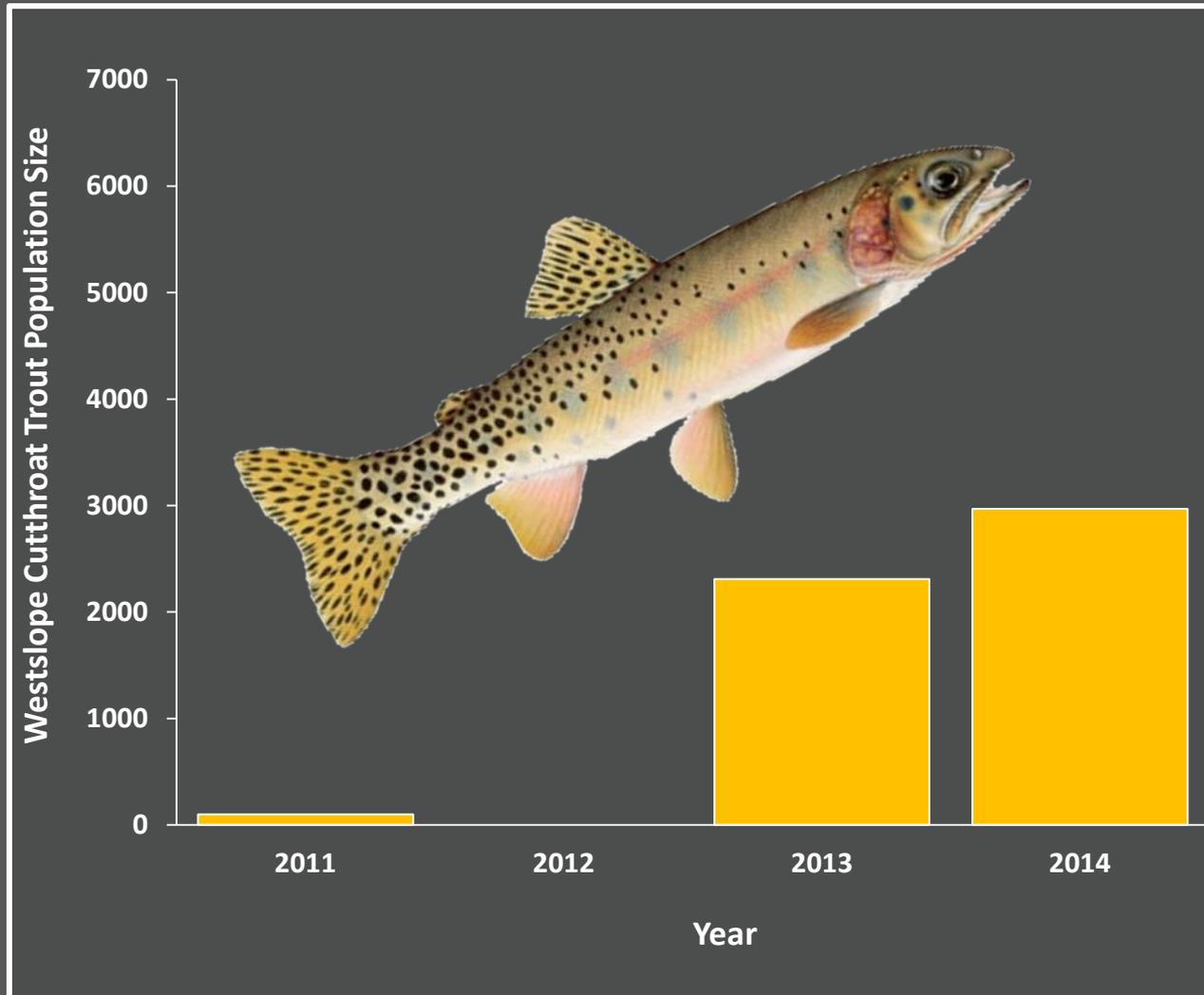
# Reintroduction Techniques

## Options Considered:

1. Translocation of adults/juveniles.
  - Natural spawning.
  - Reduced “maintenance”.
2. Capture of wild broodstock.
  - Spawn wild fish.
  - Remote Site Incubators (RSI).
  - Release fry in stream.
3. Combination of techniques likely.



# Results



# Lessons Learned

1. Education and outreach to the public
2. Plan and strategize for challenges presented by beaver ponds
3. Able to implement the project with less people

30-36 people in 2008

25 people in 2009 and 2010

# Path Moving Forward with Rotenone

1. FERC Settlement Agreements
  - A. Boundary Dam Settlement Agreement
  - B. Box Canyon Dam Settlement Agreement
2. BPA Project 2007-149-00 - Non-Native Fish Suppression Project
3. Continuation of Public Education and Outreach





Photo: KNRD

# Upper Smalle Creek Westslope Cutthroat Trout Restoration

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<sup>2</sup> Washington Department of Fish and Wildlife

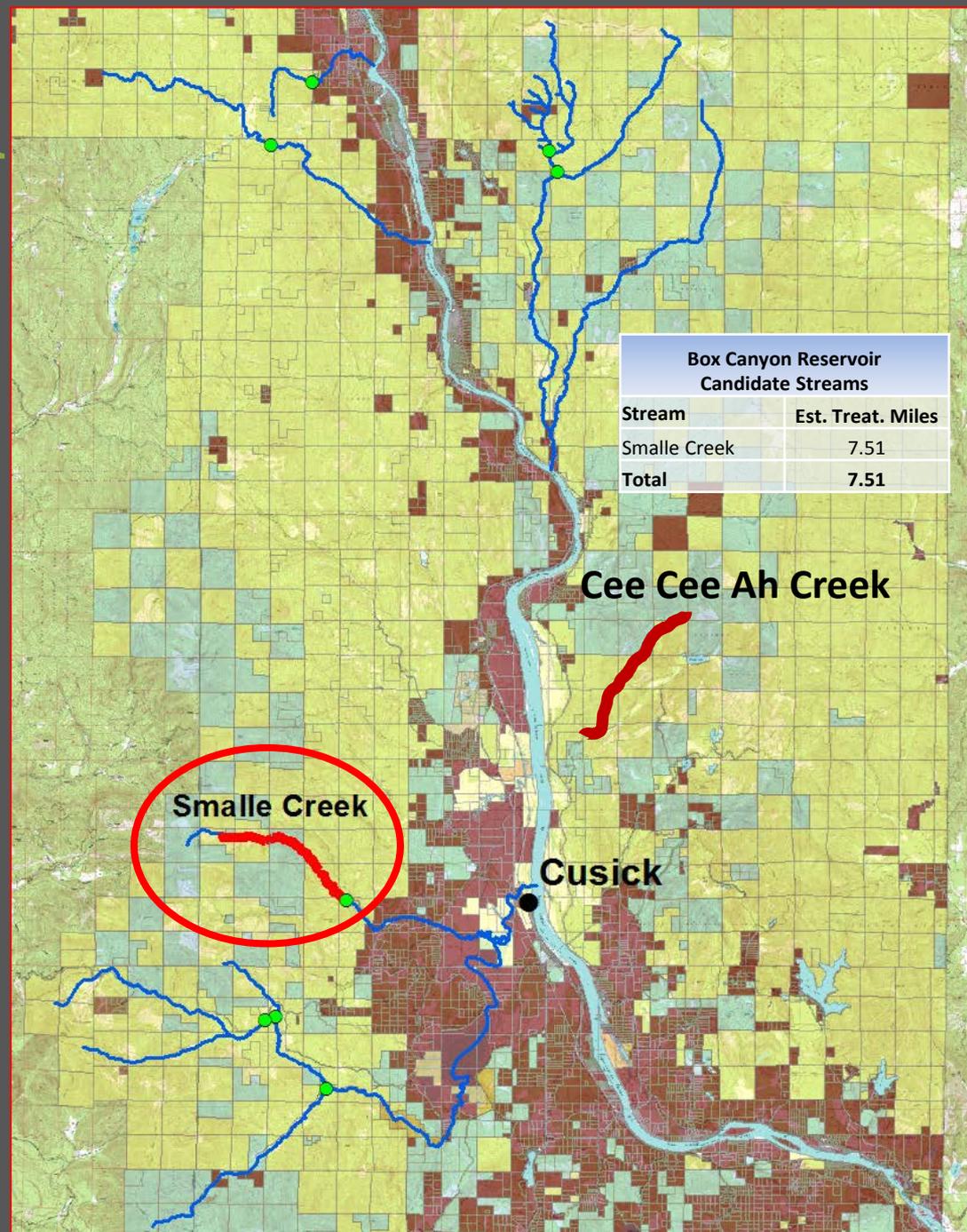


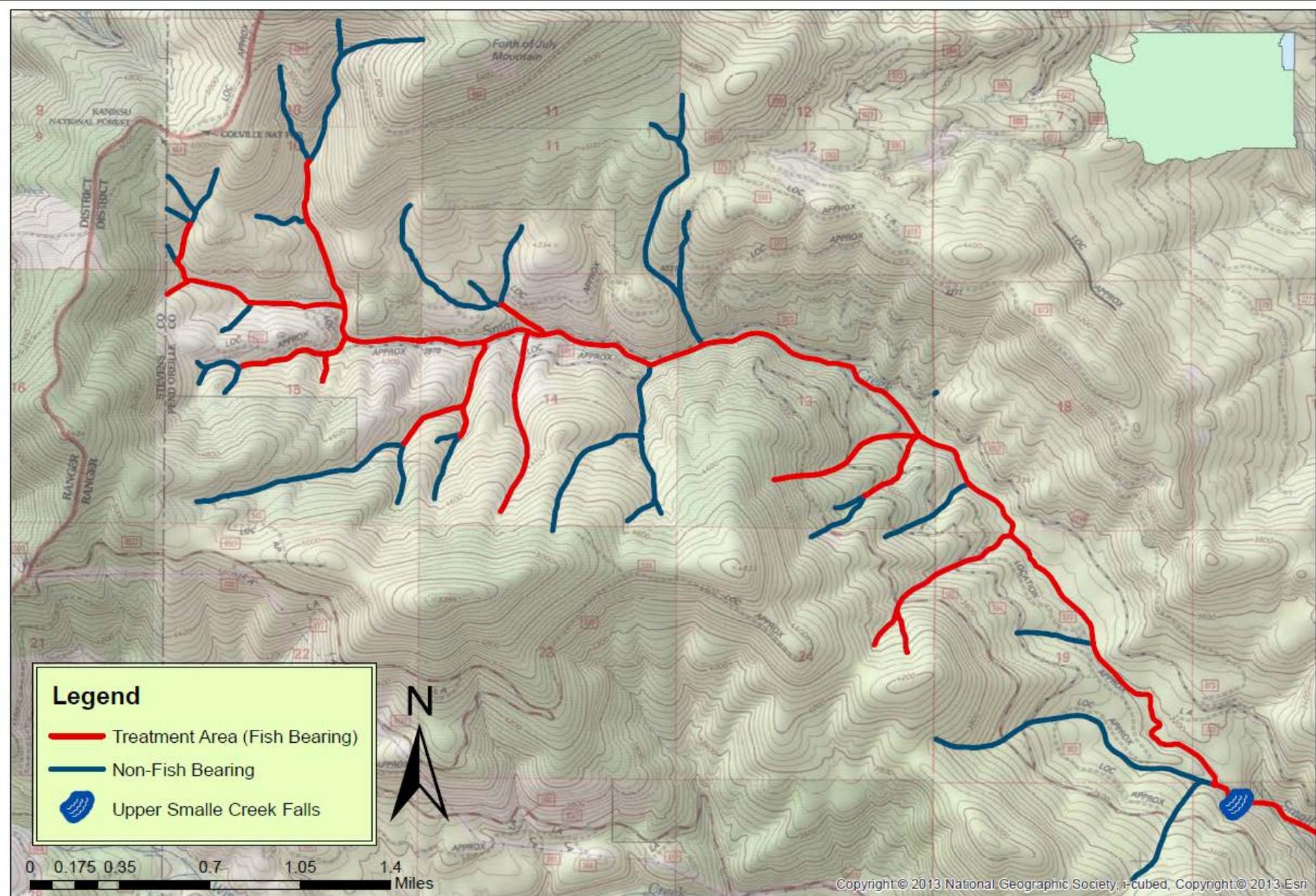
# Smalle Creek

- Has Natural Barrier
- No/Limited Water Rights
- No/Limited Fishing
- Mostly Public Land
- Surveys Completed
- No Grazing

## Land Ownership Key

-  = Publicly Owned (F.S., DNR, etc.)
-  = Large Timber Companies (Riley Creek, Stimson)
-  = Mining Companies
-  = POPUD
-  = Privately Owned
-  = Natural Barriers





# Upper Smalle Creek Westslope Cutthroat Trout Restoration

# Upper Smalle Creek: General Characteristics



Photo: KNRD

- Natural barrier consisting of series of large waterfalls.
- >7.5 miles of total habitat.
  - 8 fish-bearing tributaries.
  - 9 non fish-bearing tributaries.
  - Extensive off channel habitat.
- Discharge:
  - 0.45 -1.42 cfs.
  - 29 hour mainstem travel time.
- Exclusively Brook Trout.
  - Estimated 11,490 Individuals.



# Thanks!

