

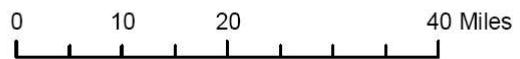
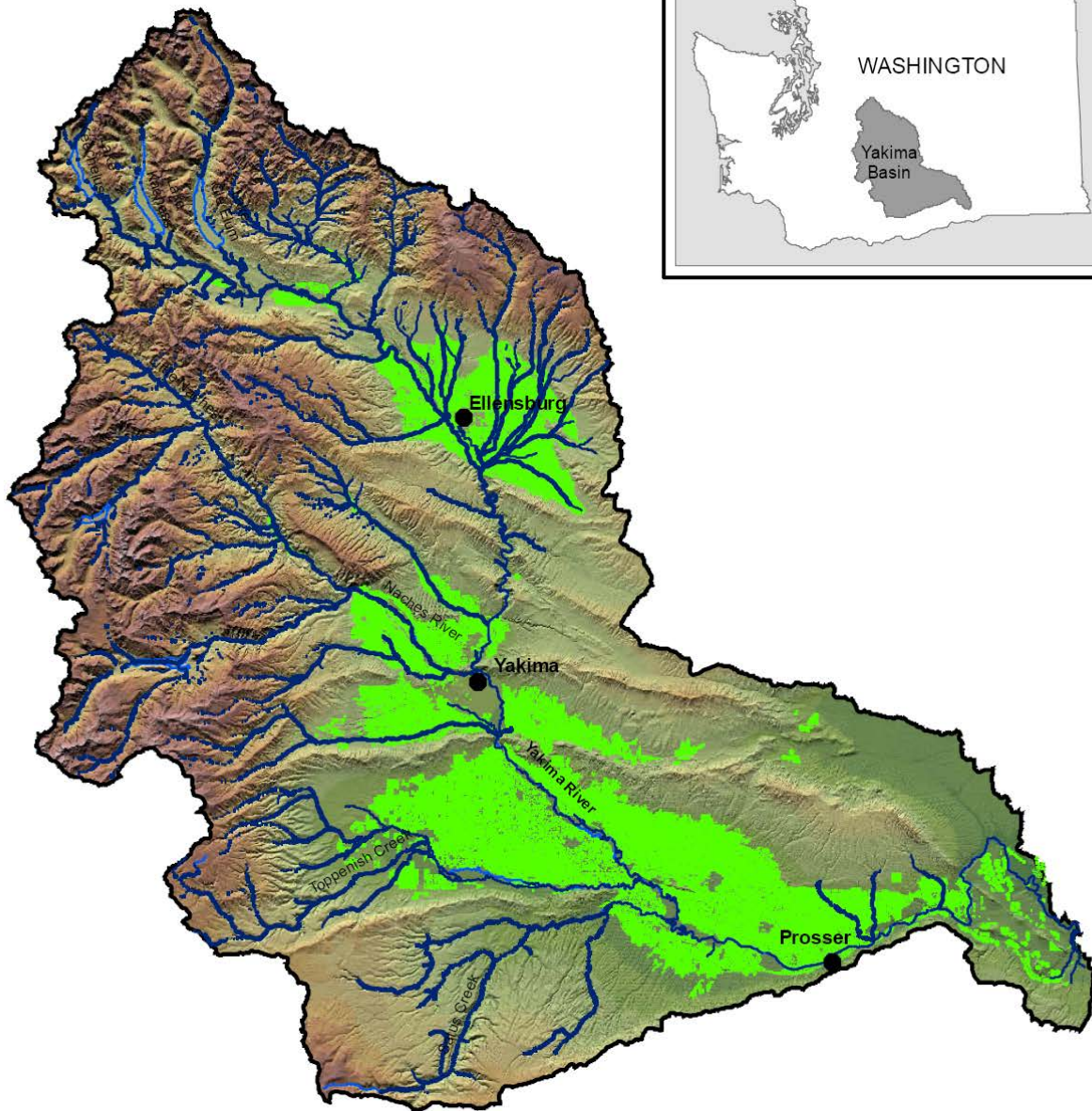
2015 YAKIMA SCIENCE & MANAGEMENT CONFERENCE

HABITAT OVERVIEW

Prepared by

Alex Conley

Yakima Basin Fish & Wildlife Recovery Board







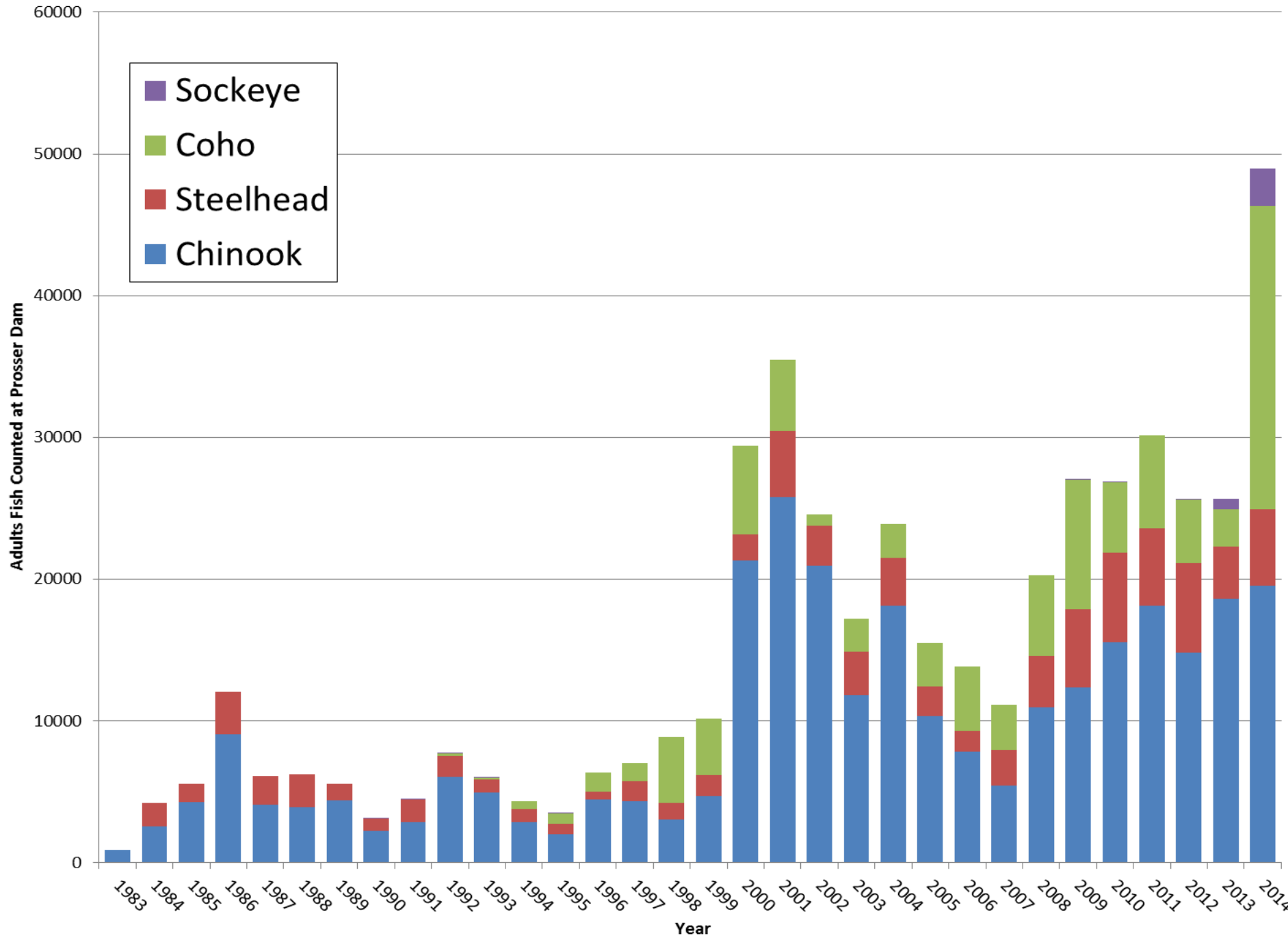






HISTORIC SALMON RUNS

Run	Low Estimate	High Estimate	Current Status	Low	Year	High	Year
Spring Chinook	200,000	500,000	Supplemented Population	666	1995	21,472	2001
Fall Chinook	38,000	100,000	Supplemented Population	523	1988	13,000	2002
Summer Chinook	??	??	Extirpated and reintroduced	-		1,536	2014
Coho	40,000	150,000	Extirpated and reintroduced	-	till 93	20,997	2014
Sockeye	100,000	200,000	Extirpated and reintroduced	-		2,676	2014
Steelhead	30,000	100,000	Wild Population	721	1990	6,796	2009
Total	408,000	1,050,000		1,910		66,477	
Bull Trout	??	??	Wild Population			2500-3000	
Lamprey	??	??	Wild Population			0 to 87 adults	





2009 YAKIMA STEELHEAD RECOVERY PLAN

Extracted from the
2005 Yakima Subbasin Salmon Recovery Plan

With Updates

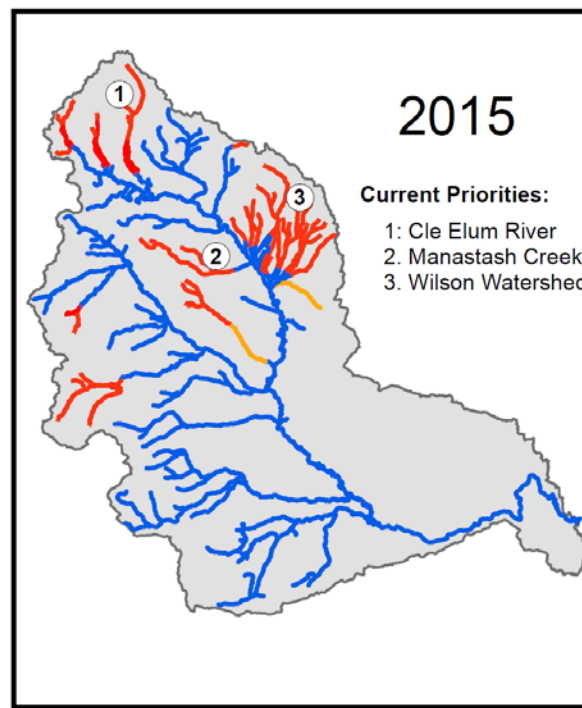
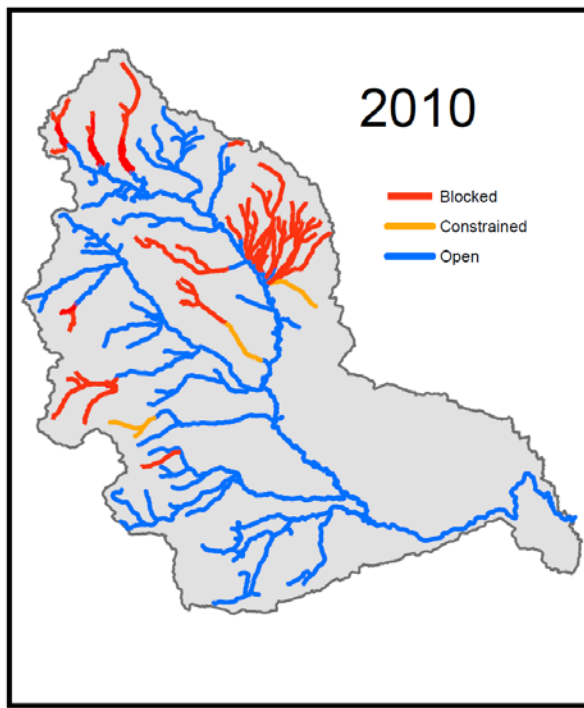
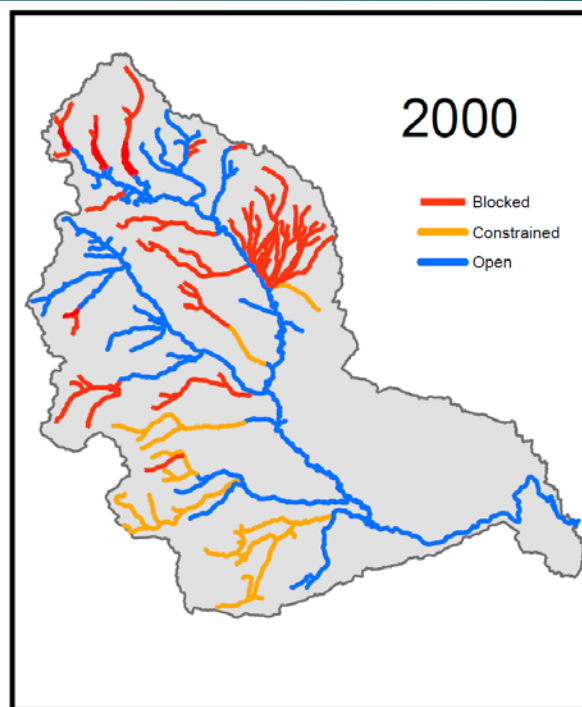
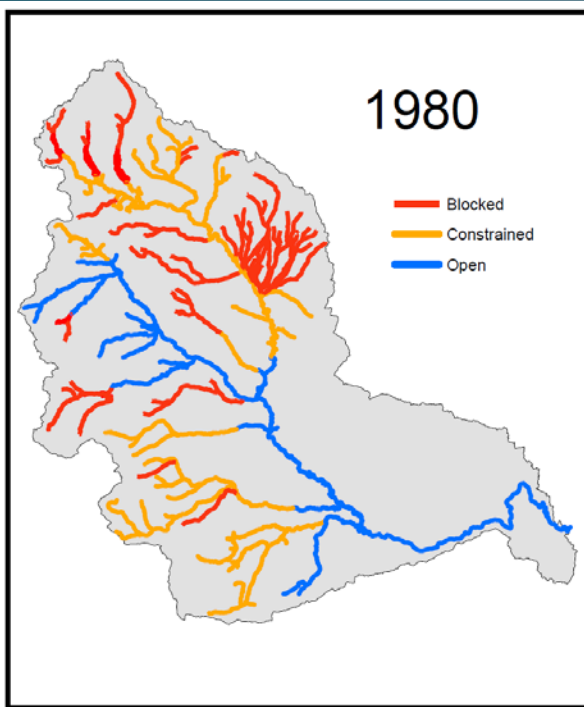
Final
August 2009



STEELHEAD RECOVERY PRIORITIES

94 In-basin Actions Identified, focusing on:

- Improved passage in key tributaries
- Instream flows and habitat improvements in key tributaries
- Improved mainstem flow conditions
- Mainstem floodplain improvement in priority reaches



CLE ELUM DAM FISH PASSAGE

- Bureau of Reclamation is lead,

- Key
Inter

Cle Elum Sockeye Reintroduction/Passage
David Fast & Brian Saluskin at 9:20 on Weds

- Ess
rein

Status of Juvenile Fish Passage Design for Cle Elum
Joel Hubble at 10:20 on Weds

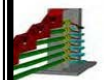
- EIS
pro

WHOOSHH- Potential Adult Passage Design
Todd Deligan at 10:40 on Weds

- Will
authorization



uit Structure



et Ramp



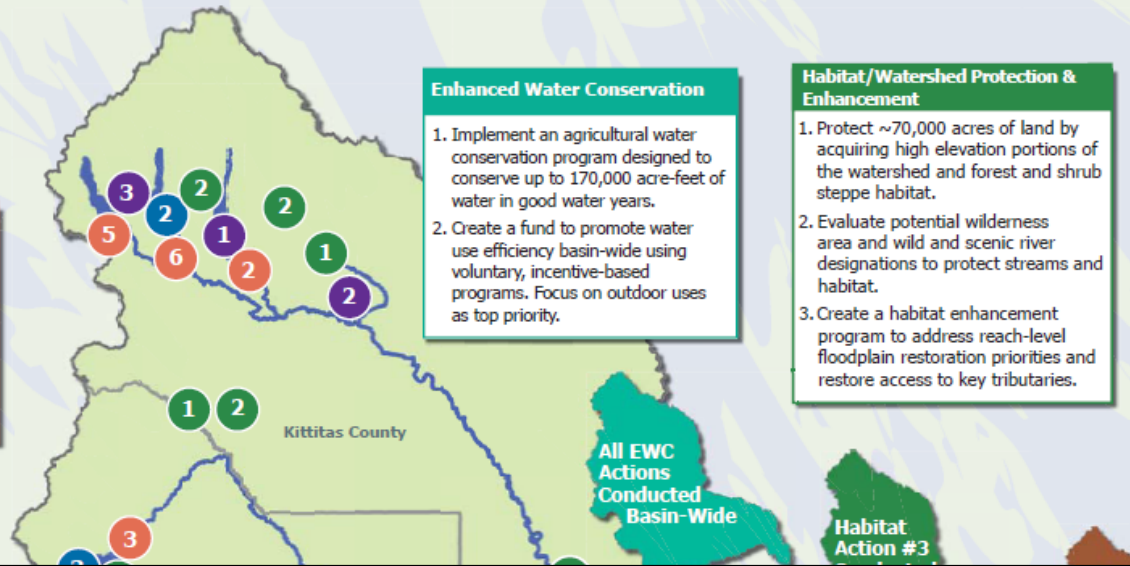
BUILDING A FUTURE FOR WATER, WILDLIFE AND WORKING LANDS

YAKIMA RIVER BASIN INTEGRATED WATER RESOURCE MANAGEMENT PLAN

Reservoir Fish Passage

Provide fish passage at:

1. Clear Lake
2. Cle Elum
3. Bumping
4. Tieton (Rimrock)
5. Keechelus
6. Kachess



Enhanced Water Conservation

1. Implement an agricultural water conservation program designed to conserve up to 170,000 acre-feet of water in good water years.
2. Create a fund to promote water use efficiency basin-wide using voluntary, incentive-based programs. Focus on outdoor uses as top priority.

Habitat/Watershed Protection & Enhancement

1. Protect ~70,000 acres of land by acquiring high elevation portions of the watershed and forest and shrub steppe habitat.
2. Evaluate potential wilderness area and wild and scenic river designations to protect streams and habitat.
3. Create a habitat enhancement program to address reach-level floodplain restoration priorities and restore access to key tributaries.

Market Reallocation

Employ a water market and/or a water bank to improve water supply in the Yakima River basin. Market reallocation would be conducted in two phases:

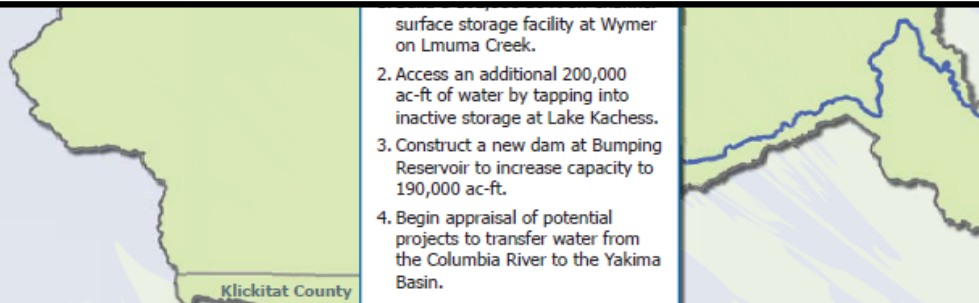
The near-term phase would continue existing water marketing and banking programs in the basin, but take additional steps to reduce barriers to water transfers.

The long-term program would focus on facilitating water transfers between irrigation districts. This would allow an irrigation district to follow land within the district and lease water rights for that land outside the district.

Structural &

1. Raise the O... feet to add capacity.
2. Modify Kitt... canals to p... savings.
3. Construct... Keechelus to Lake Kachess to reduce flows and improve habitat conditions during high flow releases below Keechelus and to provide more water storage in Lake Kachess for downstream needs.
4. Decrease power generation at Roza Dam and Chandler power plant to support outmigration of juvenile fish.
5. Make efficiency improvements to the Wapatox Canal.

Yakima Basin Integrated Plan: Early Implementation
Derek Sandison at 11:40 on Weds



1. Construct a... surface storage facility at Wymer on Lmuma Creek.
2. Access an additional 200,000 ac-ft of water by tapping into inactive storage at Lake Kachess.
3. Construct a new dam at Bumping Reservoir to increase capacity to 190,000 ac-ft.
4. Begin appraisal of potential projects to transfer water from the Columbia River to the Yakima Basin.

1. Construct pilot projects to evaluate recharging shallow aquifers via groundwater infiltration. Full scale implementation may follow.
2. Build an aquifer storage and recovery facility allowing Yakima City to withdraw water from the Naches River during high flow periods and store it underground for use during low flow periods.

MANASTASH PASSAGE

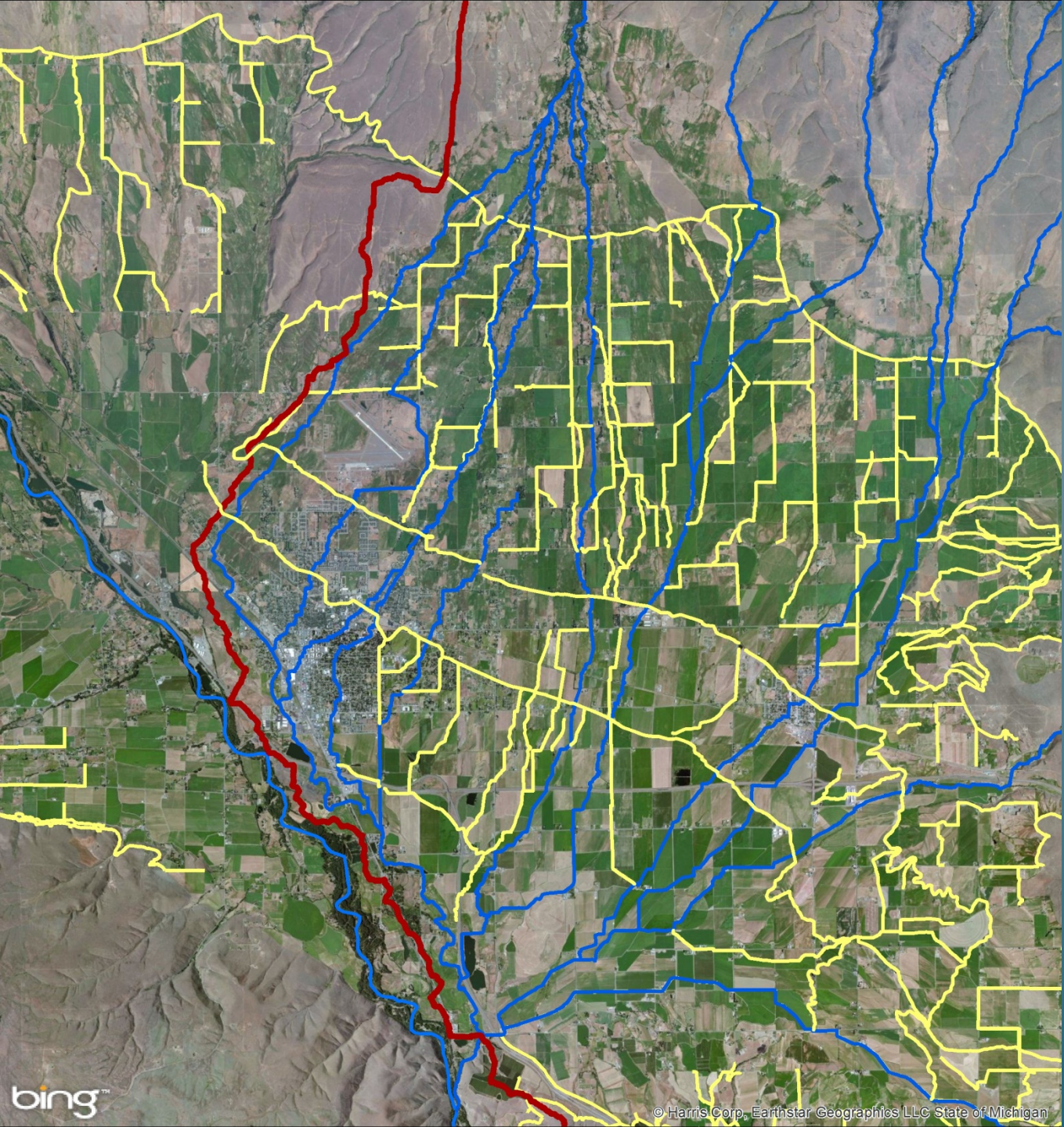
- *Decades work led by Manastash Committee & Kittitas County Conservation District*
- *Significant funding from:*
 - SRFB*
 - BPA*
 - Ecology*
 - Bureau of Reclamation*
- *Expect full passage by 2016!*



NANEUM, WILSON, CHERRY CREEK WATERSHED

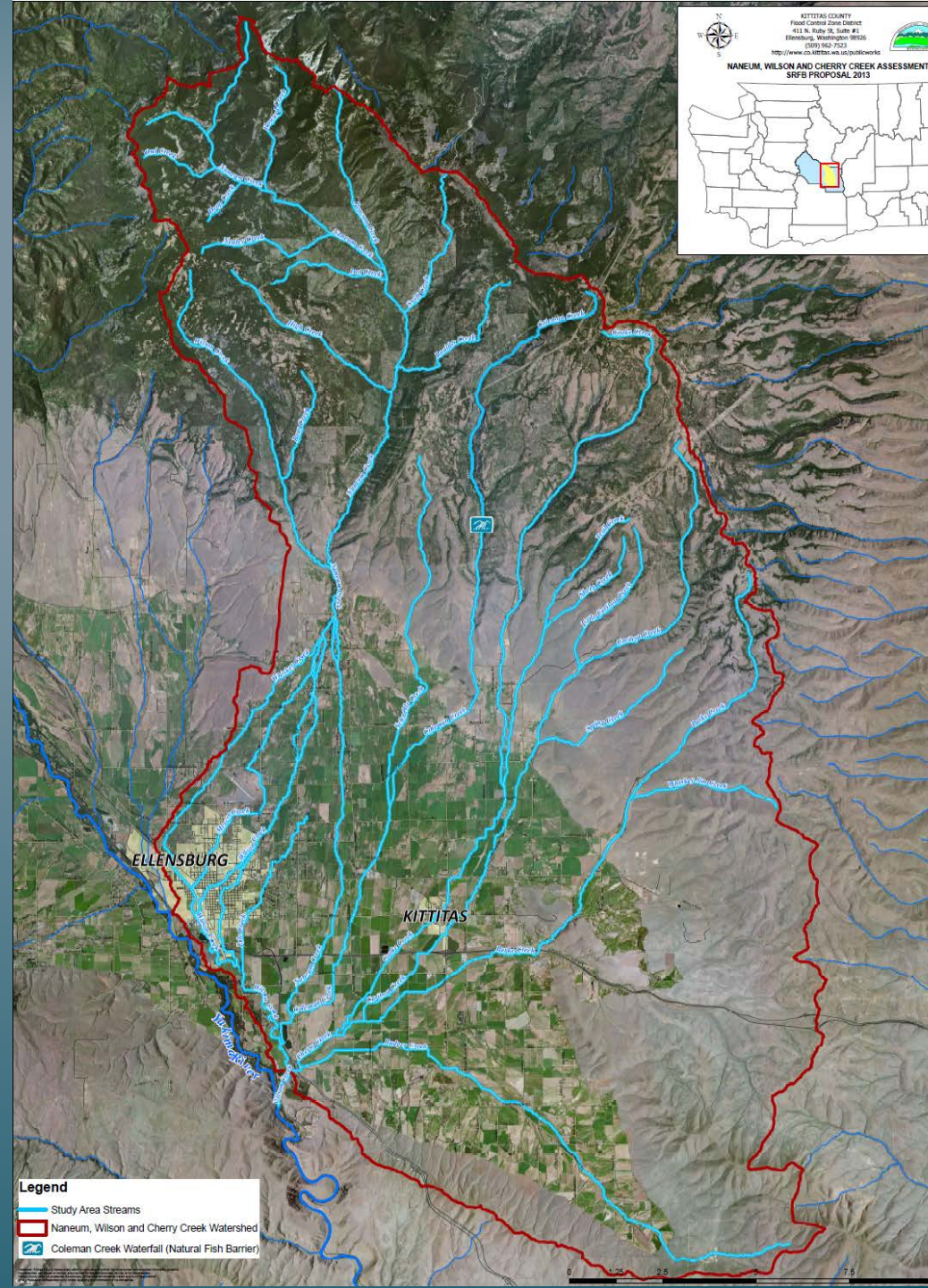


IRRIGATION CANALS & DITCHES



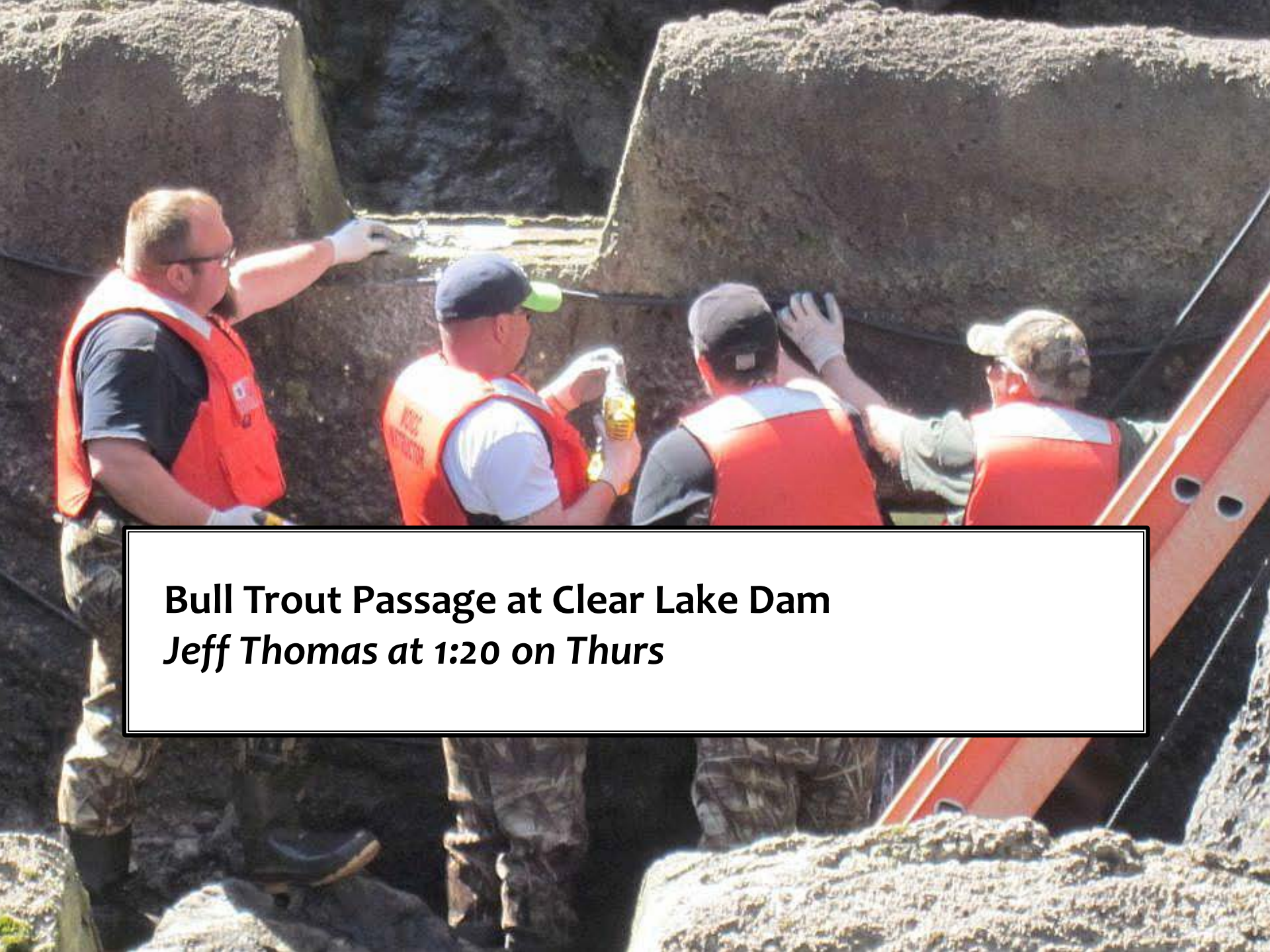
WILSON- NANEUM ASSESSMENT

- *Kittitas County as lead*
- *Integrated approach looks at fish passage, screening, flood management, infrastructure*
- *\$s from SRFB, BOR, County, City of Ellensburg*





Big Creek Fish Passage
Kelly Clayton at 4:20 on Thurs



Bull Trout Passage at Clear Lake Dam
Jeff Thomas at 1:20 on Thurs

Larval/Juvenile Lamprey Entrainment in Irrigation Diversions
Tyler Beals at 11:00 on Thurs

Passage of Radio-tagged Adult Pacific Lamprey
Ann Grote at 11:20 on Thurs



TRIBUTARY INSTREAM FLOWS



YTID-COWICHE CREEK WATER USERS ASSOCIATION

UP TO 8 CFS FLOW RESTORED
IRRIGATORS PROVIDED ALTERNATE PRESSURIZED WATER SOURCE



MANASTASH FLOW IMPROVEMENTS

OVER 15 CFS TRUSTED AND MORE TO COME...
MAJOR INVESTMENTS BY BOR AND DEPT OF ECOLOGY



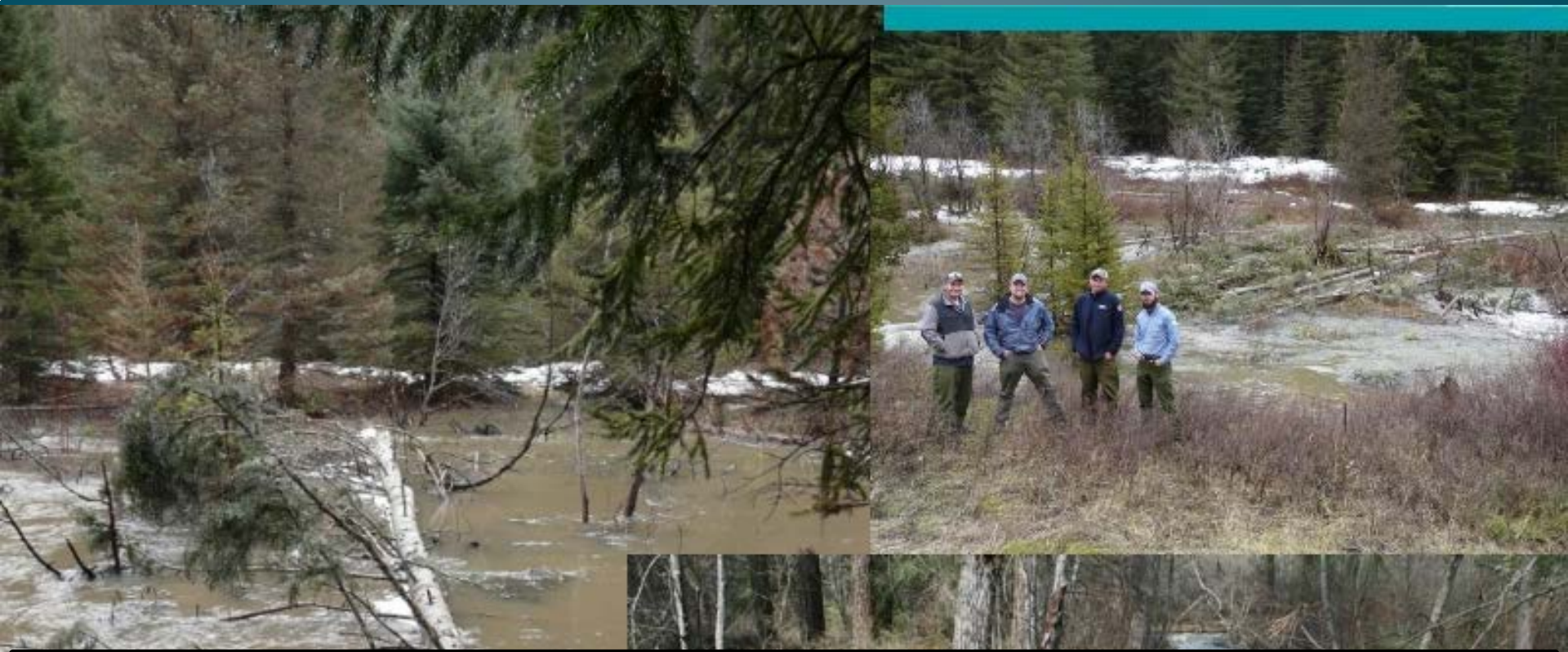


**Yakima County Water Resource System: A Countywide
Utility for Mitigating Domestic Groundwater Withdrawals**
Joel Freudenthal at 2:20 on Weds



Tributary Habitat Projects





Oak Creek Restoration: Using Wood for Floodplain Connectivity
John Marvin at 9:40 on Thurs

Yakima River Edge Habitat Project & Teanaway Pilot Restoration
Scott Nicolai at 1:40 on Weds



Beaver Reintroduction
Melissa Babik at 2:40 on Weds

A group of approximately 15-20 people are gathered on a rocky riverbank in a forest. They are dressed in outdoor attire, including jackets, hats, and vests. Some are looking towards the river, while others are talking or looking at papers. The background is a dense forest of tall evergreen trees, with a misty or foggy atmosphere. The ground is covered in rocks and some fallen logs. A text box is overlaid on the lower half of the image.

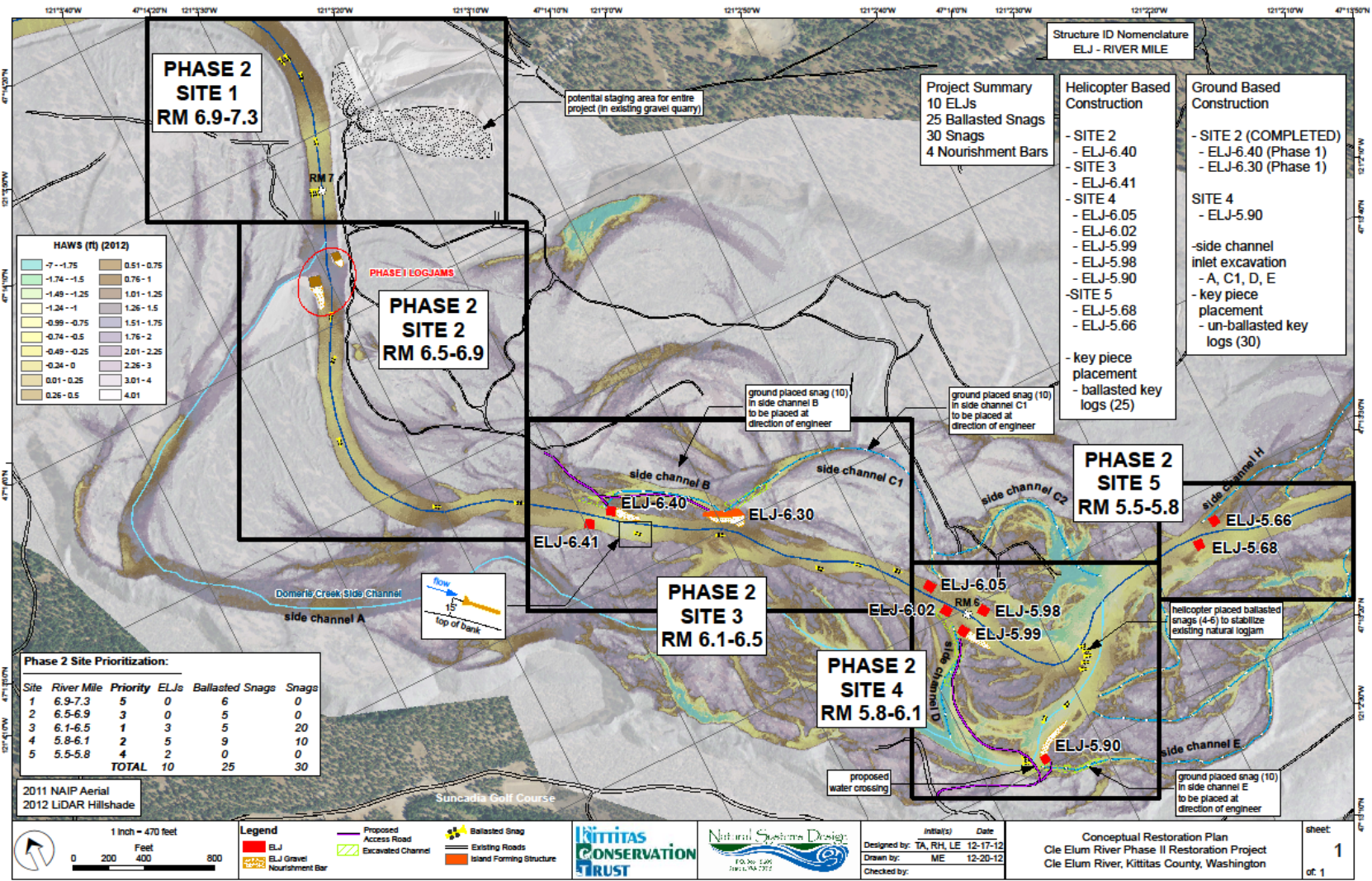
**Gold Creek Assessment: Two Year Results &
Conceptual Design**
Mitch Long at 1:40 on Thurs

Tributary Habitat Projects





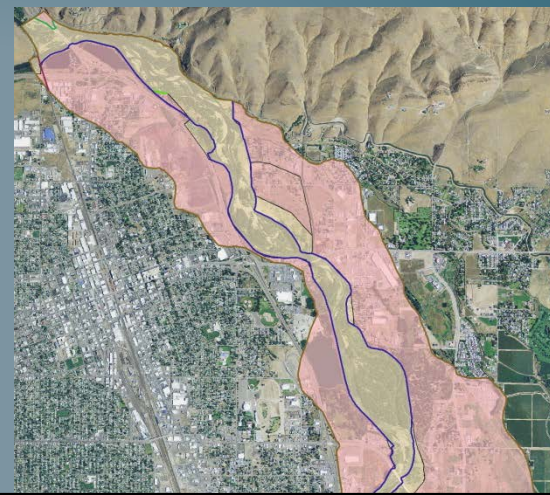
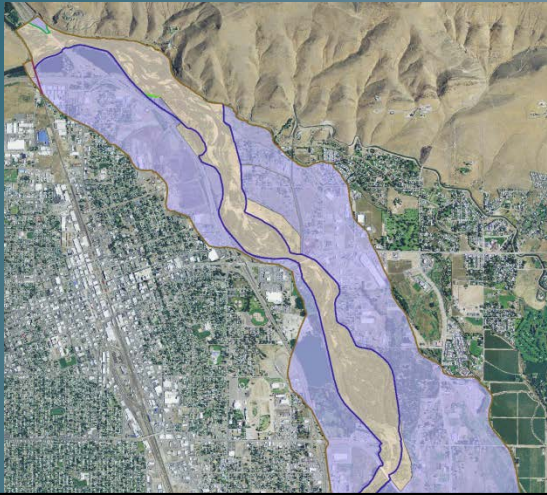




COUNTIES ACTIVELY SETTING BACK LEVEE SYSTEMS







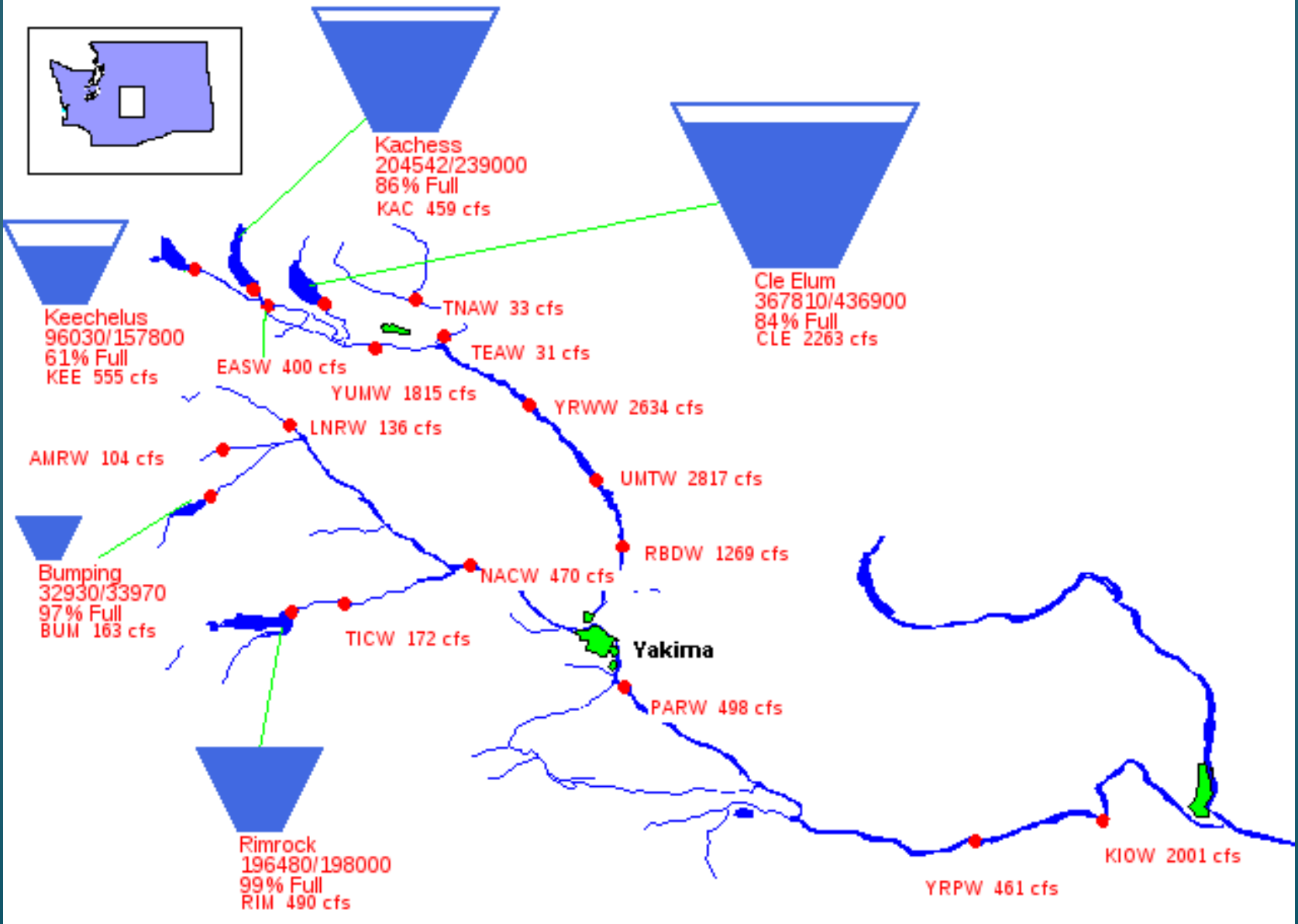
Current and Future Actions in the Gap to Gap Reach and Lower Naches

Joel Freudenthal at 2:00 on Weds

Floodplain Dates	Active (acres)	% of Historic (USGS)
2002	1,528	56
2014	1,640	60
2018	2,214	81

MAINSTEM SURVIVAL

06/15/2015



An aerial photograph of a river valley. The river flows through a deep, rocky canyon. A large steel truss bridge spans across the river. In the background, a dam is visible, and the surrounding hills are covered in dry, brownish vegetation. The sky is clear and blue.

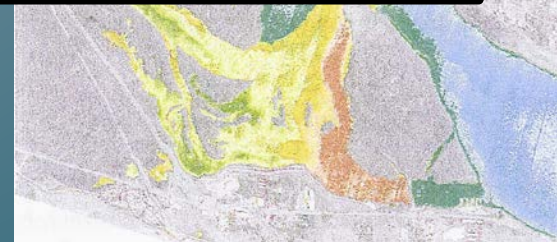
**Assessment of Streamflow Effects on Smolt
Survival Below Roza Dam**
Ian Courter at 11:00 on Weds

**Assessment of Passage Route Effects on Smolt
Survival at Roza and Prosser Dams**
Russell Perry at 11:20 on Weds

YAKIMA DELTA PROJECT



Yakima River Delta Study
Rebecca Wassel at 10:20 on Thurs





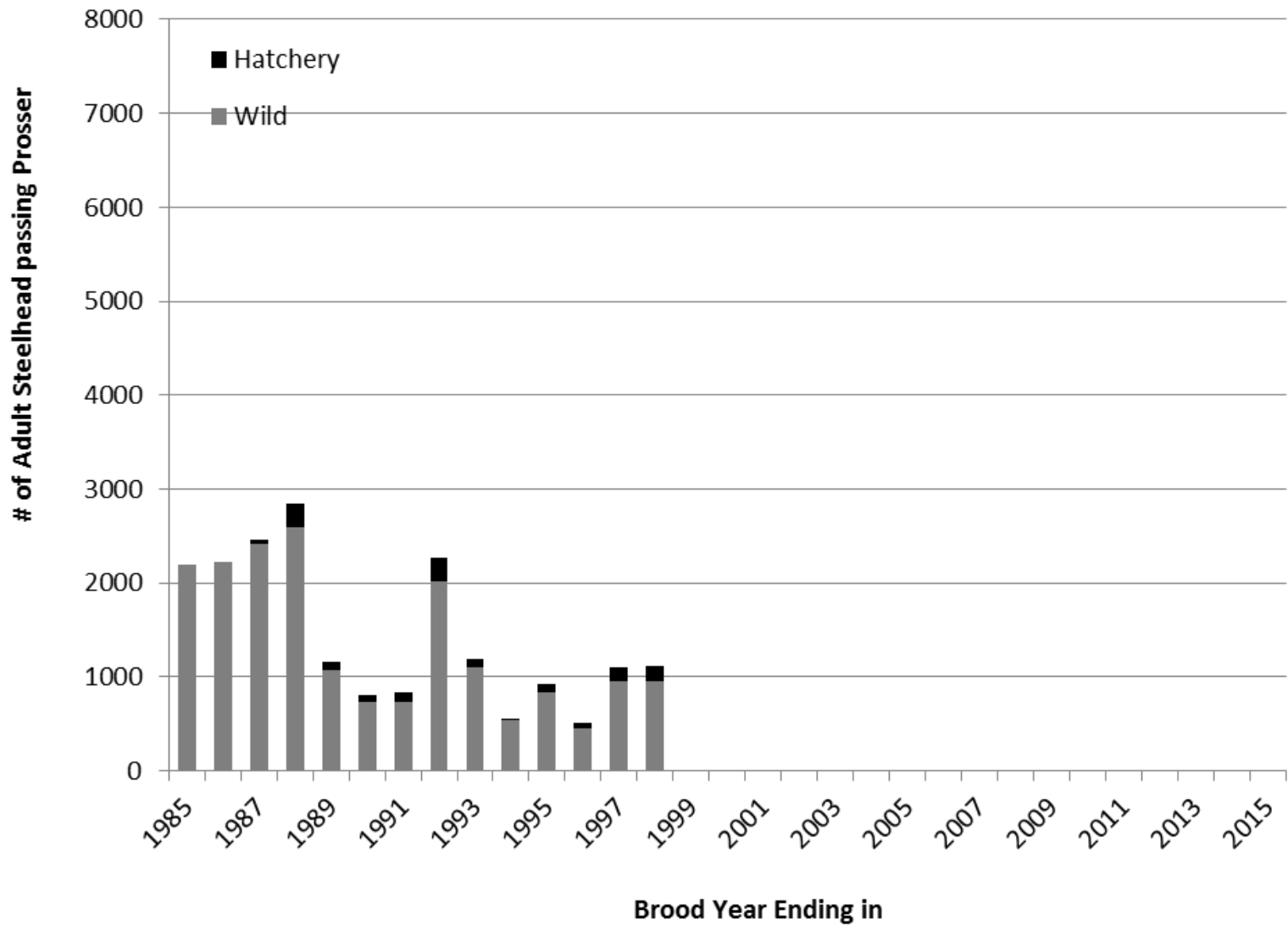
Bird and Fish Predation
Michael Porter at 11:40 on Thurs



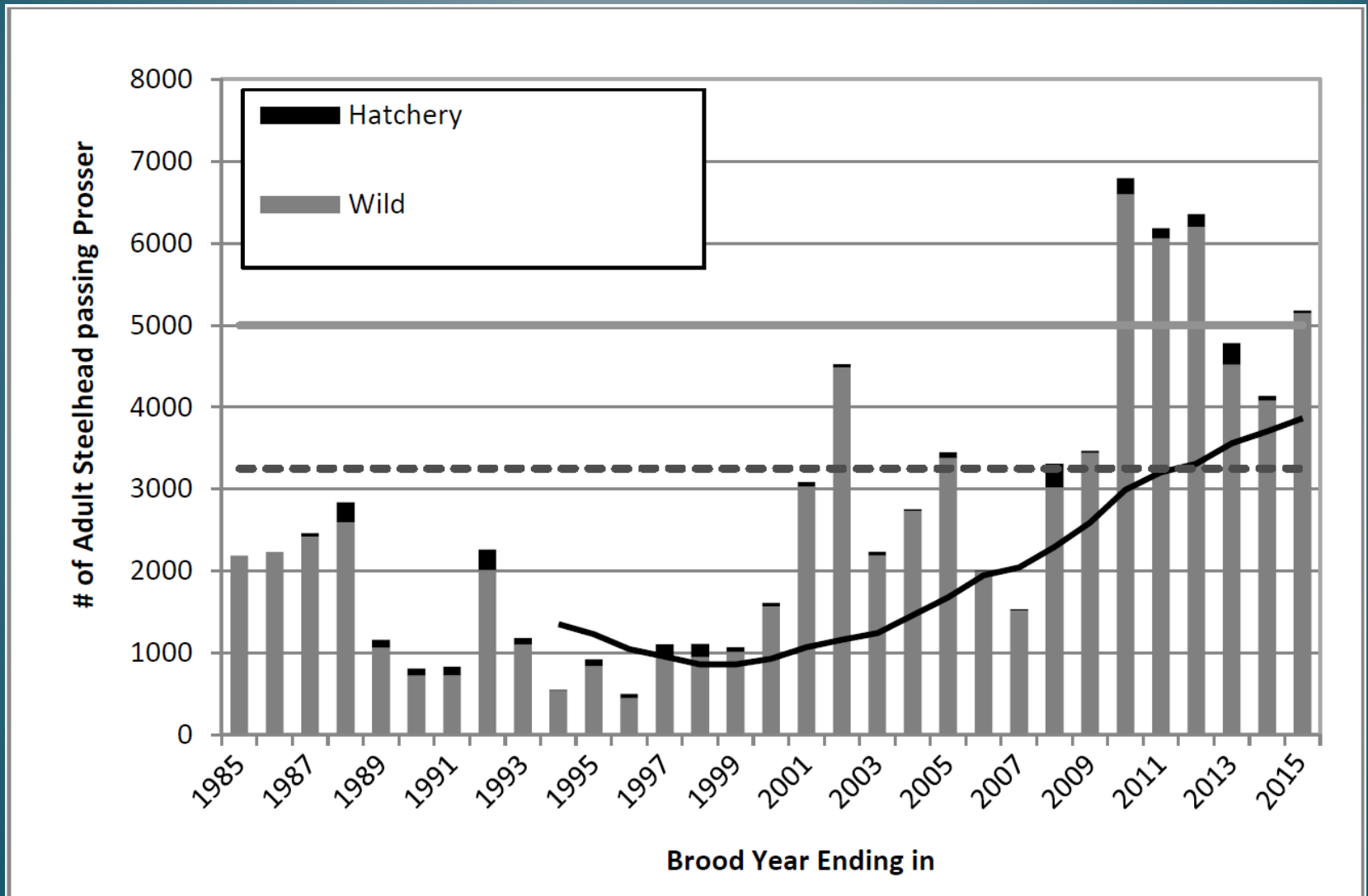
STEELHEAD VSP MONITORING



MPG-LEVEL STEELHEAD ABUNDANCE WHEN LISTED



MPG-LEVEL STEELHEAD ABUNDANCE NOW



KEYS TO SUCCESS:

		Spatial Structure / Diversity Risk			
		Very Low	Low	Moderate	High
Abundance / Productivity Risk	Very Low (<1%)	HV	HV	V	M
	Low (1-5%)	V	V	V Toppenish, Satus ²	M
	Moderate (6 – 25%)	M	M	M Toppenish, Satus ¹ Naches ²	
	High (> 25%)			Naches ¹	Upper Yakima ¹ , Upper Yakima ²

- Recovery Plan sets clear goals
- Existing YKFP infrastructure supports monitoring
- 2011 VSP Monitoring Plan identifies gaps and priorities
- Significant Funding available from BPA under FCRPS Biop
- Strong support from Yakama Nation, WDFW & NOAA
- Annual coordination among partners
- **Clear expectation of repeated analysis**

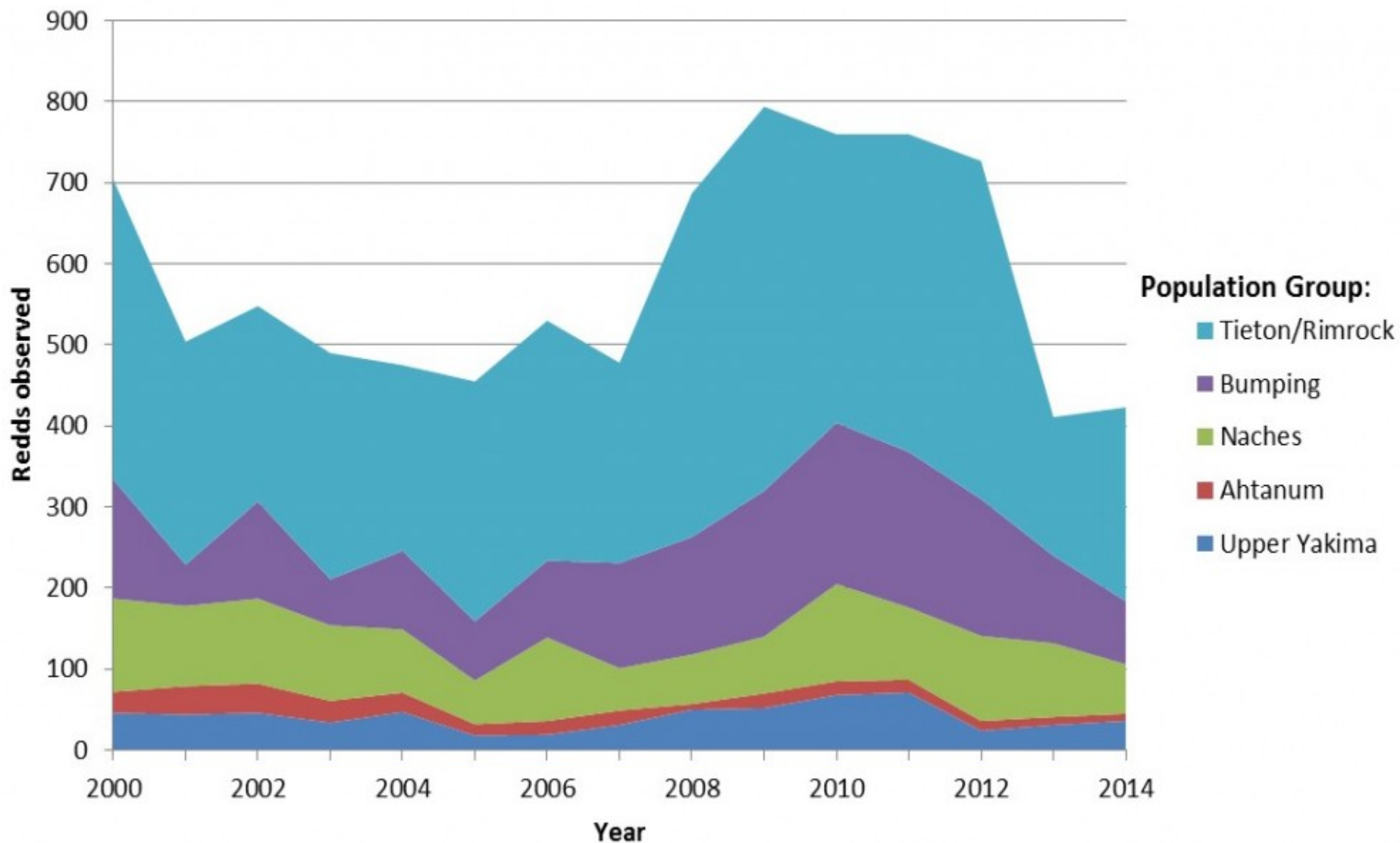


Yakima Bull Trout Action Plan

Final
September 2012



Yakima Basin Bull Trout Redd Counts





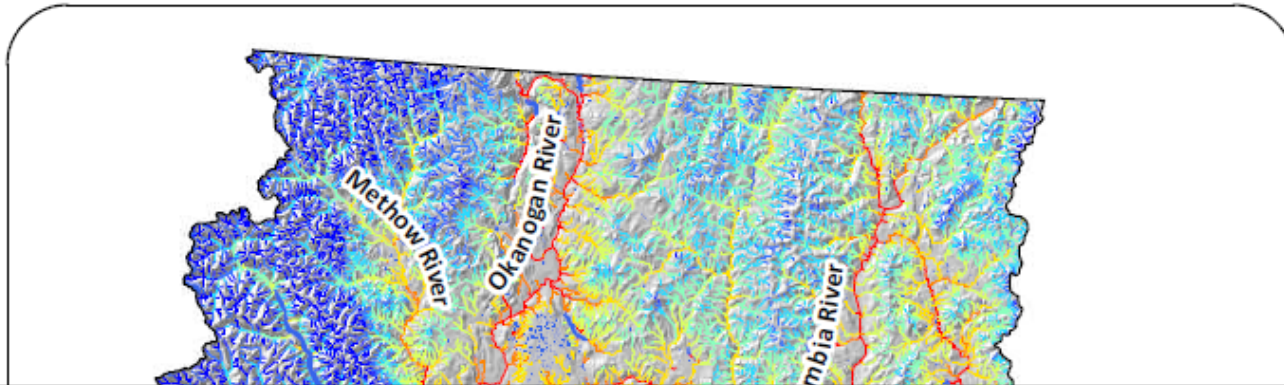
**Evaluation of Factors Affecting Bull Trout and Kokanee
Production in Kachess and Keechelus Reservoirs
*Hansen, Beauchamp and Polacek at 2:00 on Thurs***

NorWeST Stream Temperature

Modeled Mean August Stream Temperature
2080s A1B Prediction

Upper Columbia, Yakima

Hydrologic Unit Codes
170200 and 170300



**Climate Change in The Yakima Basin:
Implications for Aquatic Habitat & Water Mgmt**
Ingrid Tohver at 1:00 on Weds

