

Restoring Fish Habitat in the Yakima Basin

An overview presented by Alex Conley
Yakima Basin Fish & Wildlife Recovery Board







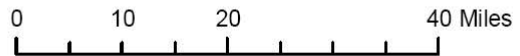
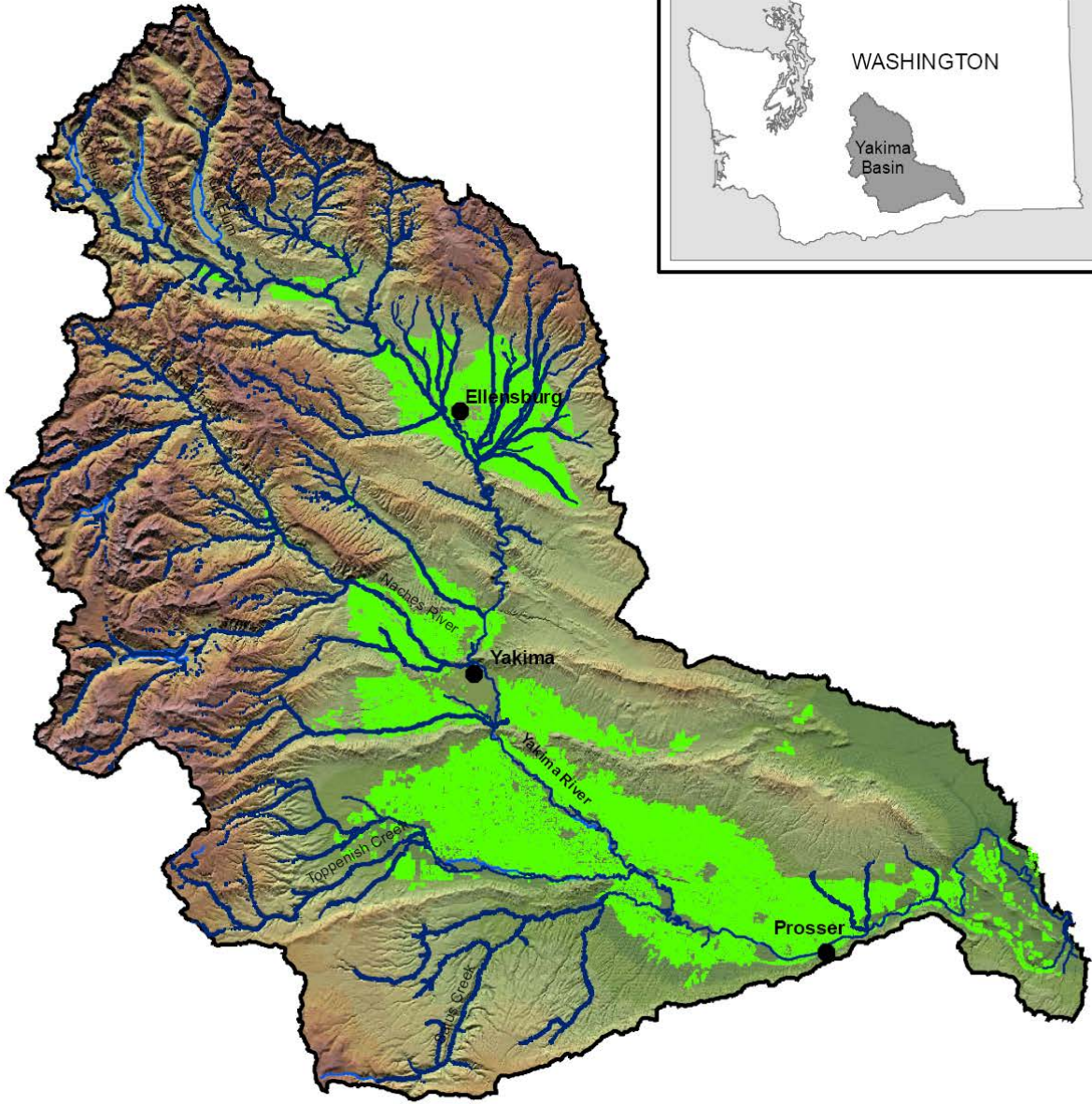






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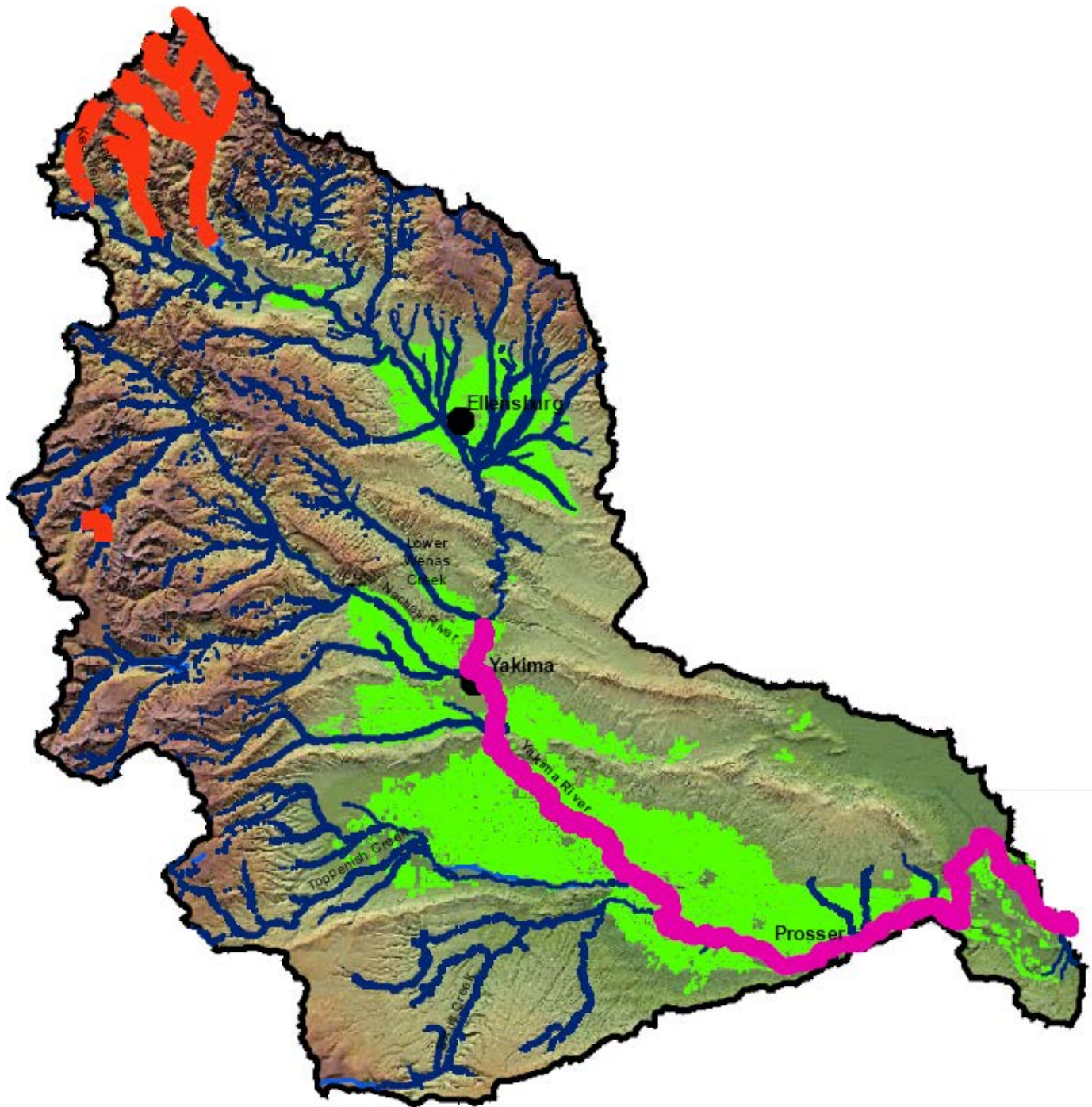
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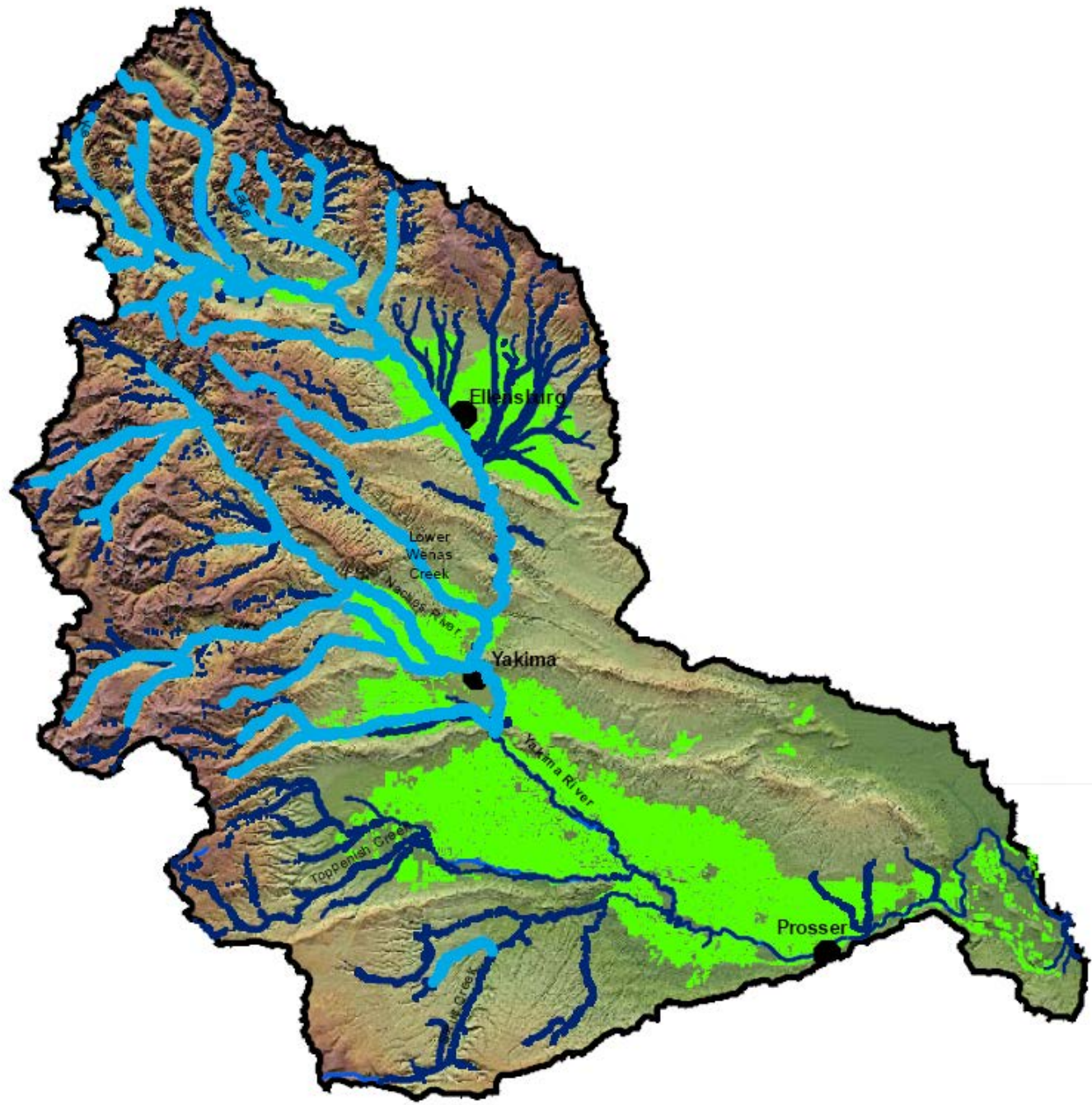




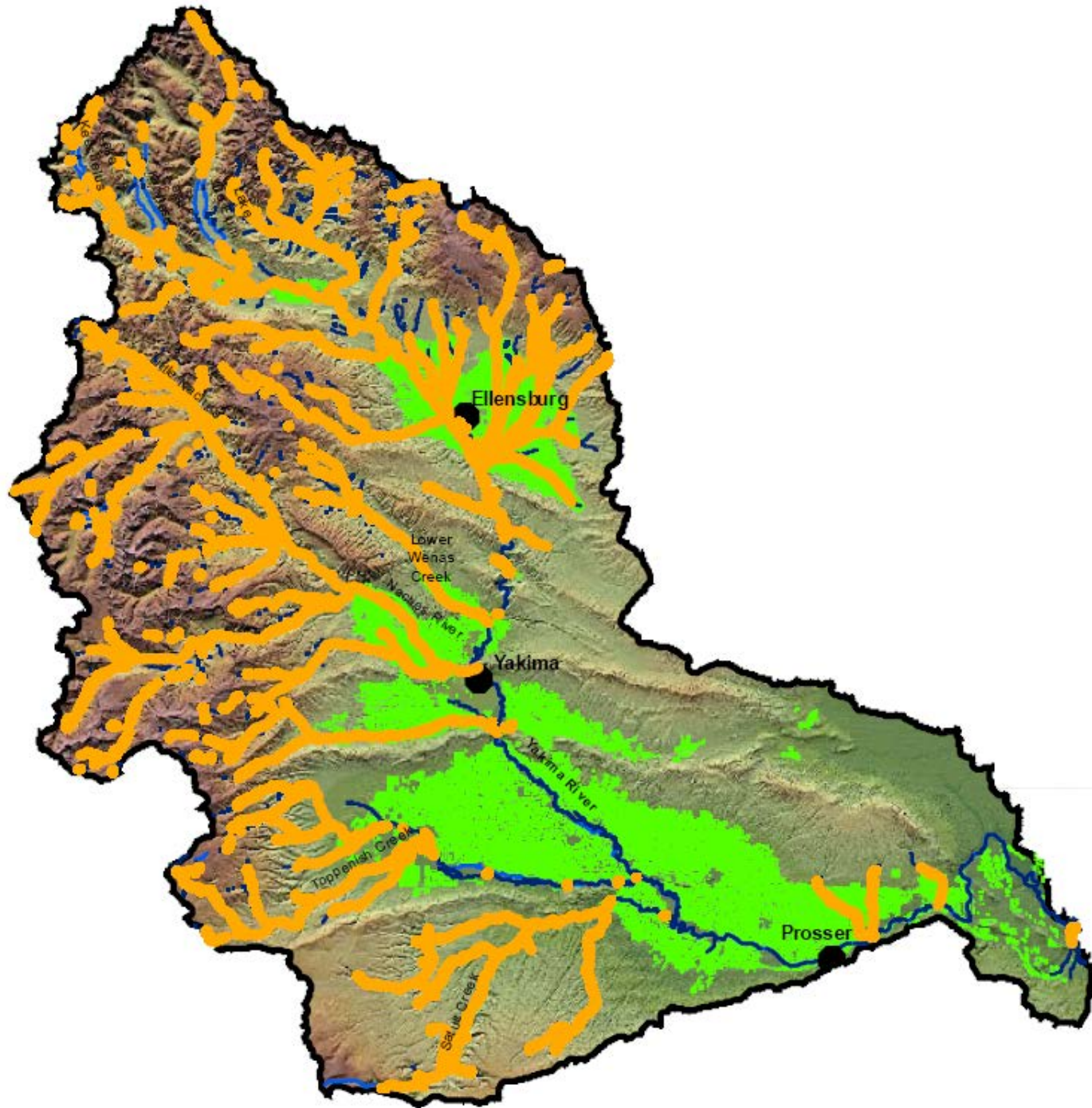








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Historic Salmon Runs

Species/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	-		-	
Coho	40,000	150,000	Extirpated and reintroduced	-	till 93	4,978	2001
Sockeye	100,000	200,000	Extirpated	-		-	
Steelhead	30,000	100,000	Wild Population	721	1990	4,525	2001
Total	408,000	1,050,000		1,910		43,975	
Bull Trout	??	??	Wild Population			2500 to 3000 adults	
Lamprey	??	??	Wild Population			0 to 87 adults	

Planning for Recovery

- 2004 Yakima Subbasin Plan for BPA
- Species-specific Master Plans
- 2005 Yakima Salmon Recovery Plan
 - 2008 Yakima Steelhead Recovery Plan
 - Yakima Bull Trout Action Plan (in progress)

Key Strategies for Recovery

- Protection of Existing Habitats
- Restoration of Key Habitats:
 - Tributary passage and habitat
 - Mainstem flow and passage conditions
 - Floodplain function
- Improvements in Out-of-Subbasin Survival
- Hatchery Supplementation of some runs

Increased Protections/Mitigation

- NOAA/USFWS consultations
- WDFW, DOE & local permitting processes
- Changes to BOR Yakima Project Operations
- Changes in public & private forest lands management
- Incorporation of habitat goals into land use programs
- Incorporation of habitat goals into infrastructure projects *(Weds 1 to 3 pm panel on WSDOT I-90 project)*

Directed Funding for Recovery

The Big Three:

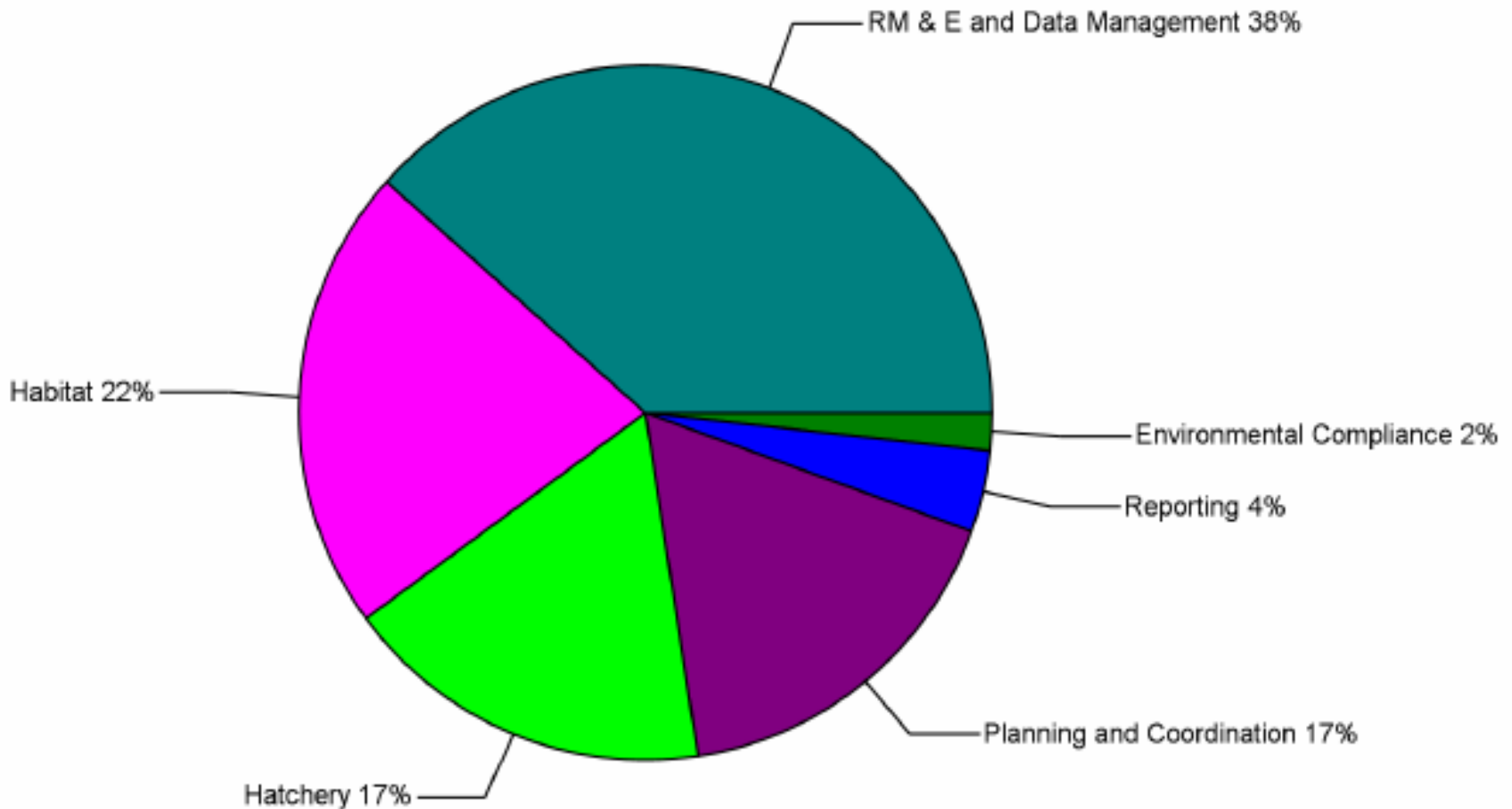
- BPA Fish & Wildlife Program
- Reclamation's YRBWEP Program
- SRFB (NOAA PCSRF & State)

Additional Sources:

- USFWS, National Fish & Wildlife Foundation, Private Foundations, USDA, and many more

BPA Fish & Wildlife Program

- Average of \$13 million/yr, Fy 2005-2009

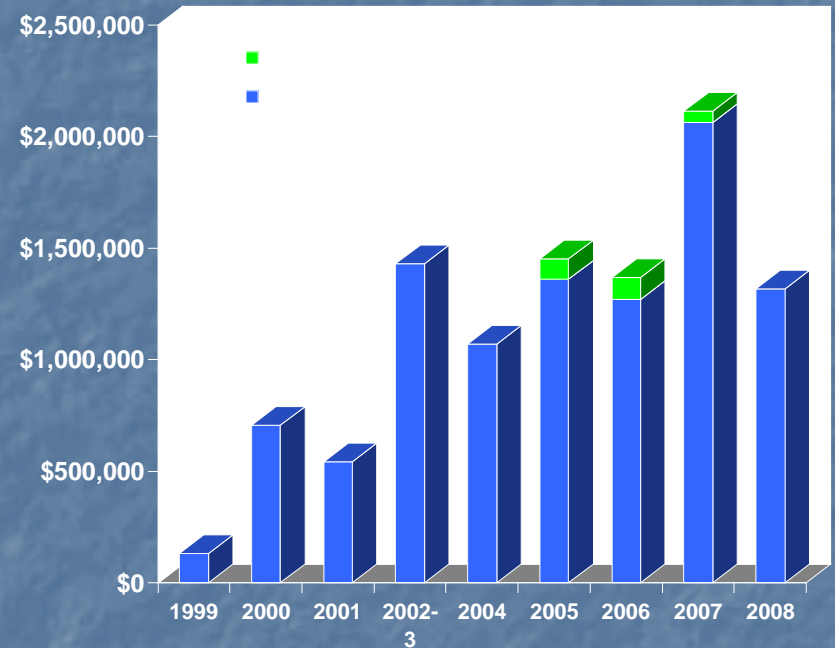


YRBWEP

- Bureau of Reclamation program to fund:
 - Floodplain land acquisition & restoration
(almost 2000 acres to date)
 - Irrigation system improvements & water rights purchases that free up water for instream use
(25 kaf & Wapatox right to date; another 50+ kaf in progress)
 - Support of key tributary efforts
(Toppenish, Coiwche, Taneum Creeks, Cle Elum passage)
- ~8.5 million annual budget

Salmon Recovery Funding Board

- \$s from PCSRF & State
- ~1.4 million/yr
- 54 projects, 1999-2008:
 - 20 Trib passage/screen
 - 14 Property acquisition
 - 20 Riparian/instream



Habitat Funding Summary

<u>Program</u>	<u>Amount</u>
BPA (Habitat only)	\$ 4,000,000
YRBWEP	\$ 8,500,000
SRFB	\$ 1,500,000
Other (at 20% of total)	\$ 2,800,000
ANNUAL TOTAL	\$ 16,800,000

Compare \$17 million to:

New West Valley High School	38 million
10 new wind turbines	29 million
1.5 miles of I-90 improvement	40 million
Yakima County Road Dept annual budget	33 million
Powerhouse Bridge across Naches	7 million

Where do the \$s go?

Tribal Habitat Programs

- Satus, Toppenish & Ahtanum watersheds
 - Long history of upland and instream projects
- Reservation Wetlands/Riparian Restoration
 - Over 21,000 acres protected
 - Water right acquisition from 1,500 acres
 - Ongoing restoration on protected lands

Tom Elliot, Yakama Nation, on Toppenish Creek/Marion Drain groundwater interactions

- YKFP Off-reservation Habitat Program
 - 1,300 acres protected, tributary passage & habitat projects

John Marvin, Yakama Nation, YKFP Habitat Projects, 3:40 Thurs

Scott Nicolai, Yakama Nation, Large Wood in Taneum Creek, 10:40 Thurs



Local Governments

- Conservation Districts
 - *YTAHP panel, 1 to 2:20 pm Thurs*
 - *Rachel Little & Denise Buck on Conservation District Environmental Education Programs, 3:20 on Thurs*
- Irrigation Districts
- County and City Governments
 - *Joel Freudenthal on Yakima County surface water programs, 11:40 Thurs*



Union Gap

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Pointer 46°34'15.02" N 120°27'24.86" W elev 932.0

Streaming 100%

Eye alt 15010.0

Non-profits

- Mid-Columbia RFEG
- Kittitas Conservation Trust
 - Holds easements/properties in upper basin
 - Projects on Upper Valley tributaries

David Gerth, Kittitas Conservation Trust on Swauk Creek projects, 4 pm Weds

Cle Elum River Restoration Phase I Roslyn, WA

Lake Cle Elum

Primary Project Reach. main channel length = 1832 m
 Primary Project side channel restoration = 7382 m

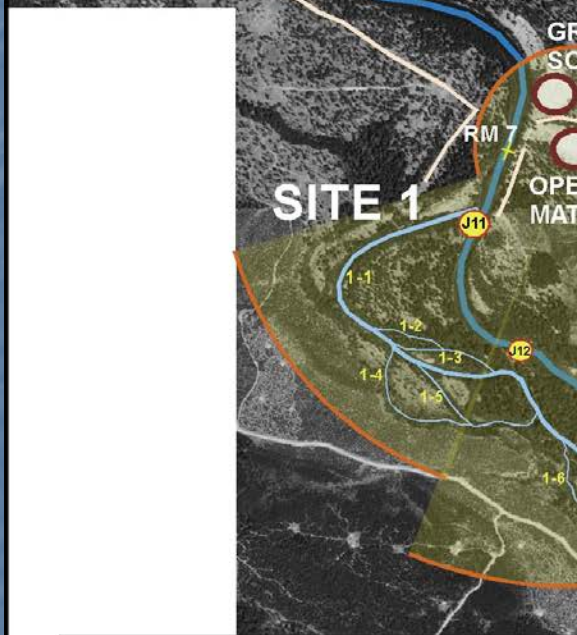
PRIMARY PROJECT AREA			
Side Channel	meters	Side Channel	meters
1-1	2125	2-1	620
1-2	254	2-2	988
1-3	373	2-3	467
1-4	473	2-4	137
1-5	517	2-5	100
1-6	509	2-6	473
1-7	375	2-7	488
1-8	96	Total	2643
Total	4739		

TOTAL RESTORATION = 7382

Secondary Project Reach. main channel length = 442 m
 Secondary Project side channel restoration = 1942 m

SECONDARY PROJECT AREA			
Side Channel	meters	Side Channel	meters
3-1	409	4-1	603
3-2	649	Total	603
3-3	146		
3-4	135		
Total	1339		

TOTAL RESTORATION = 1942



GRAVEL SOURCE
 OPERATIONS & MATERIAL STAGING

SITE 1

SITE 2

SITE 3

SITE 4

0 500 meters

- Primary engineered logjam location
- Secondary engineered logjam location

Approximate helicopter flight radius from staging area to primary project work areas

Ground access roads

USGS orthophotos: July 25, 1998

Tim Abbe
 Herrera Environmental Consultants
 tabbe@herrerainc.com
 David Gerth
 Kittitas Conservation Trust
 kct@inlandnet.com

FILE: Cle Elum 2.CNV

Yakima Trib Access & Habitat Project

- Consortium of CDs, YN, WDFW, Nonprofits
- Administered by the RC & D
- Accomplishments, 2003 to 2008
 - Screened 87 cfs of irrigation water
 - Put 4.5 cfs to instream use
 - Opened up 45 miles of blocked habitat
 - Planted over 8,000 riparian plants
 - Installed 26 rock wiers and 66 wood structures

YTAHP panel, 1 to 2:20 pm Thurs

YTHAP Cowiche



BEFORE: Irrigation dam blocks fish passage



AFTER: Rock weirs allow full fish passage

Water Acquisitions

- Non-profit water trusts:
 - *Jason McCormick of Washington Water Trust, Role of winter flow acquisitions, 11 am Thurs*
 - *Lisa Pelly of Washington Rivers Conservancy, Manastash Creek Flow Restoration, 2:20 Thurs*
- YRBWEP & Dept of Ecology Programs
- Columbia Basin Water Transaction Program

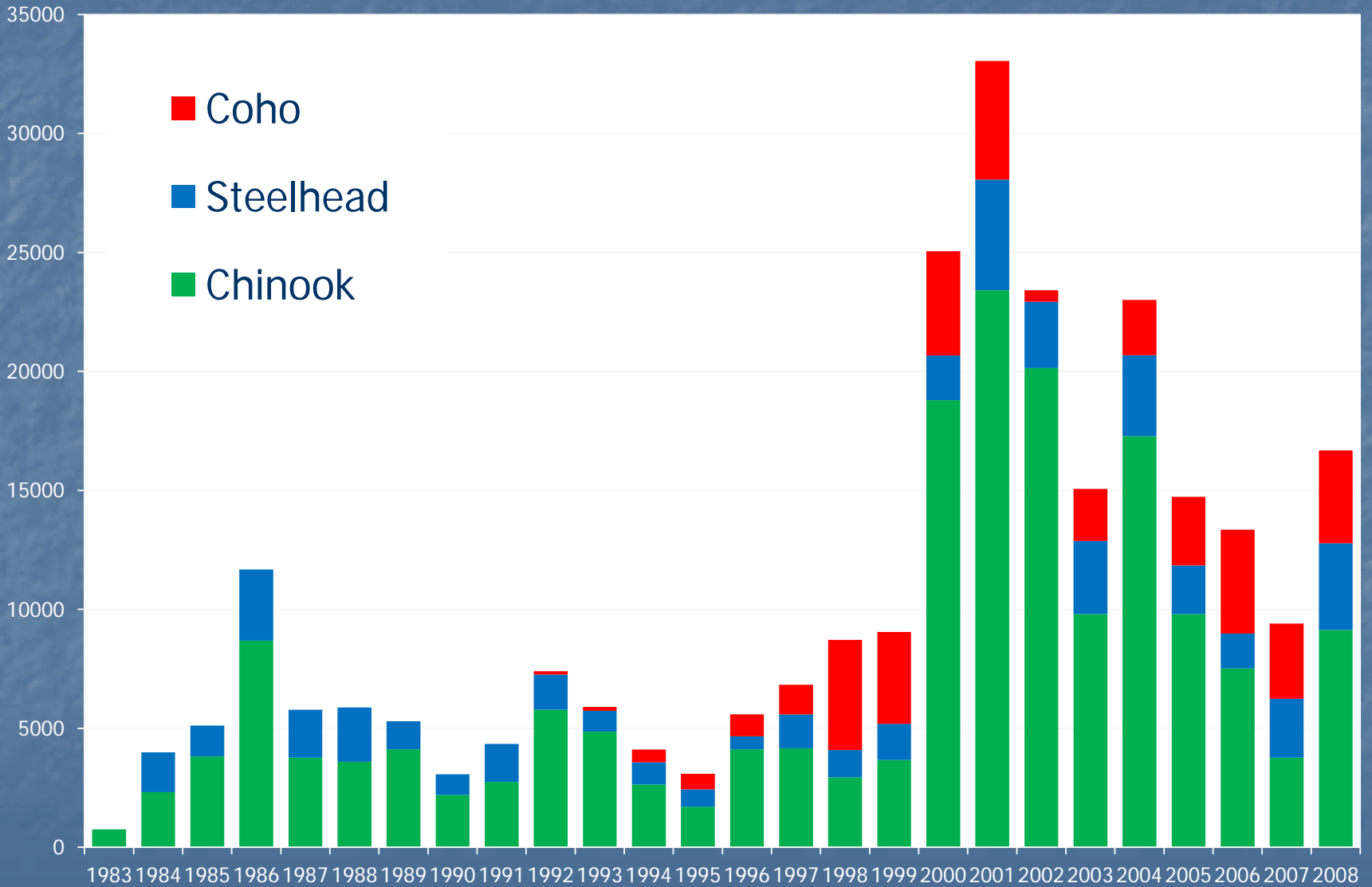
Land Trusts

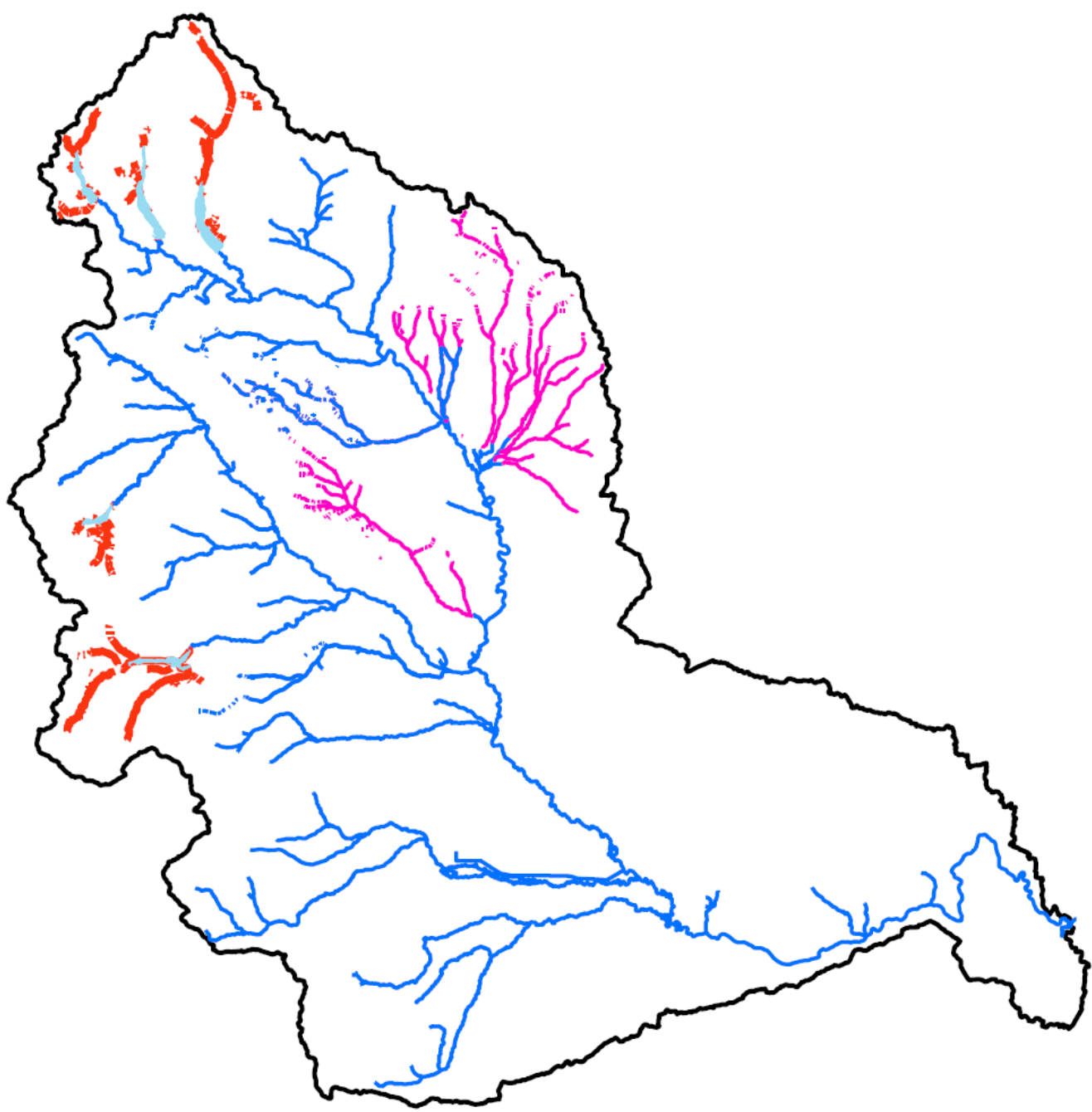
- Cascade Land Conservancy (*Jill Arango, on Wilson Creek work, 2:40 on Thurs*)
- Tapteal Greenway Association in the Tri-Cities
- Cowiche Canyon Conservancy



Where is it all getting us?

Prosser Adult Counts



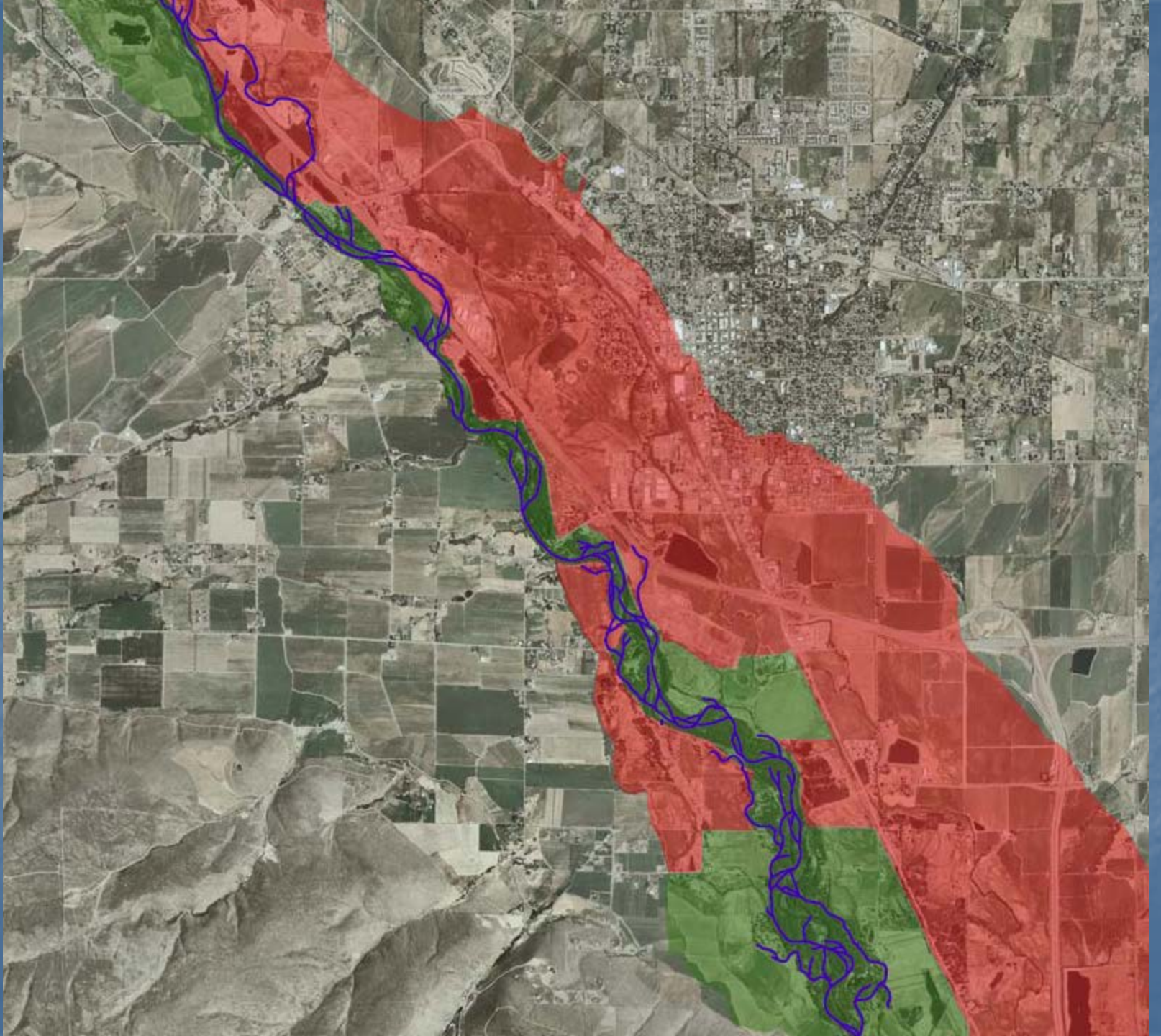


Future Challenges

Expanding Floodplain Programs

- Need to coordinate complex acquisition and restoration proposals at a reach level
- Need for significant funding
- High risk of missed opportunities
- Development of future scenarios for floodplains with local policy makers

Panel on Floodplain management, 11 am Weds



Water Supply/Habitat Interactions

- Adjustments to Bureau operations (Roza, Tieton winter flows, etc) and ESA coverage
- Passage at Storage Dams
- Addressing water supply issues?
 - Irrigation system improvements
 - New storage/water transfer?
 - Groundwater management

John Vaccaro, USGS on climate change impacts on water supply and agriculture, 8:20 Thurs

Matt Ely, USGS on groundwater in the Yakima Basin, 9:20 Thurs

Tom Ring, Yakama Nation on Black Rock, 10:20 Thurs

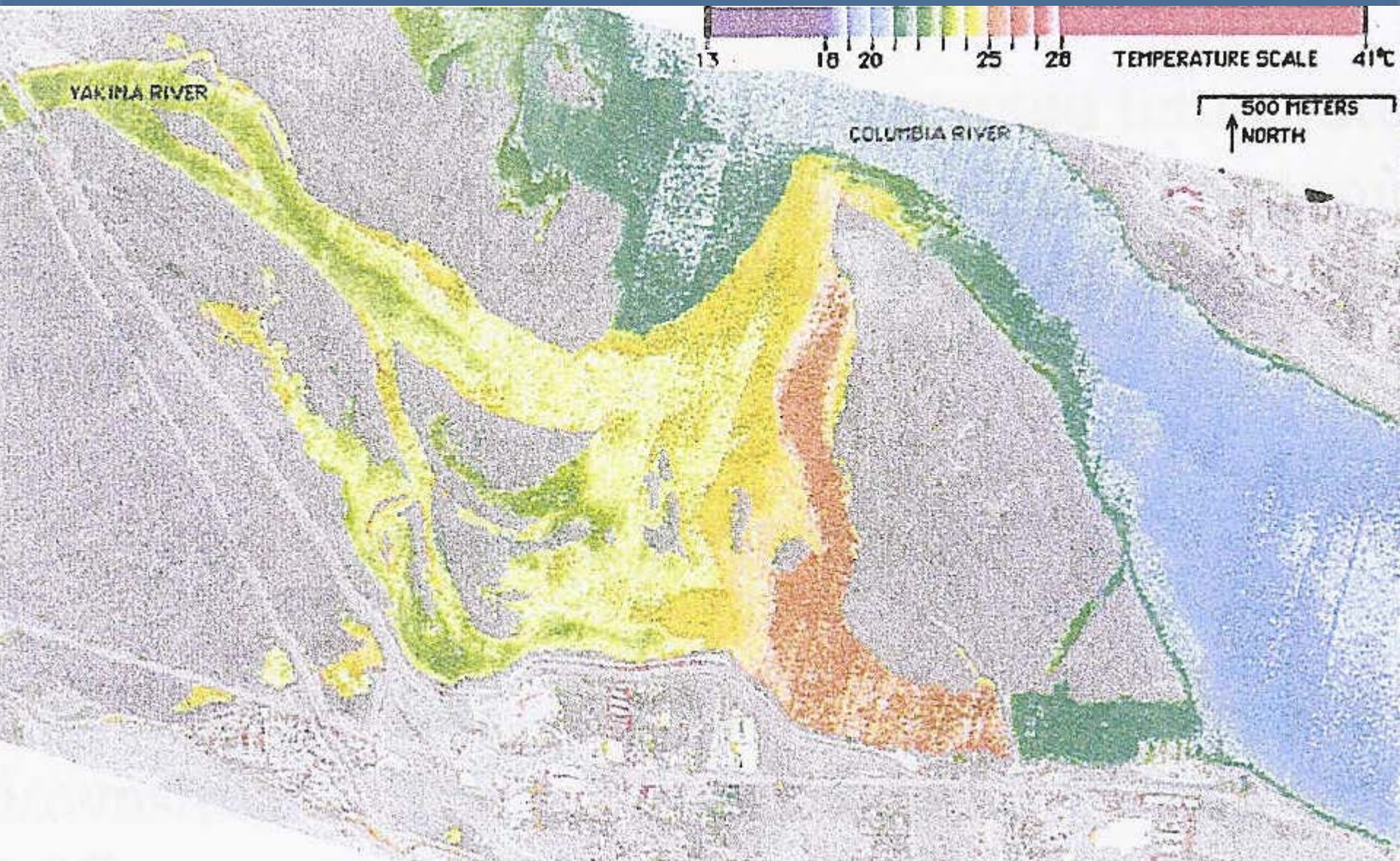


Mainstem Passage & Flows

- Quantify & prioritize flow needs for:
 - Smolt outmigration
 - Upstream passage of adults
 - Juvenile rearing in key reaches
- Address physical impacts of bypasses, etc

Lower Yakima Water Quality

- TMDL for sediment & DDT a success story
- Upcoming Temperature/Nutrient TMDL
- Passage constraint for summer-run fish
 - *Scott Ladd, Yakama Nation, Water Quality in Lower Yakima Tribs/Drains, 11:20 Thurs*



Bull Trout Recovery

- Identifying and implementing key actions
- Addressing habitat issues in and above the storage dams
- Addressing role of connectivity and supplementation in Bull Trout recovery

Linking Fish Science & Habitat

- Interactions between anadromous and resident forms of *O. mykiss*
- Relationship between mainstem flow, temperature, floodplain conditions & fish production
- Rates of re-colonization of unused habitat
- Identification of role of key habitat factors in limiting fish production

Tanya Lamb, CWU on nutrient limitation in Swauk Creek, 4:20 Weds

And Wildlife...

- Anthony Novack, WDFW
Elk-agriculture interactions, 2:40 Weds
- Stan Sovern, USFS
Spotted owl demography, 3:20 Weds
- Kevin White, WSU
Cougar prey use, 3:40 Weds