

Rock Creek Fish and Habitat Assessment Project

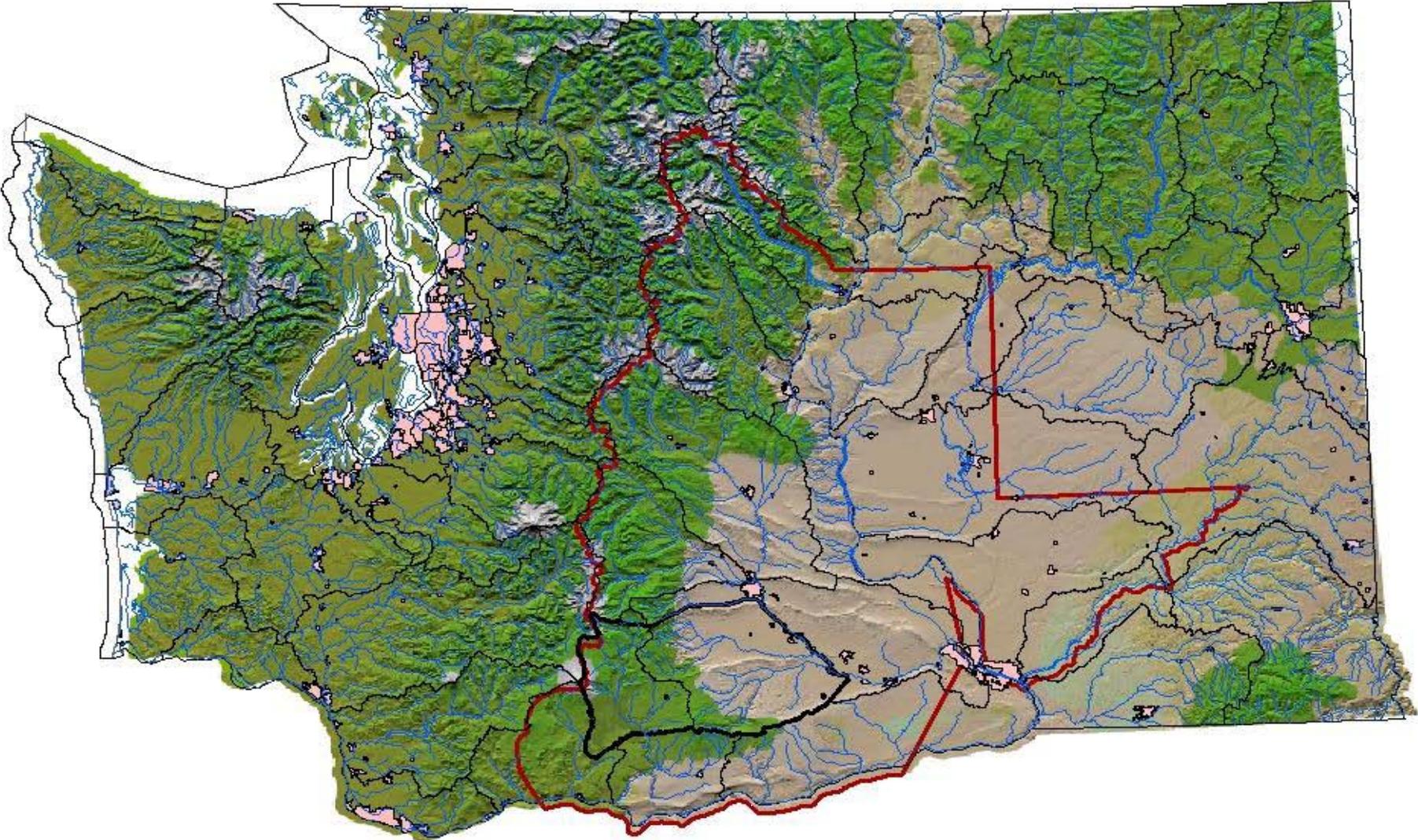
Elaine Espirito
Yakama Nation Fisheries Resource Management



Overview

- *Yakama Nation "Usual and Accustomed Areas"*
- Rock Creek Band
- Subbasin map
- Rock Creek fish & habitat assessment project
- Anadromous salmonids
- Primary monitoring activities
- Habitat-environmental monitoring

"Usual and Accustomed Areas" of Yakama Nation Tribes and Bands



Rock Creek Band

- The Rock Creek "Kah-milth-pah" Band
- One of the fourteen recognized tribes and bands that constitute the Yakama Nation Confederated Tribes and Bands
- Rock Creek Hau-hoo-pum village earliest documented in Lewis & Clark Journals





Five Columbia River Tribes.
in Council lodge 1931

Carrable
Foto

Rock Creek Subbasin

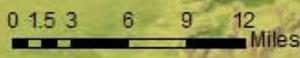


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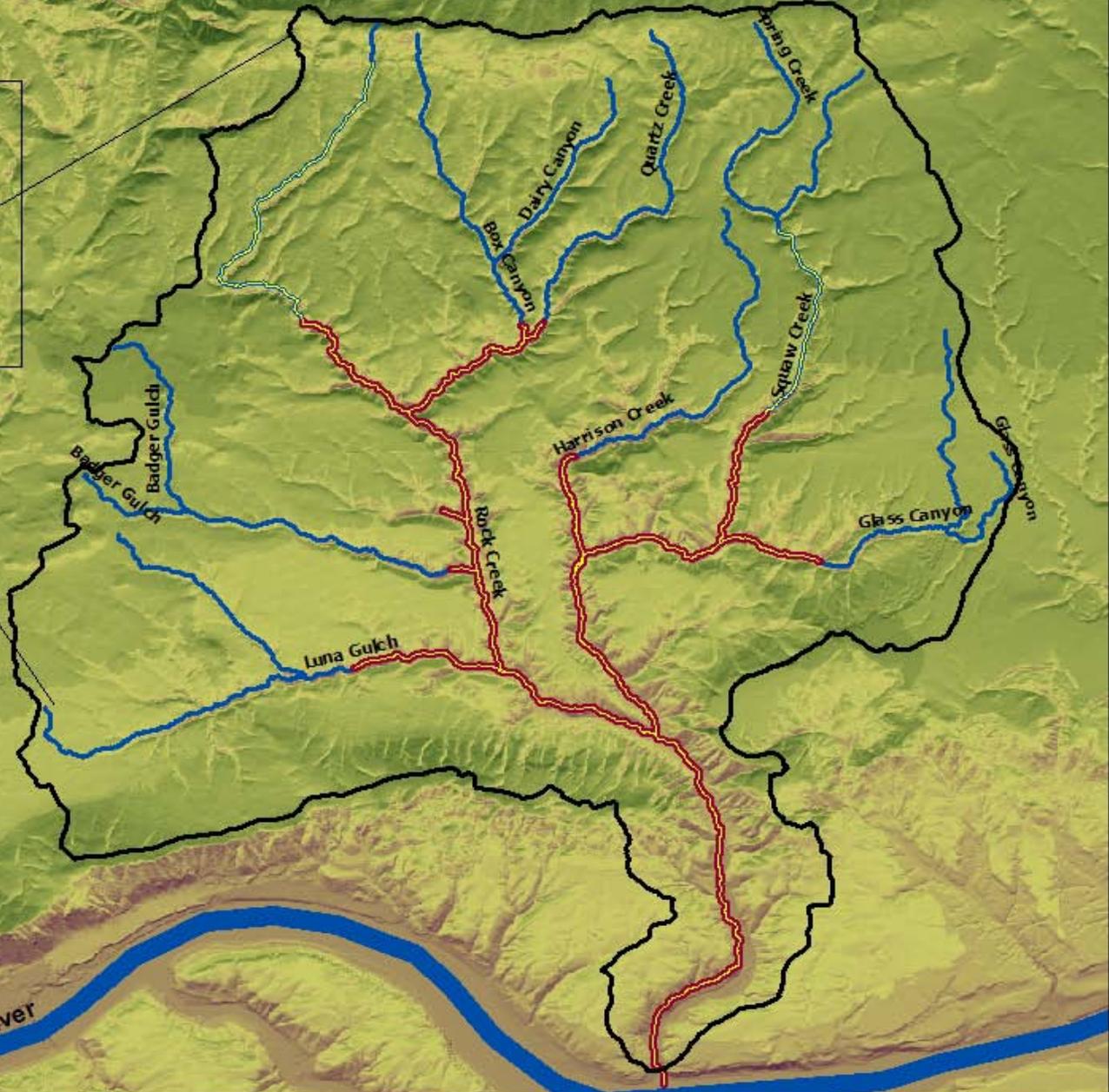
-  Rock Creek Watershed
-  Fry *O. mykiss*
-  Adult *O. mykiss*



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Columbia River



Rock Creek Fish & Habitat Assessment Project

- BPA funded
- Characterize baseline conditions of the watershed and anadromous fish habitat to prioritize sites for future restoration
- Evaluate the distribution and extent of anadromous salmonids throughout the watershed
- Conduct a genetic analysis on Rock Creek steelhead

Anadromous salmonids in Rock Creek watershed



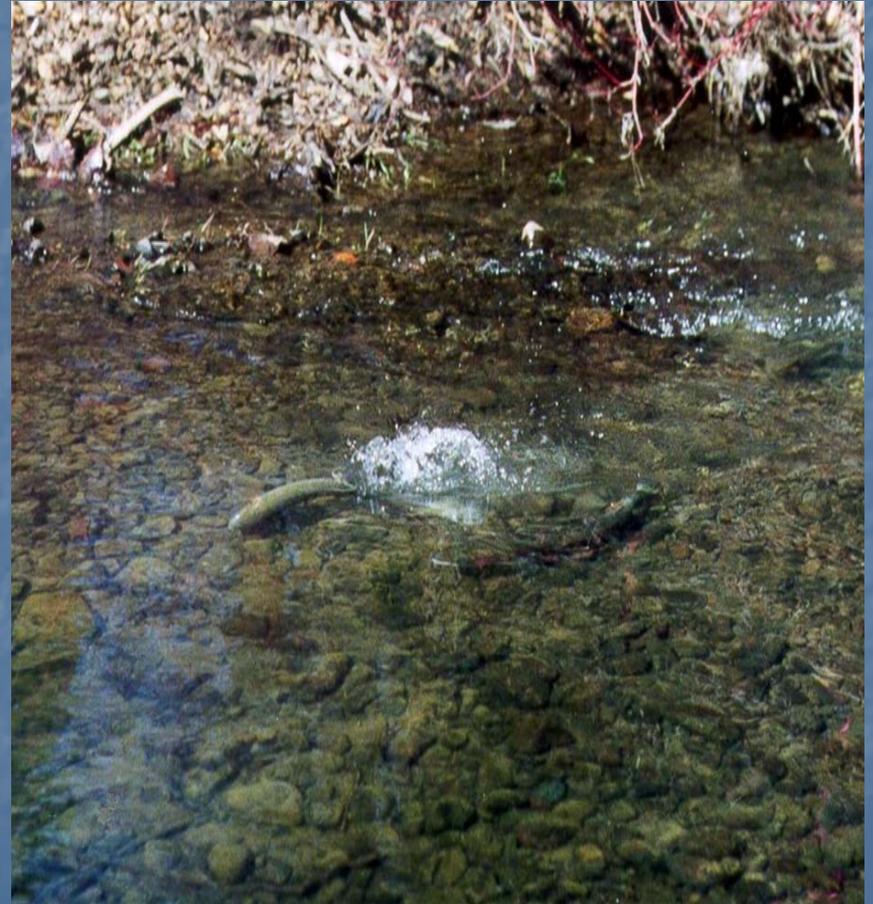
- Fall Chinook
- Coho
- Mid-Columbia Steelhead (ESA listed threatened)

Primary Monitoring Activities

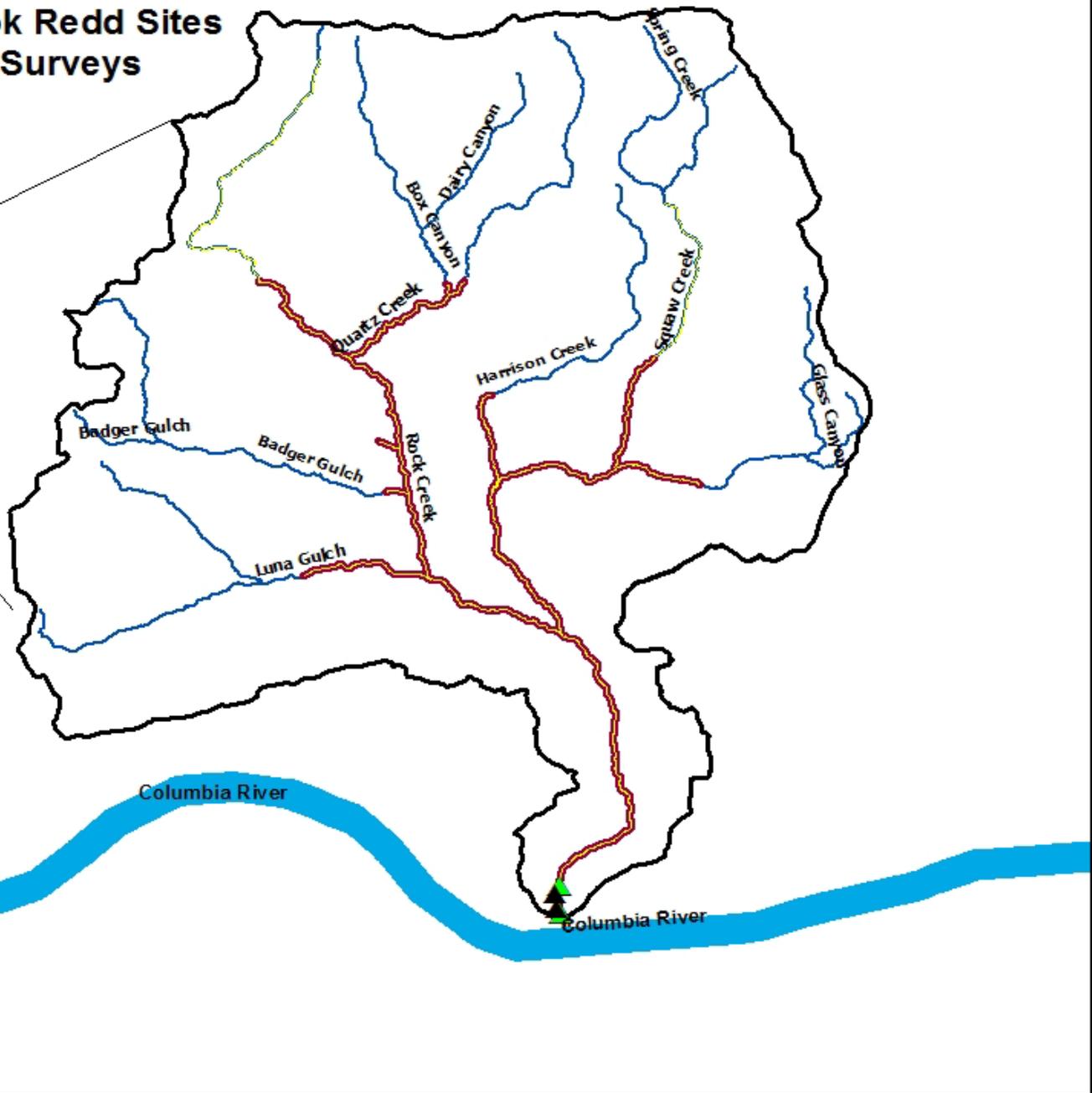
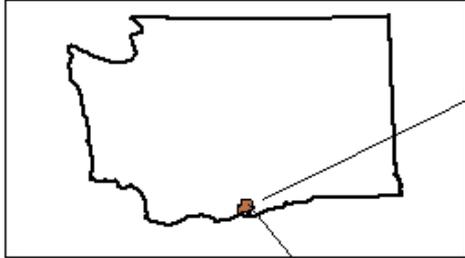
- Spawner surveys (redd counts)
- Juvenile and resident salmonid population surveys
- Genetic and pathogen sampling and analysis
- PIT-tagging of juvenile steelhead trout and monitoring

Spawner Surveys

- Rafting and wading redd count surveys
- Annual survey of the Rock Creek mainstem and its tributary streams
- Covering 14 total stream miles – 3 passes
- GPS coordinate record for redd locations
- Sex, scale samples, and mark or tags were recorded for each carcass



Rock Creek Fall Chinook Redd Sites 2007-08 & 2008-09 Surveys

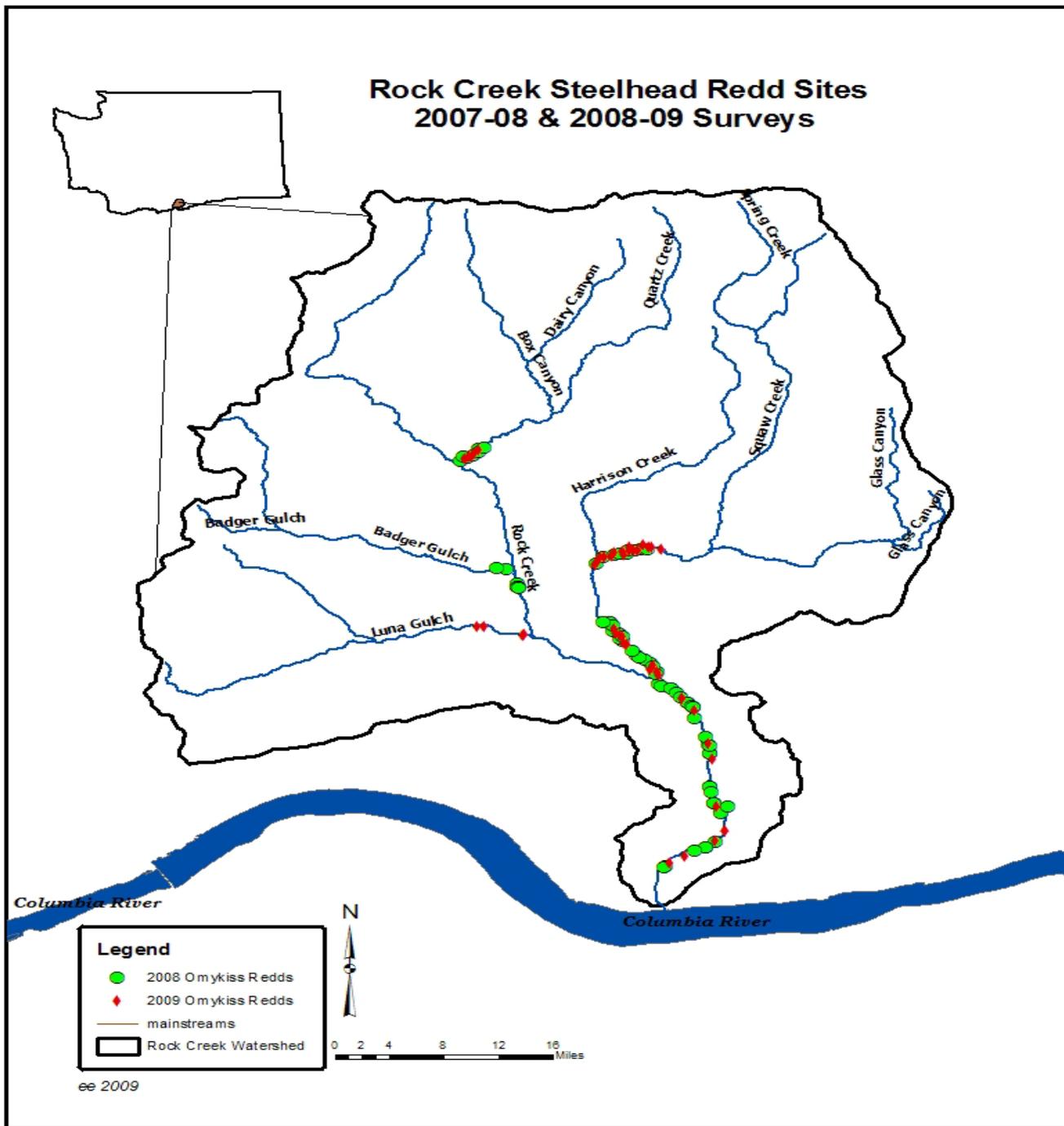


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- ▲ 2007-08 Fall Chinook Redds
- ▲ 2008-09 Fall Chinook Redds
- ▭ Rock Creek Watershed
- Fry *O. mykiss*
- Adult *O. mykiss*



Rock Creek Steelhead Redd Sites 2007-08 & 2008-09 Surveys



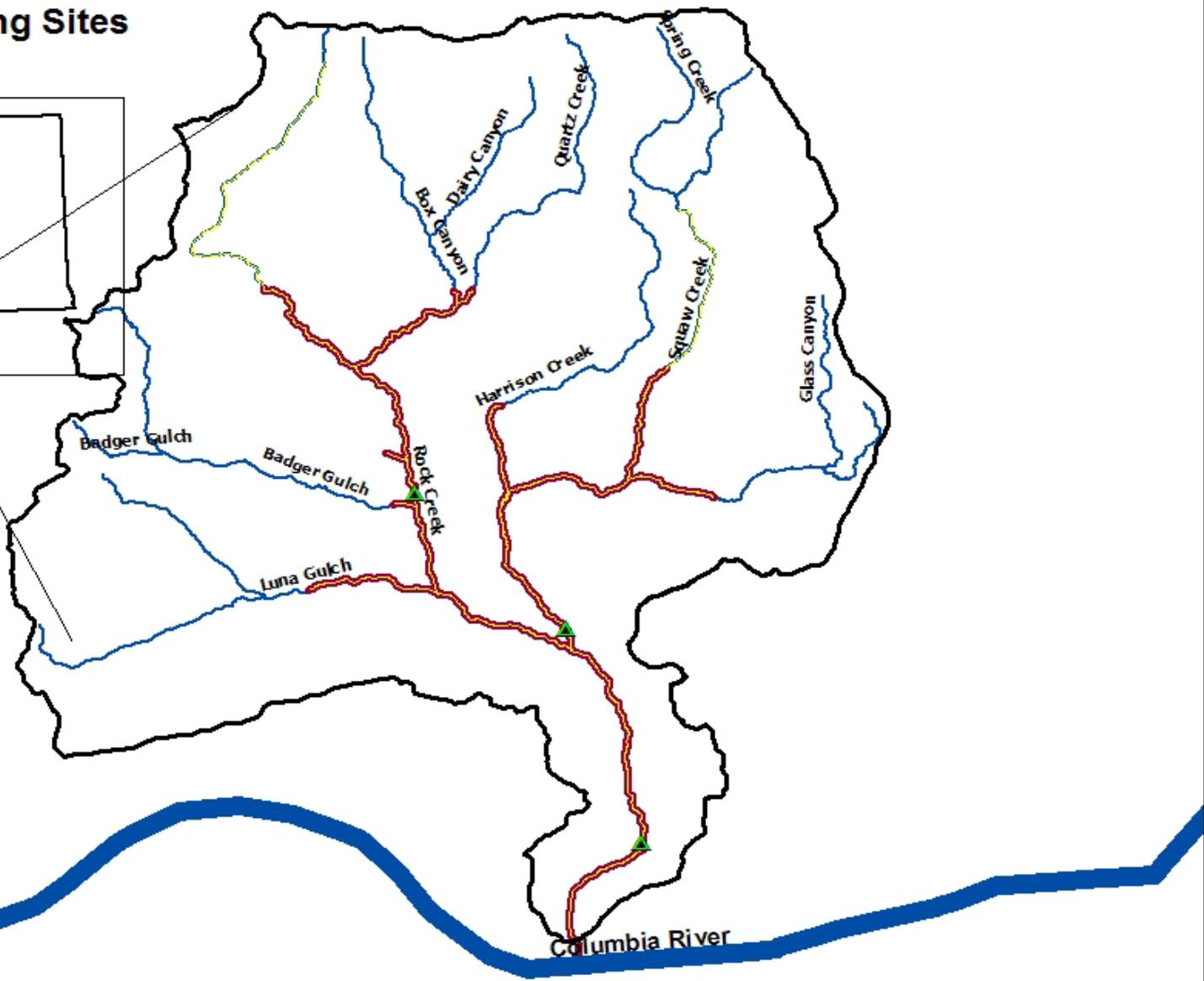
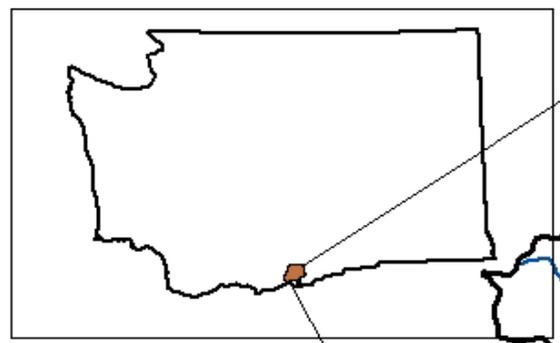
Genetic sampling and analysis

- 155 samples were collected from three sites in Rock Creek and Squaw Creek
- Samples were sent to the CRITFC Genetics Lab for analyses

Results:

1. CRITFC geneticists found genetic similarity between the collections of juvenile *O. mykiss* within the watershed
2. A significant distinction from other populations from out-of-basin in the Middle Columbia region

Rock Creek Fish and Habitat Genetic Sampling Sites

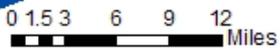


Legend

- Rock Creek Watershed
- Fry *O. mykiss*
- Adult *O. mykiss*
- Genetic Sampling Sites



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Juvenile steelhead PIT-tagging

- A total of 700 juvenile steelhead trout were PIT-tagged during fall 2009
- Two multiplex PIT-tag readers were installed in Rock Creek and Squaw Creek during summer 2009
- Steelhead smolt out-migration and adult return data is currently being collected since this is year one.

Habitat-environmental monitoring

- Stream habitat surveys
 - 10 survey reaches throughout watershed
 - Habitat unit, LWD, Riparian condition
- Stream temperatures and water quality
 - Thermographs -14 locations in watershed
 - Water quality -8 locations in watershed
 - monthly
 - pH, conductivity, DO, turbidity, temperature

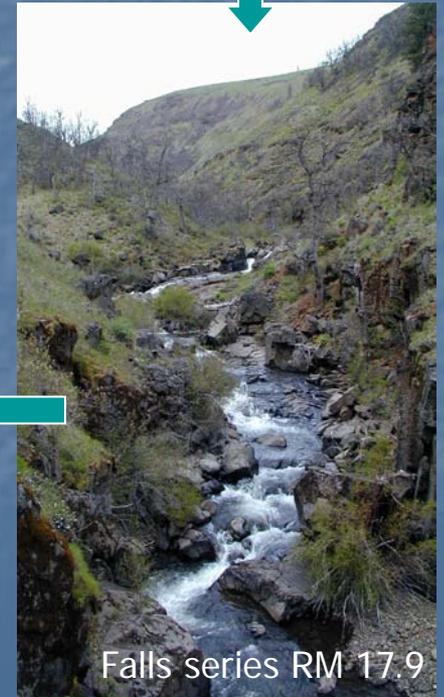


Forested Headwaters
Rock Creek RM 21.9



Confined Canyon RM 19.4

From the headwaters to the alluvial fan



Falls series RM 17.9



Transitional zone
to alluvial fan RM 10.2



Rock Creek
Alluvial Fan RM 6.4

The end

