



# **BULL TROUT RECOVERY PLANNING IN THE YAKIMA BASIN**

**Presented by Cassandra Weekes**

**Mid-Columbia Fisheries Enhancement Group**

**Supported by the Yakima Basin Fish & Wildlife Recovery Board**

# PRESENTATION OVERVIEW

- Distribution and status of Yakima Basin bull trout
- Yakima Bull Trout Action Plan
- Bull Trout Working Group
- Projects on the ground



Photo: Eric Anderson, WDFW

# **YAKIMA BASIN BULL TROUT POPULATIONS**

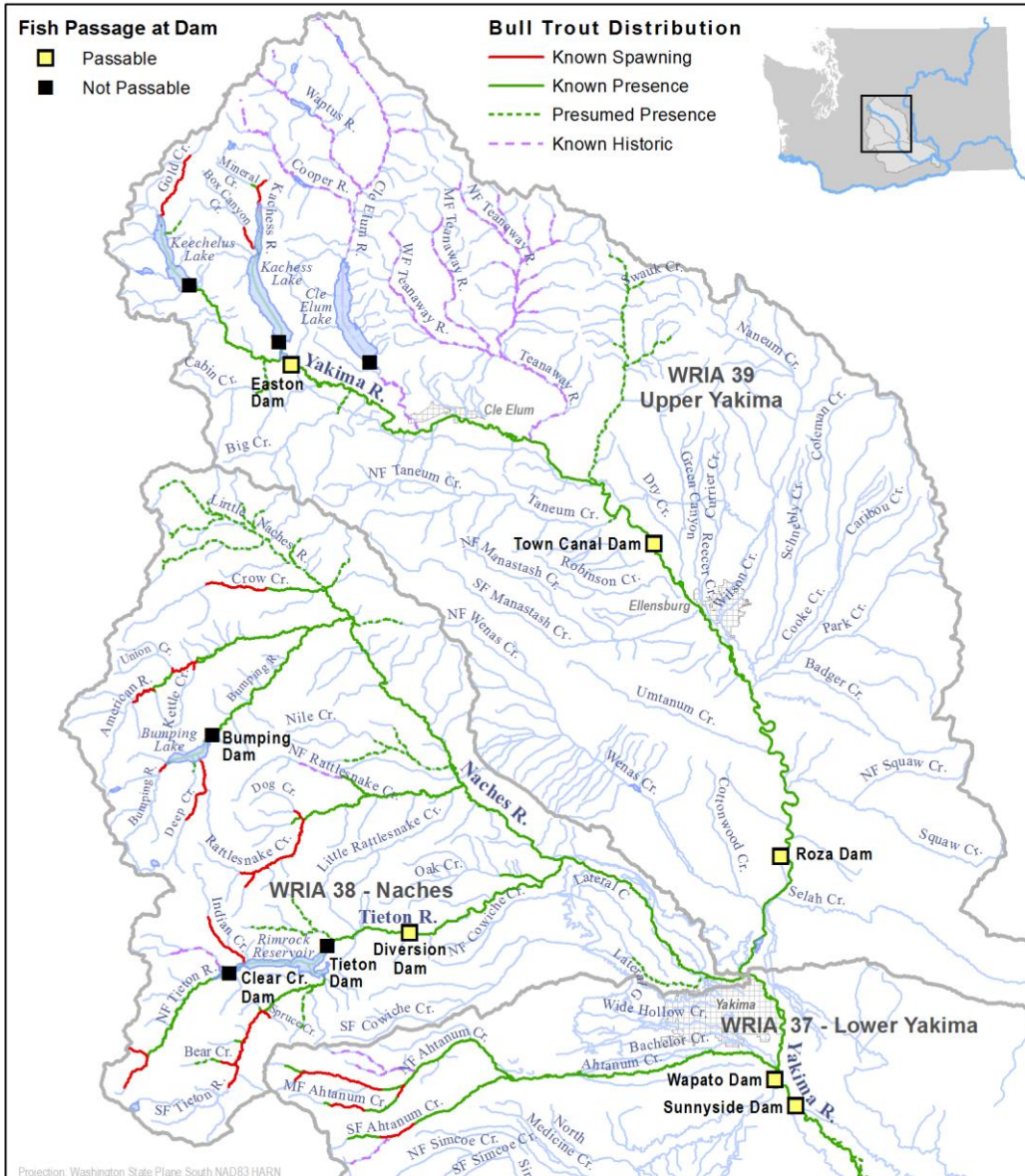
- 15 recognized populations; 12 genetically distinct
- Most are isolated in non-anadromous areas
- Impacted by dams & reservoir operations
- Much of the headwater habitat is in good condition
- Highly protective fishing regulations
- Local extirpations in last decade
- Highly vulnerable to climate change





Photo: Joel Sartore, National Geographic

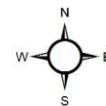
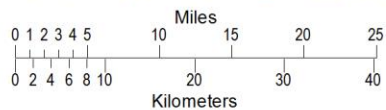
# Yakima Basin Bull Trout



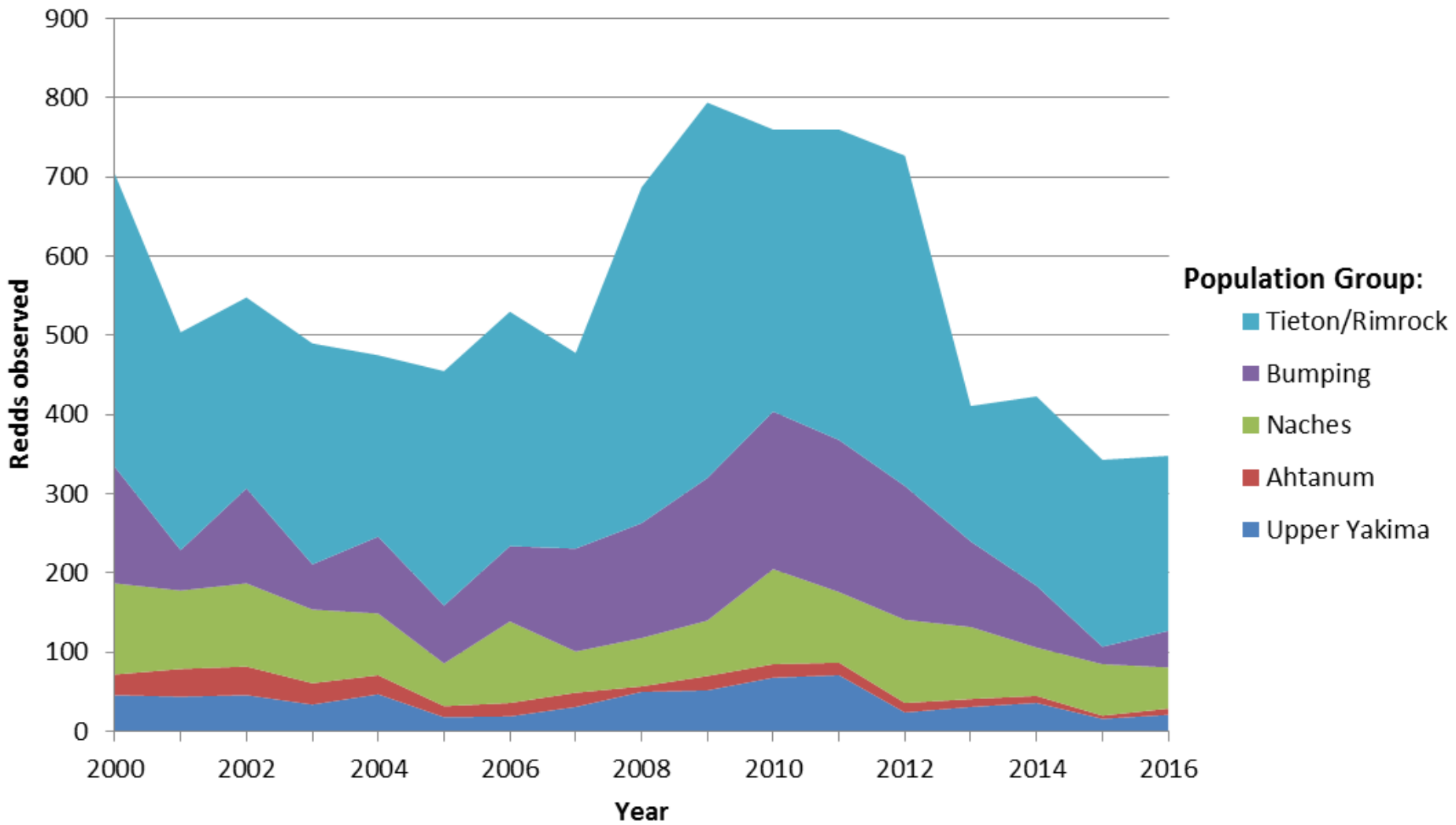
Projection: Washington State Plane South NAD83 HARN



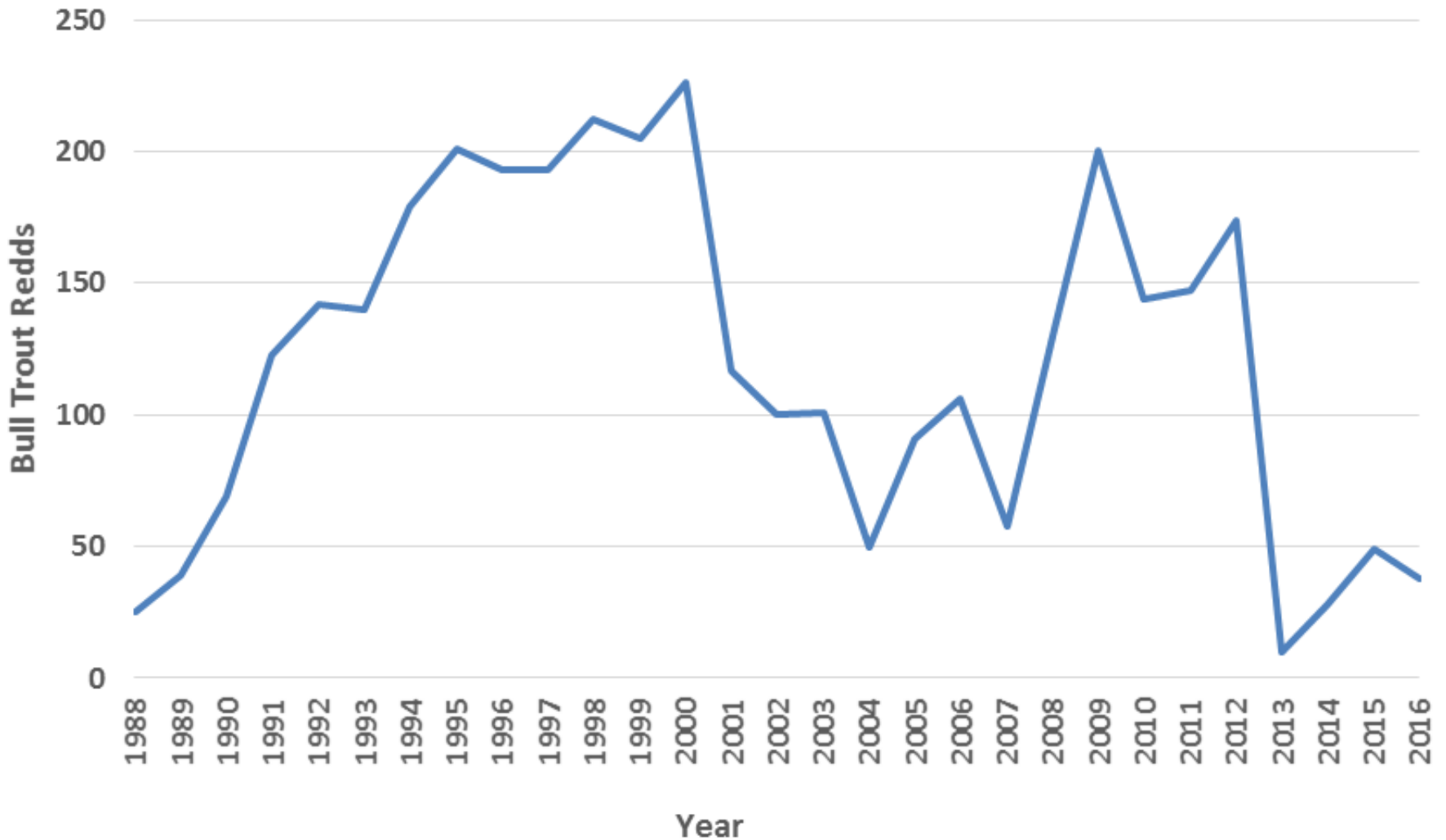
Washington  
Department of  
**FISH and  
WILDLIFE**



# Yakima Basin Bull Trout Redd Counts



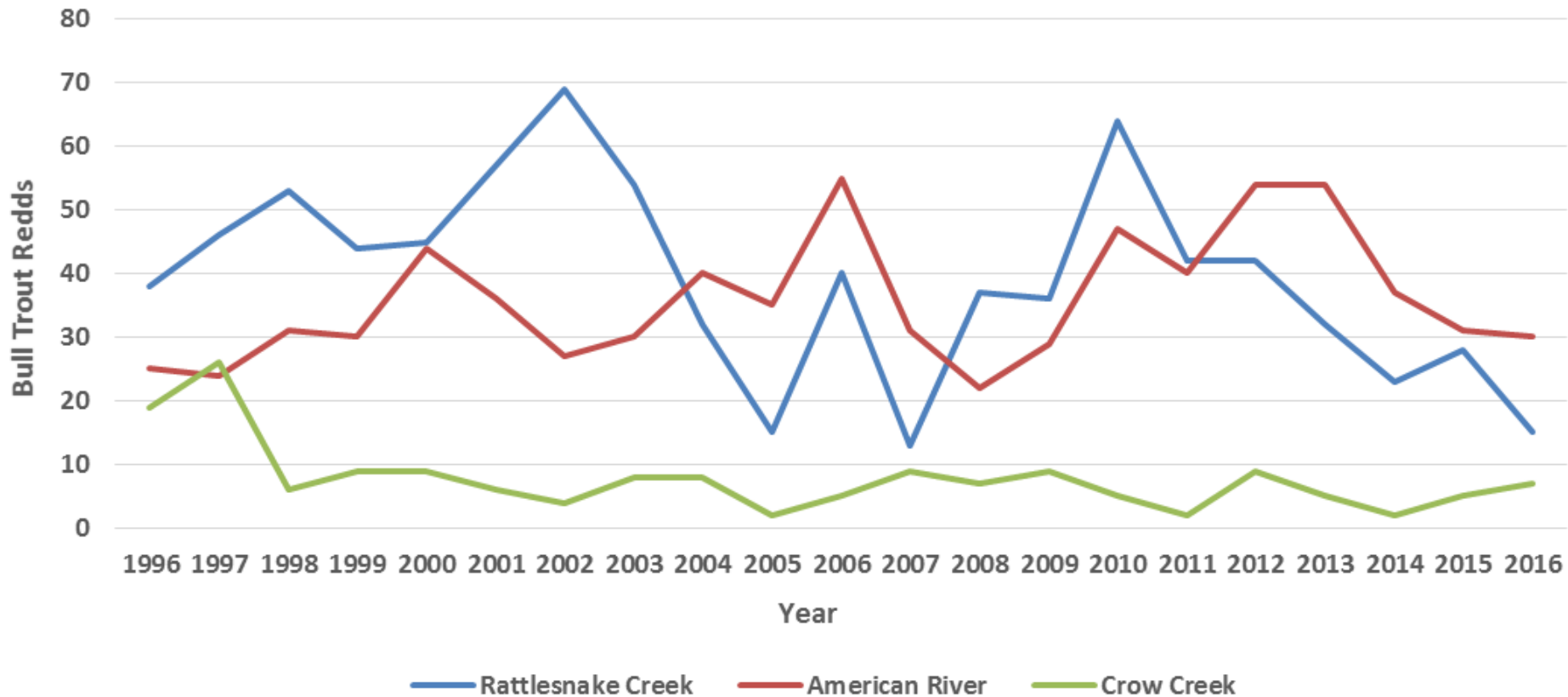
## Indian Creek Bull Trout Redds



Indian Creek redd counts have been down significantly, ranging from 10-49 redds annually since 2013.



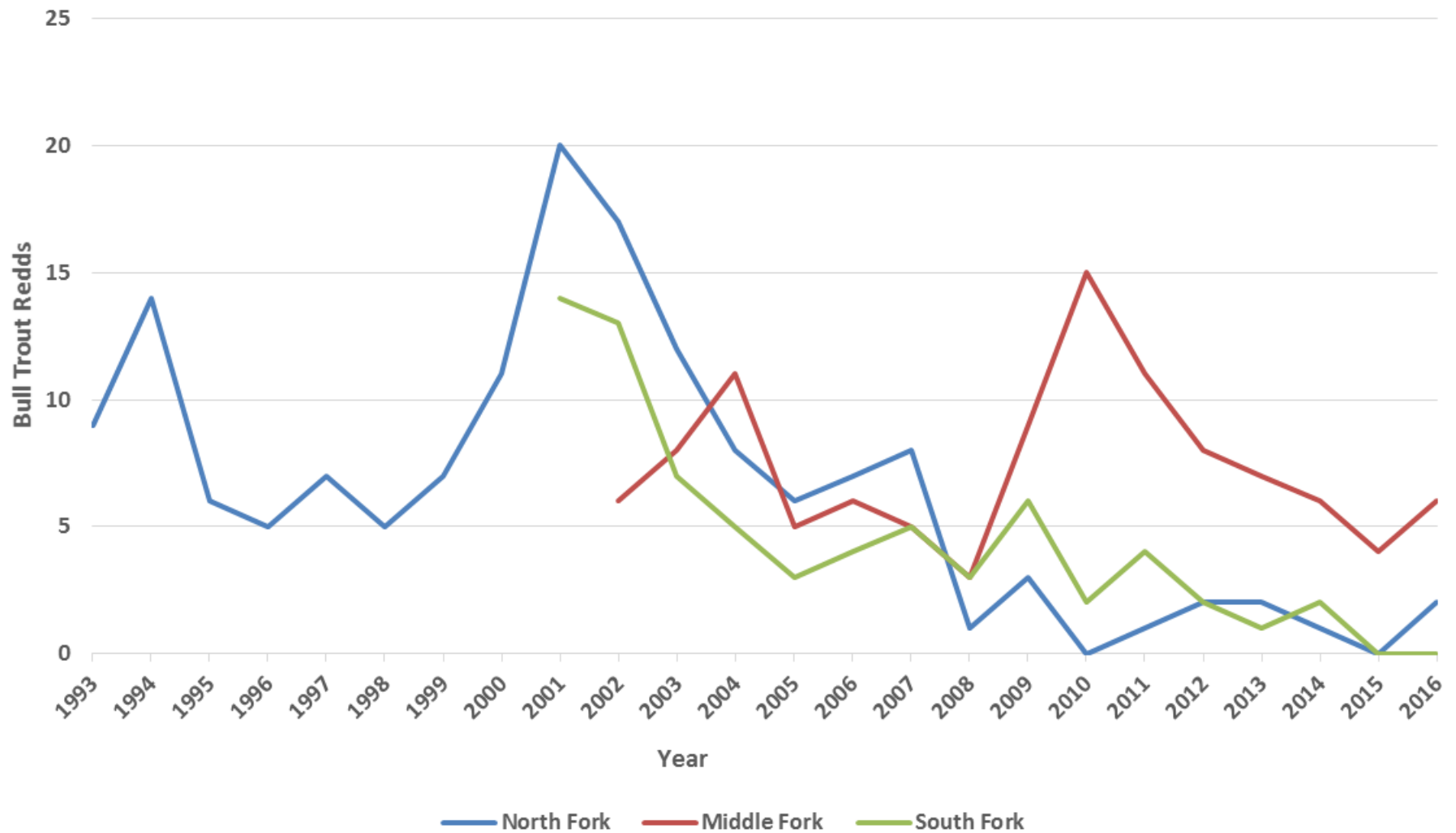
## Naches Fluvial Bull Trout Redds



Rattlesnake Creek, American River and Crow Creek continue to have below average redd counts.



## Ahtanum Creek Bull Trout Redds



- The NF Ahtanum had zero redds in 2015 and 2 in 2016.
- The MF Ahtanum has had <10 redds annually since 2012.
- The SF Ahtanum had zero redds in 2015 and 2016.

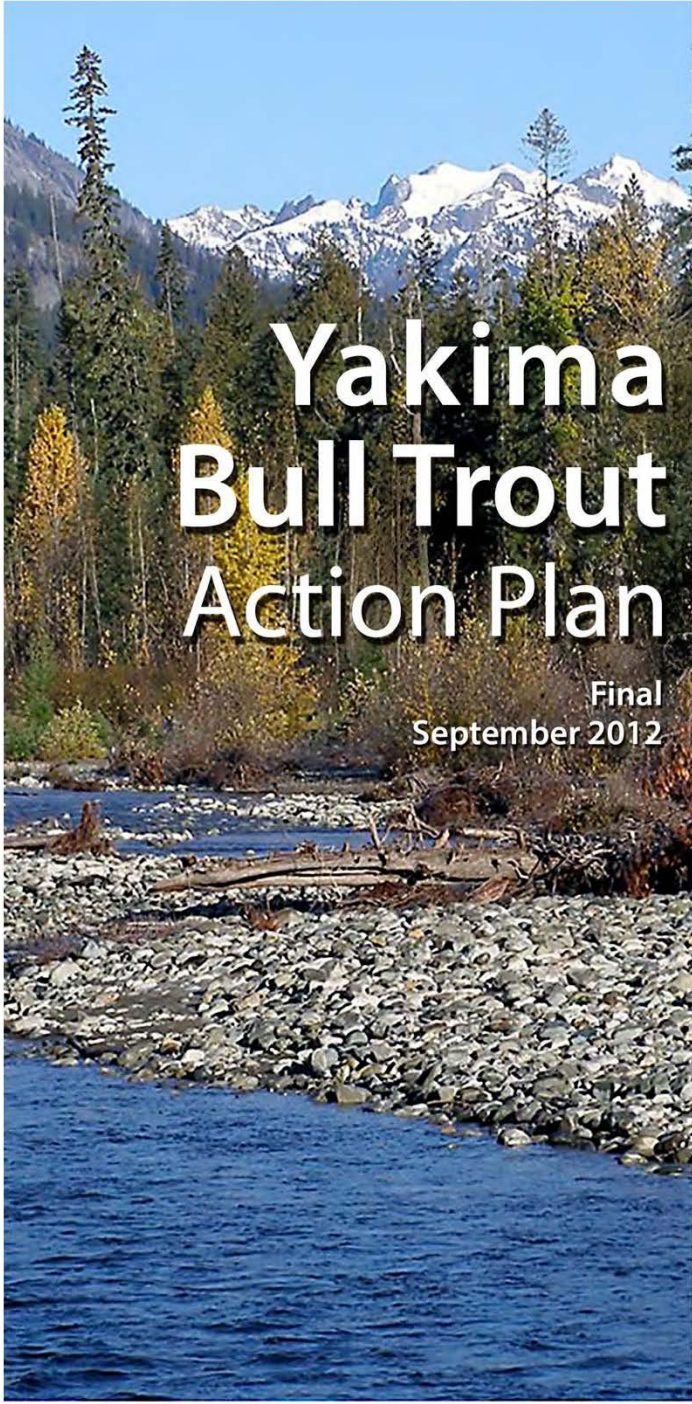


Photo: Eric Anderson, WDFW

# **BULL TROUT RECOVERY PLANNING**

- WDFW focus on bull trout since 1980s
- USFWS listing in 1998
- USFWS Draft Recovery Plan completed in 2001
  - *Yakima Bull Trout Technical Team convened to help draft Chapter 21 on the Yakima Basin*
- 2012 Bull Trout Action Plan





# Yakima Bull Trout Action Plan

Final  
September 2012





# 2012 YAKIMA BULL TROUT ACTION PLAN

- Written collaboratively between 2010-2012
- Led by YBFWRB with support of the reconvened local Bull Trout Working Group
- Goal was to define actions that will benefit bull trout populations
- Action Plan **≠** Recovery Plan
- It is a detailed assessment of limiting factors and possible restoration actions for each population

# Bull Trout Working Group



**Open membership;  
Meets every 2 months**



**Respect  
authorities and  
initiatives of  
partners**



**Informal  
accountability**



**Go-to place to share  
updates and coordinate  
activities**



# **CURRENT BULL TROUT WORKING GROUP FOCI**

- 2016-2017 Yakima Bull Trout Action Plan (BTAP) update
- Update and maintain the bull trout resource library
- Gather institutional knowledge before retirements
- Provide input on bull trout projects and mitigation included in the Yakima Basin Integrated Plan
- Secure funding for bull trout projects and coordination



# 2016-2017 BULL TROUT ACTION PLAN UPDATE

Year-long process to  
develop new actions  
and revise 2012  
actions

Initial update is  
nearing completion!!

Ensure the BTAP is  
consistent with the  
2015 USFWS Final Bull  
Trout Recovery Plan

Met on a rotating  
cycle to review  
priorities and next  
steps

## Ahtanum Action #6: Increase Instream Flow in Lower Ahtanum Creek

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Action Type: Recovery

Life stage(s) affected: Subadults/ Adults in FMO Habitat

Threat addressed: Altered Flow Regimes

Status: In Progress

Severity: Moderate

Link to Threats Table: A4

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### Action Description

Look for opportunities for diversion reduction-consolidation agreements and/or water right purchases or leases and/or on-farm water conservation projects to reduce water use and augment instream flows. Additional flow will increase habitat complexity.

### Justification/Background

Minimum flows have been established in lower reaches but irrigation withdrawal still results in significant flow depletion during the summer and early fall resulting in a net loss of habitat complexity, higher water temperatures and poorer passage conditions.

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Key Partners: WDFW; NYCD; AID; DOE; Yakama Nation

Time to Implement: Ongoing

Time to Benefit: 3-10 years

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Cost Estimate: \$2.4 million

### Cost Derivation

Cost in Ahtanum system is estimated as ~\$120,000 per cfs as permanent in-stream purchase. Assume that additional 20 cfs would be ideal over next 10 year period.

### Status Notes

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#### Associated USFWS RUIP Actions:

- 1.2.10 Secure appropriate instream flows and move towards more natural flow regimes.
- 2.1.8 Improve stream flows to a more normative pattern so connectivity and refuge habitat are improved

#### Links to Other Plans:

Associated BOR Bull Trout Enhancement Plan Action #: N/A

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#### LIST OF NEXT STEPS:

- |        |  |                 |
|--------|--|-----------------|
| Step#1 | Review work done by NYCD, Yakama Nation, DOE, AID and others   | BTWG Priority 2 |
| Step#2 | Identify additional instream flow protections in Ahtanum Creek | BTWG Priority 2 |
| Step#3 | Explore water saving possibilities with WIP Ahtanum Unit       | BTWG Priority 1 |
- 

#### 2016 UPDATE NOTES:

The action description and justification/background were updated.

The action's current status, recommended next steps, USFWS Recovery Plan links and notes were added.

[Home](#) > [Groups](#) > [Yakima Basin References](#) > [Library](#)

## Library

Bull Trout

Lower Yakima

Trash

## Tags

[abundance](#) [Ahtanum](#) [all Yakima B...](#)

[American Riv...](#) [anadromous](#)

[Bear Creek](#) [Big Boulder ...](#)

[Box Canyon](#) [BTAP](#) [Bull Trout](#)

[Bumping](#) [Camp Creek](#)

[carrying cap...](#) [Cle Elum](#)

[Clear Creek](#) [Clear Lake](#)

[climate chan...](#) [Coal Creek](#)

[Cold Creek](#) [Columbia Riv...](#)

[conservation](#) [Cooper Creek](#)

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[Corral Creek](#)

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<input type="checkbox"/>	Title	Creator	Date Modified
<input type="checkbox"/>	1994 Washington Bull Trout Survey Results	Plum Creek Timber Company	4/4/2017 8:27 AM
<input type="checkbox"/>	2009 Teanaway redd and snorkel survey data	Morgan	4/6/2017 5:47 PM
<input type="checkbox"/>	2010 Sediment Sampling Results from the Little Naches and So...	Matthews	3/31/2017 2:50 PM
<input type="checkbox"/>	A disturbance-based ecosystem approach to maintaining and re...	Reeves et al.	4/7/2017 10:23 AM
<input type="checkbox"/>	A Framework to Assist in Making Endangered Species Act Deter...	USFWS	4/4/2017 3:16 PM
<input type="checkbox"/>	A power analysis on the monitoring of bull trout stocks usin...	Maxell	4/6/2017 1:12 PM
<input type="checkbox"/>	A Review of Bull Trout ( <i>Salvelinus confluentus</i> ) Life-history...	McPhail	3/31/2017 2:50 PM
<input type="checkbox"/>	A stakeholder project to model water temperature under futur...	Graves and Maule	3/31/2017 2:35 PM
<input type="checkbox"/>	Ahtanum Creek Bull Trout/Upper WIP Phase 2 Screen Project	WDFW	4/4/2017 4:15 PM
<input type="checkbox"/>	Ahtanum Creek fish passage and diversion screening priority ...	Kohr et al.	4/6/2017 11:51 AM
<input type="checkbox"/>	Ahtanum temperature data	Ecology	4/5/2017 2:49 PM

# **A FEW CURRENT ACTIVITIES**

- **Upper Yakima Basin eDNA Assessment**





**Upper Yakima Basin eDNA Assessment  
Timeline: Mid-July through September, 2017**

**Objectives:**

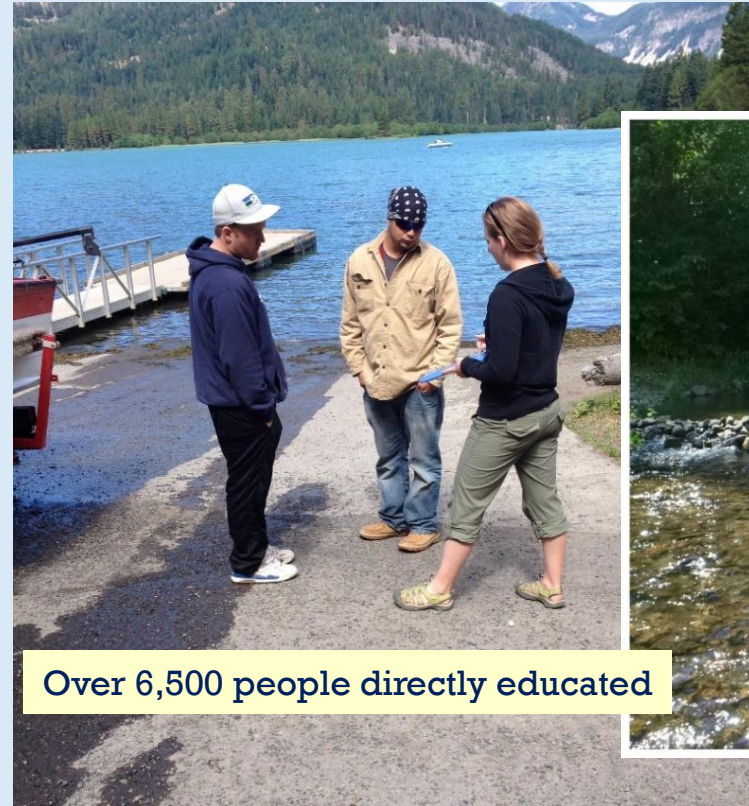
- 1. Determine presence and distribution of populations that are considered functionally extirpated; &**
- 2. Expand our knowledge on the distribution of our most imperiled populations**

# **A FEW CURRENT ACTIVITIES**

- **Upper Yakima Basin eDNA Assessment**
- **Bull Trout Task Force**



# Bull Trout Task Force



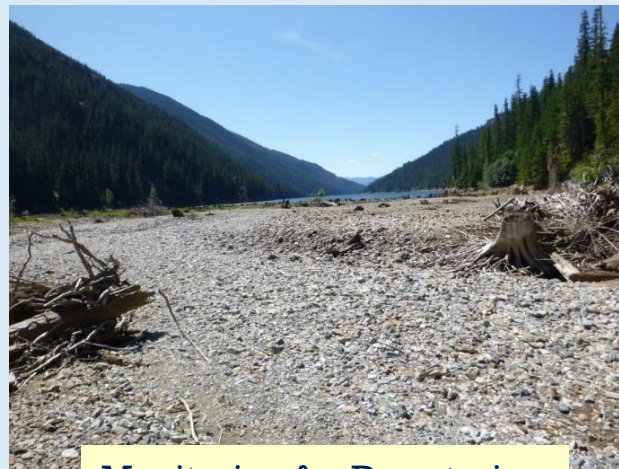
Over 6,500 people directly educated



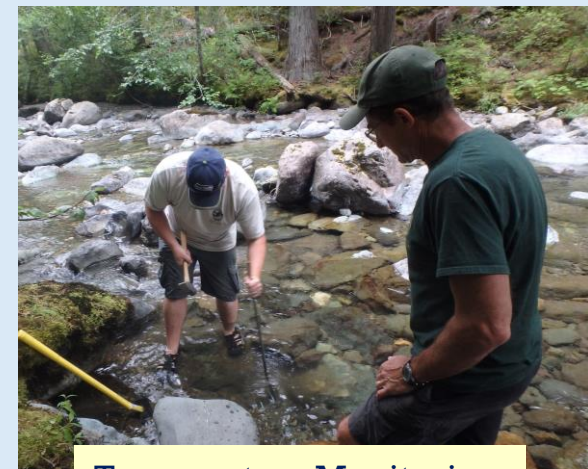
400+ rock dams removed



Posting signage



Monitoring for Dewatering




Temperature Monitoring

# **A FEW CURRENT ACTIVITIES**

- **Upper Yakima Basin eDNA Assessment**
- **Bull Trout Task Force**
- **Clear Creek Dam Fish Passage**





Clear Creek Dam

Clear Lake Spillway

**Clear Creek Dam Fish Passage Assessment: “For all intents and purposes it appears to be impossible for an adult Bull Trout to migrate up the spillway channel.”**

# **A FEW CURRENT ACTIVITIES**

- **Upper Yakima Basin eDNA Assessment**
- **Bull Trout Task Force**
- **Clear Creek Dam Fish Passage**
- **Gold Creek Habitat Restoration**



# GOLD CREEK HABITAT RESTORATION

- KCT has completed an assessment of aquatic conditions in Gold Creek and is designing restoration strategies to restore critical functions to the creek.
- Actions could include narrowing and stabilizing stream banks, restoring floodplains, increasing stream complexity with large wood, encouraging regeneration of riparian forests, and increasing the number of deep pools with cover.



Natural analog site upstream of RM 2



Proposed roughened floodplain concept

# **A FEW CURRENT ACTIVITIES**

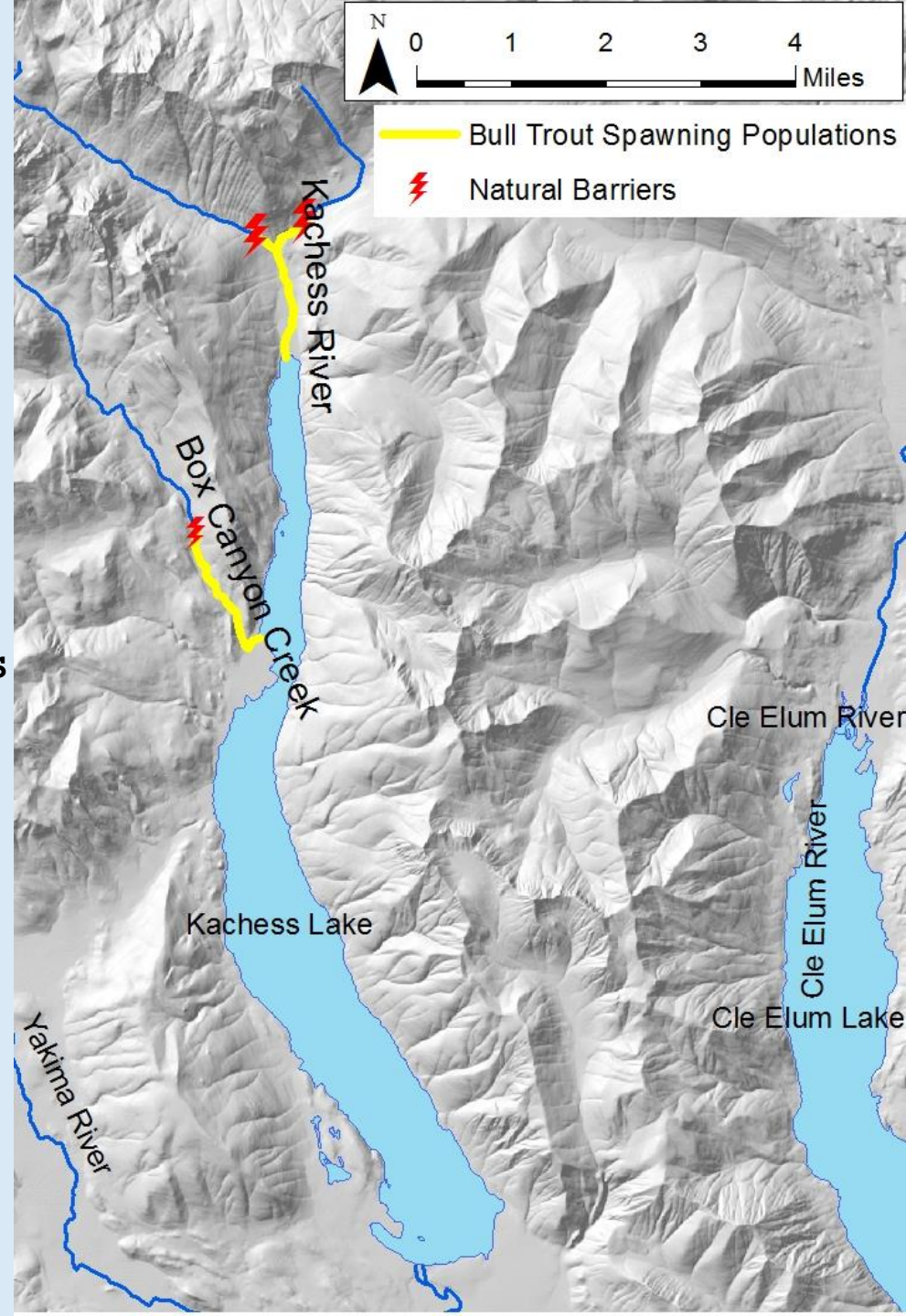
- **Upper Yakima Basin eDNA Assessment**
- **Bull Trout Task Force**
- **Clear Creek Dam Fish Passage**
- **Gold Creek Habitat Restoration**
- **Bull Trout Demographic and Habitat Surveys**



# BULL TROUT DEMOGRAPHIC AND HABITAT SURVEYS

## Next steps:

- Use data to inform Large Woody Habitat placement proposed by KCT
- Repeat snorkel surveys in both streams
- Complete habitat survey in Kachess River
- Process macroinvertebrate samples?
- Use data as baseline for future restoration projects



# **BULL TROUT WORKING GROUP LESSONS LEARNED**

- Dedicated staffing is necessary
- Consistency is key
  - Regular meetings and attendance from members
  - Building relationships and keeping it fun
- Arrange small planning meetings and work sessions between Bull Trout Working Group meetings

# FUTURE

- Development of a statewide program to support bull trout recovery
- Expanding our model to other basins
- Building regional support for bull trout recovery
- Continuing to build community, both locally and regionally



Photo: William Meyer,  
WDFW.









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Thanks to all of the partners who  
support bull trout recovery!



*This River Runs Forever*  
Yakima Basin Integrated Plan