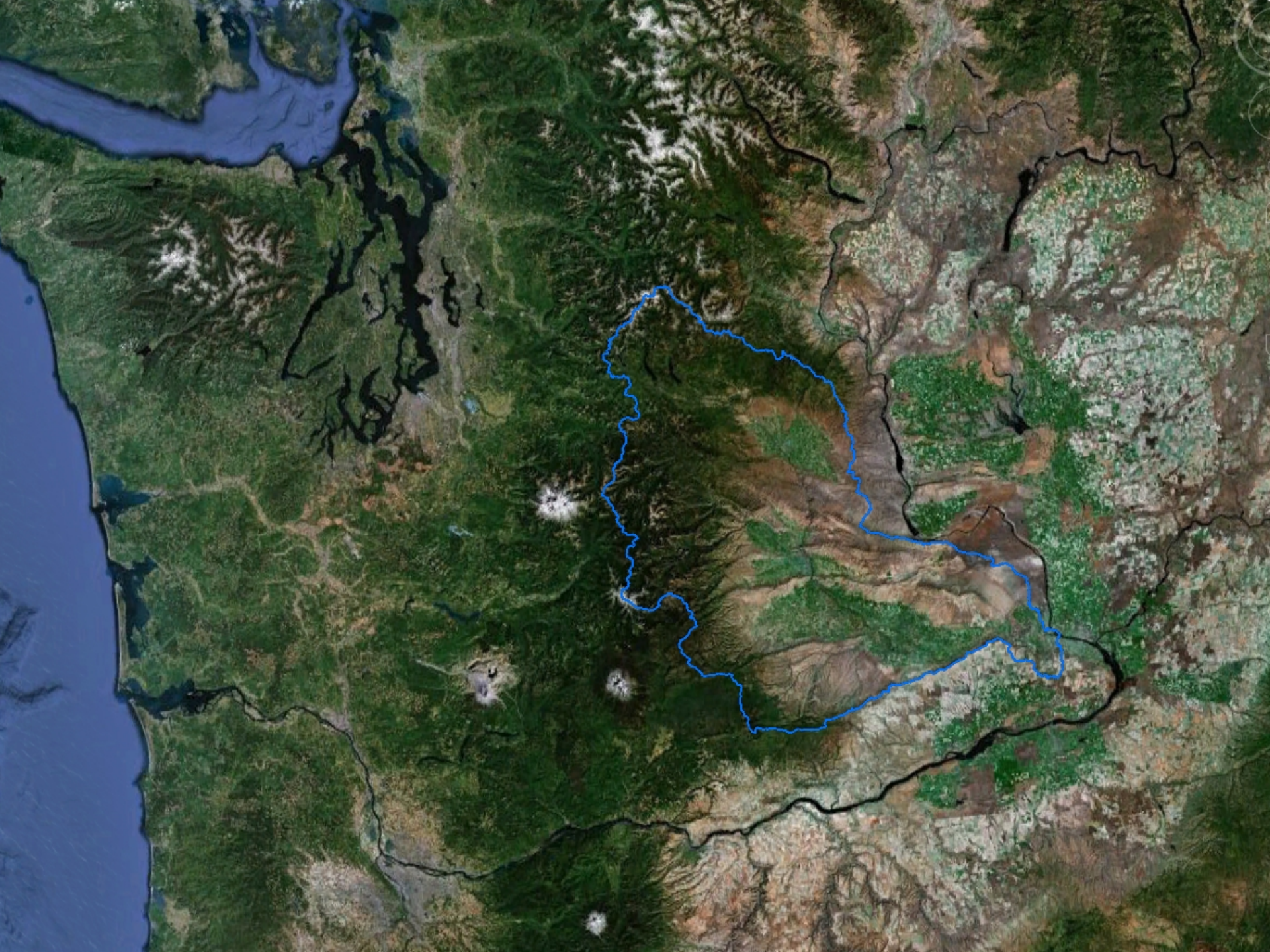
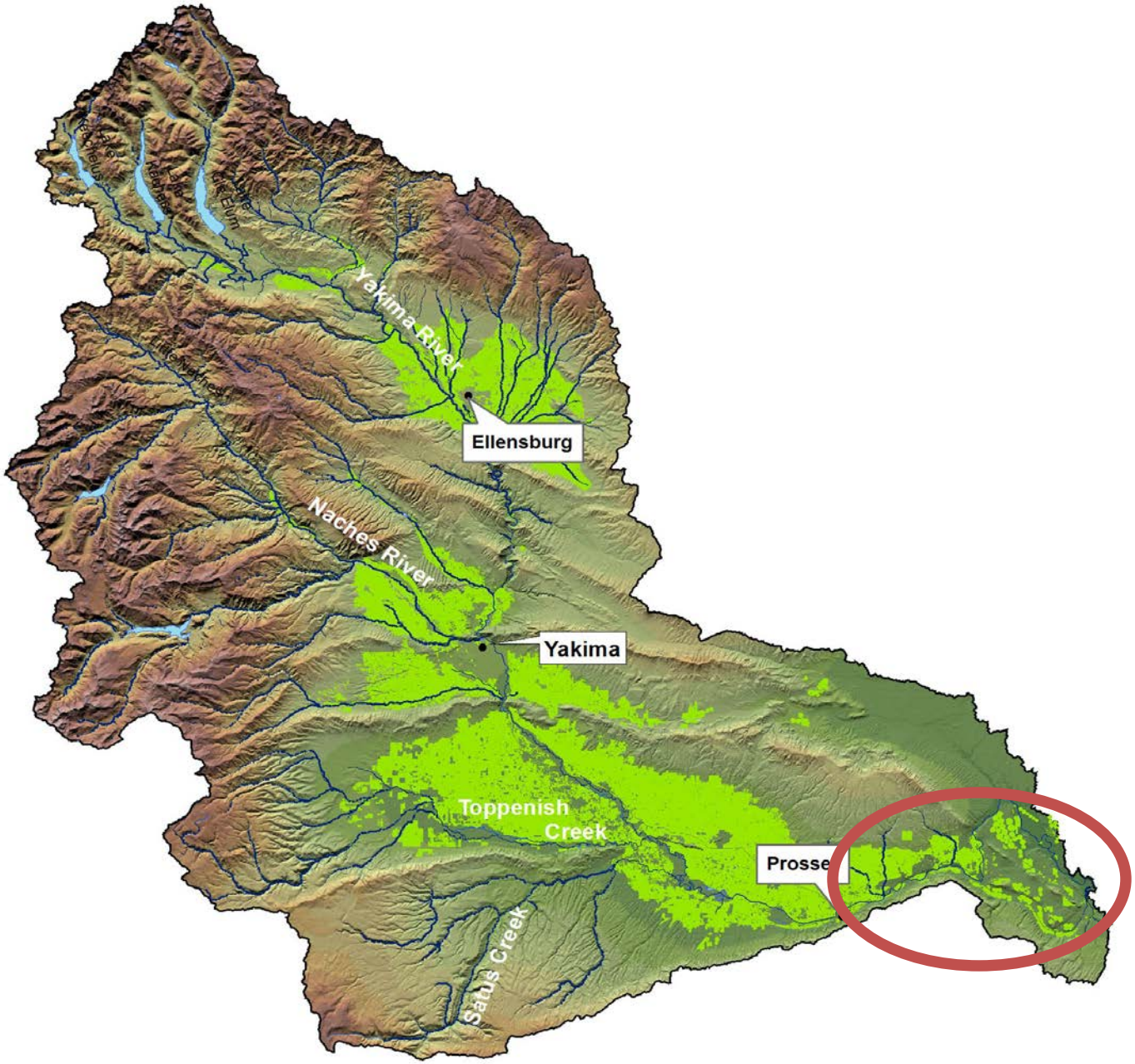
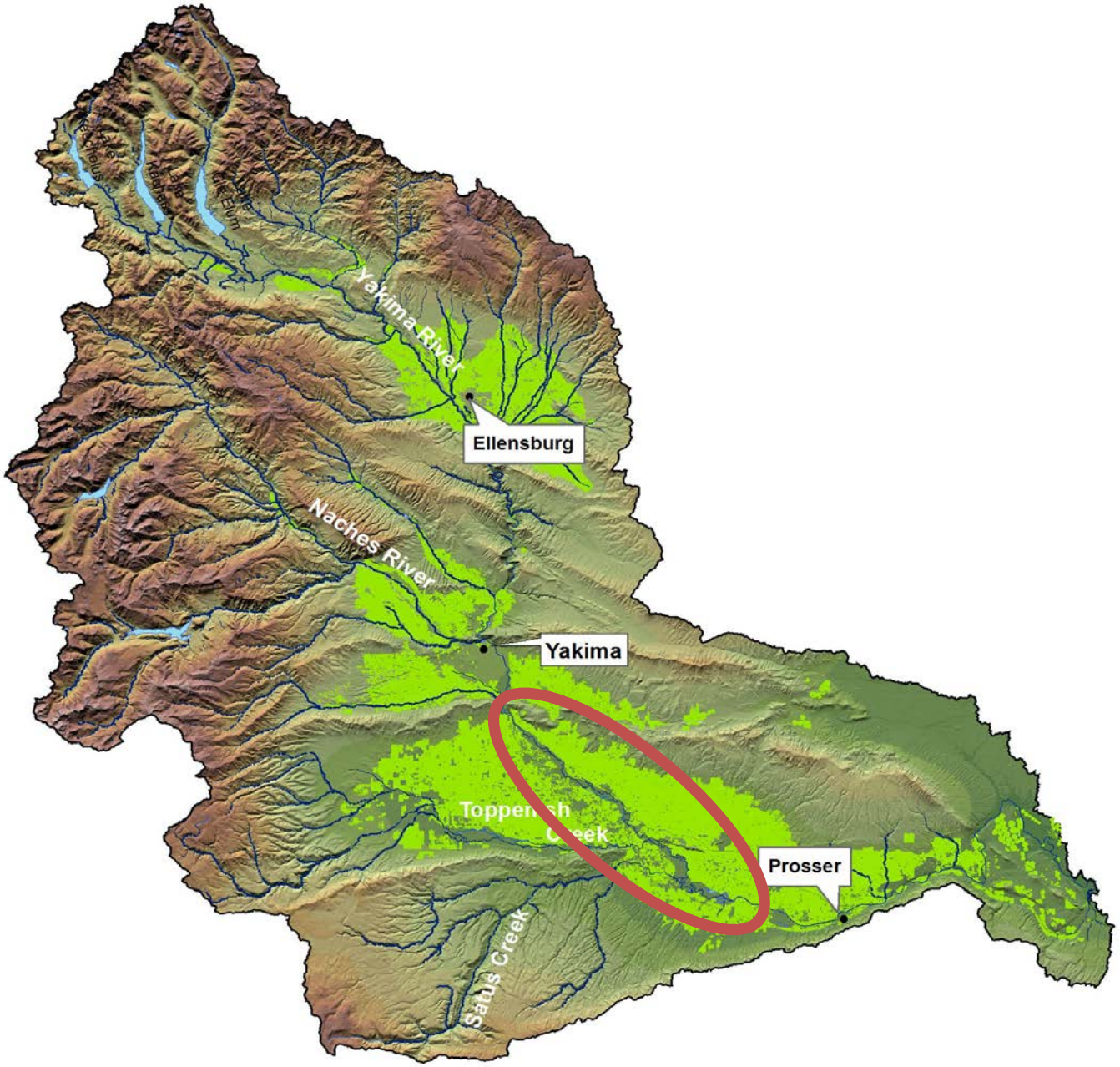
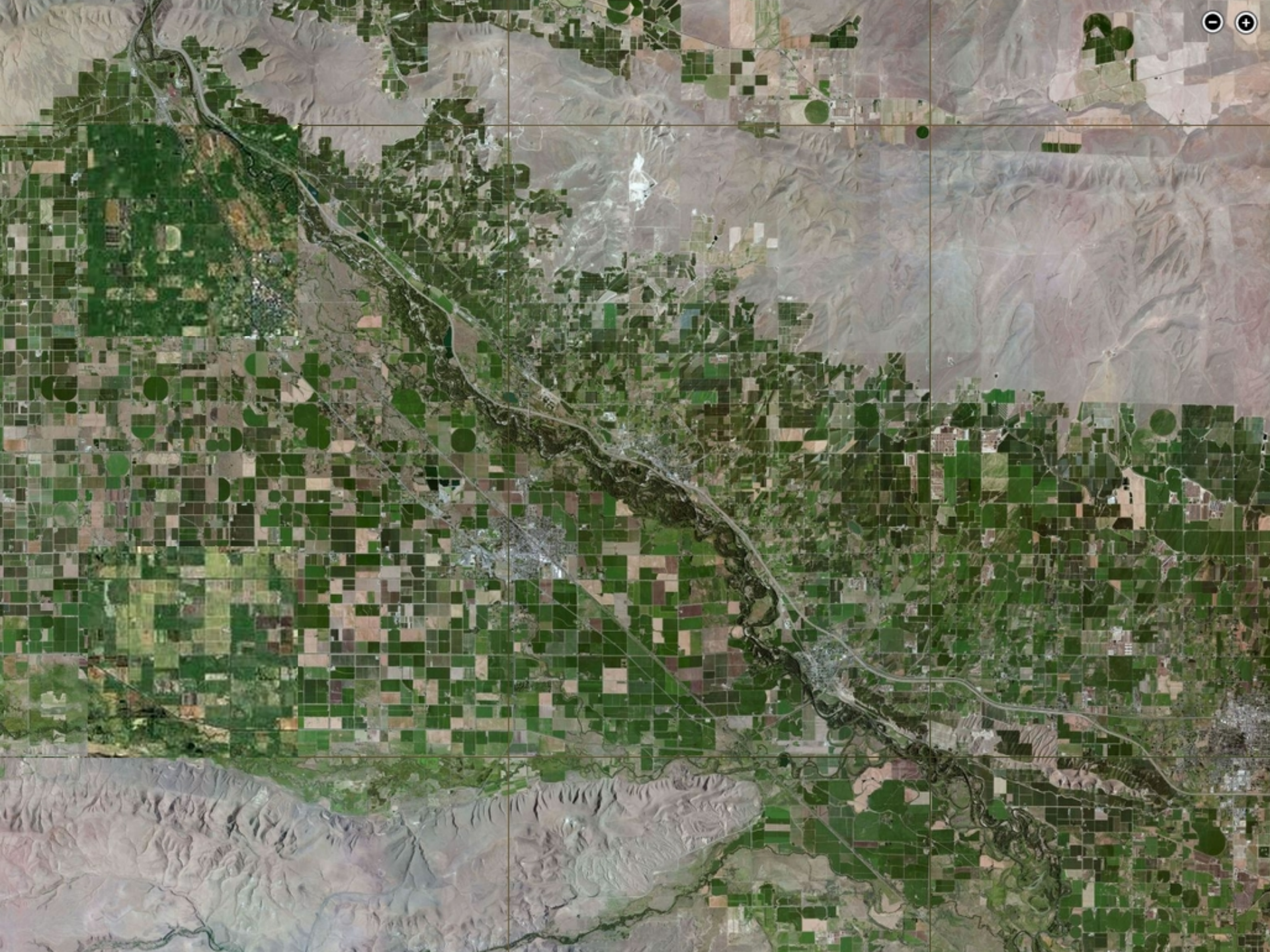



Yakima River
Ellensburg
Naches River
Yakima
Toppenish
Creek
Prosse
Satus Creek


Yakima River
Ellensburg
Naches River
Yakima
Prosser
Satus Creek




Donald Wapato Rd
Donald Wapato Rd
Donald Wapato Rd

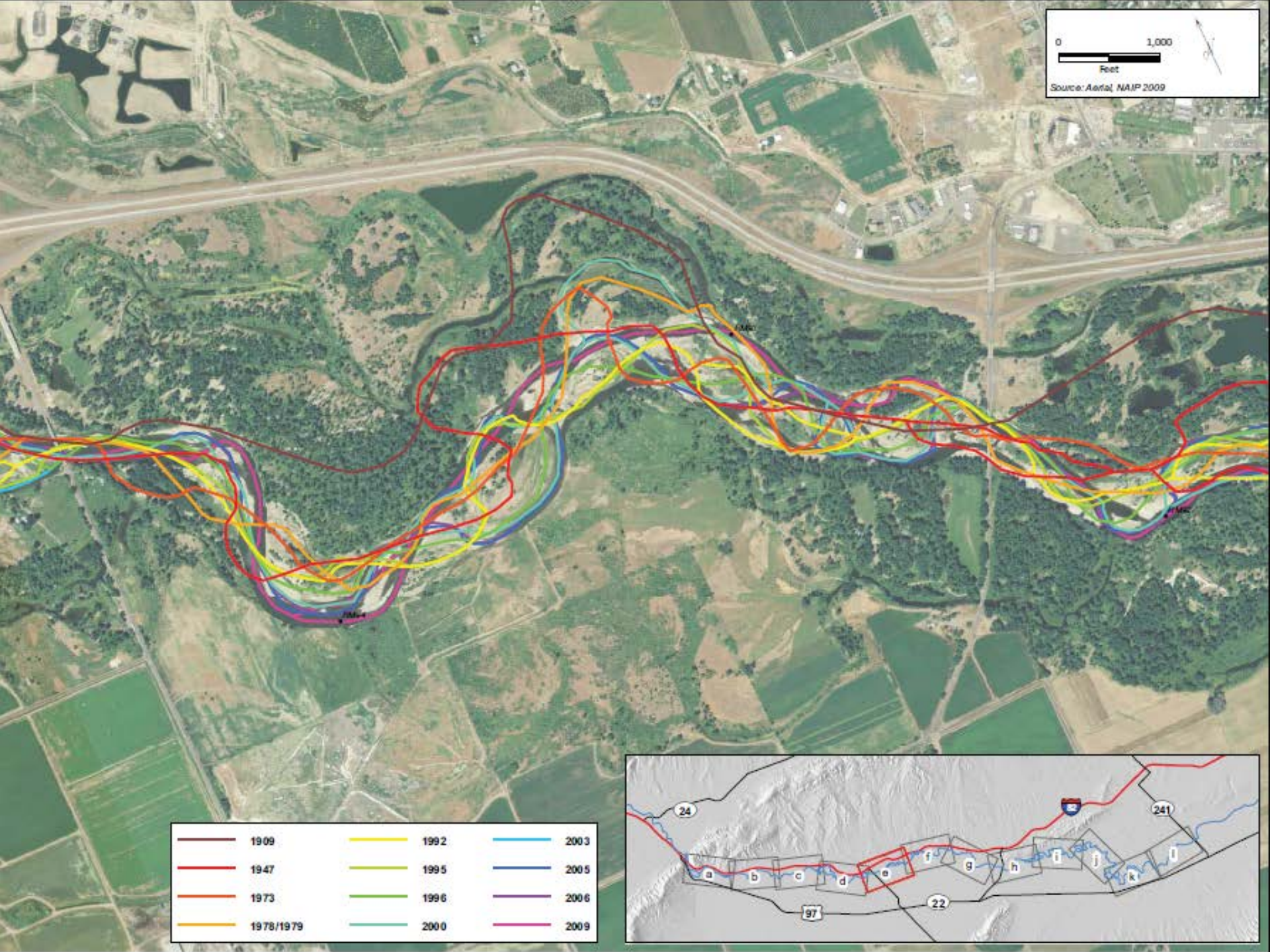
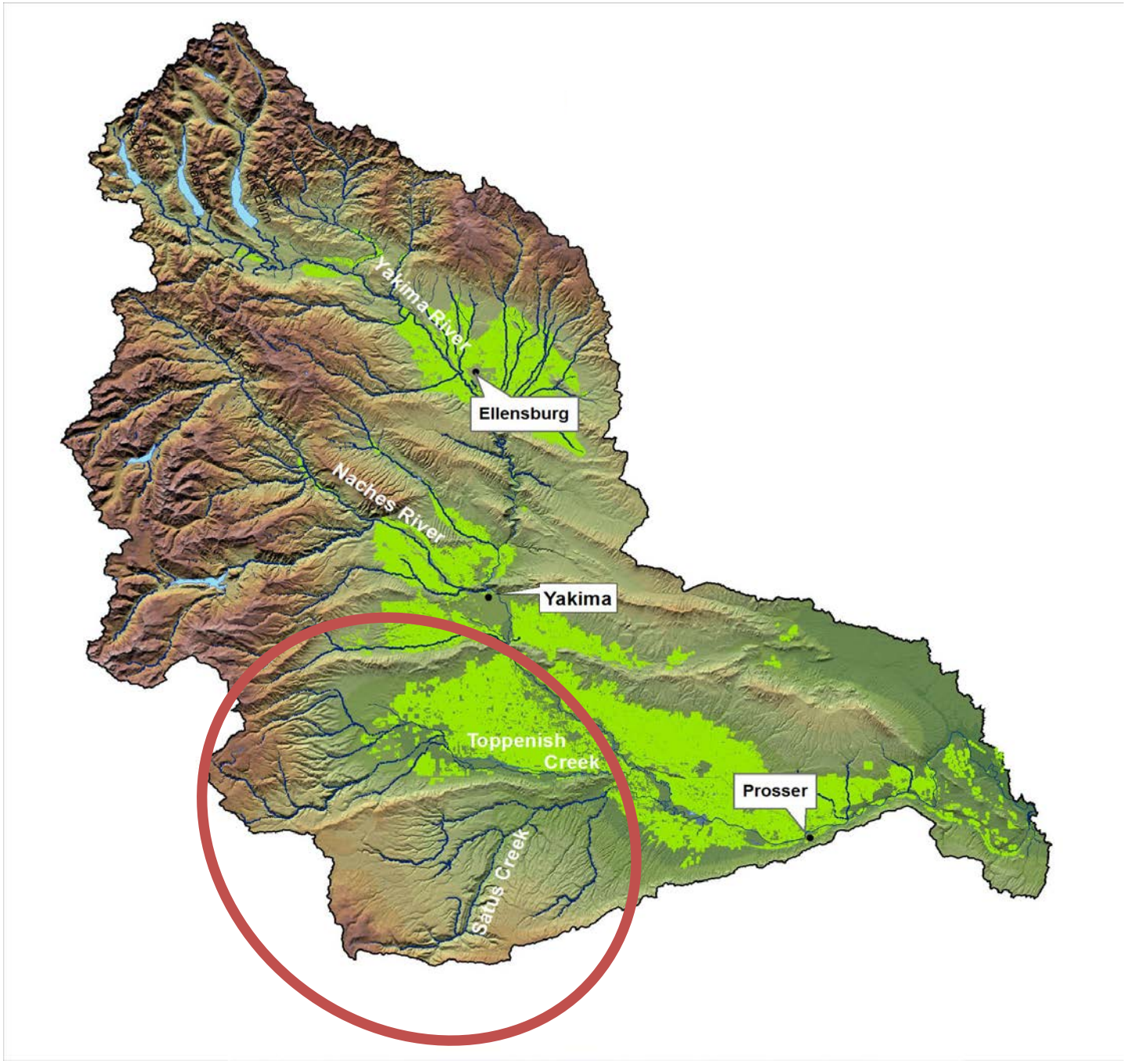

0
1,000
Feet
Source: Aerial, NAIP 2009
1909
1947
1973
1978/1979
1992
1995
1996
2000
2003
2005
2006
2009
24
241
97
22
a
b
c
d
e
f
g
h
i
j
k
l

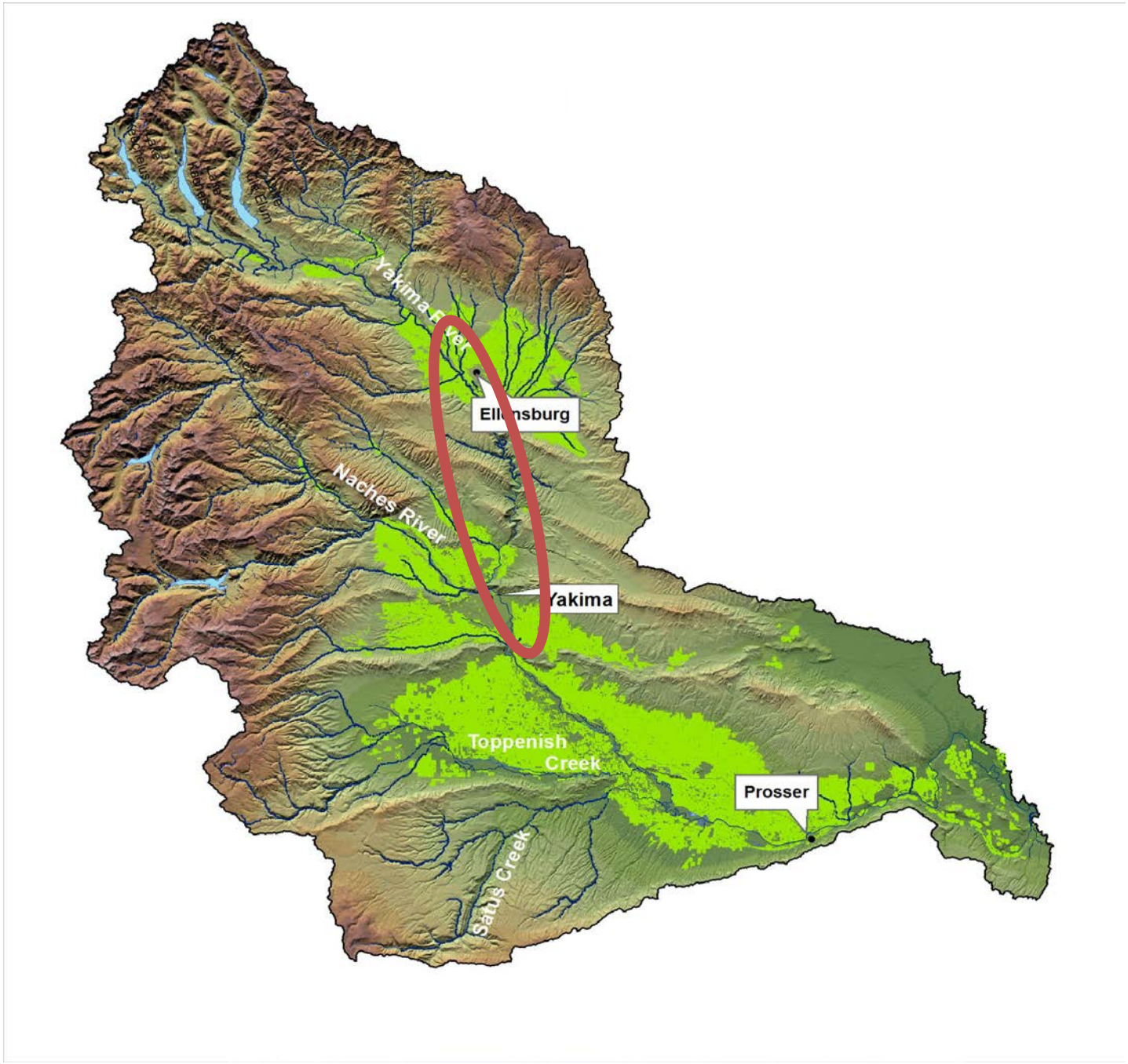
Table ES-1. Recommended Projects and Related Restoration Objective, Presented in Descending Order by Subreach and River Mile

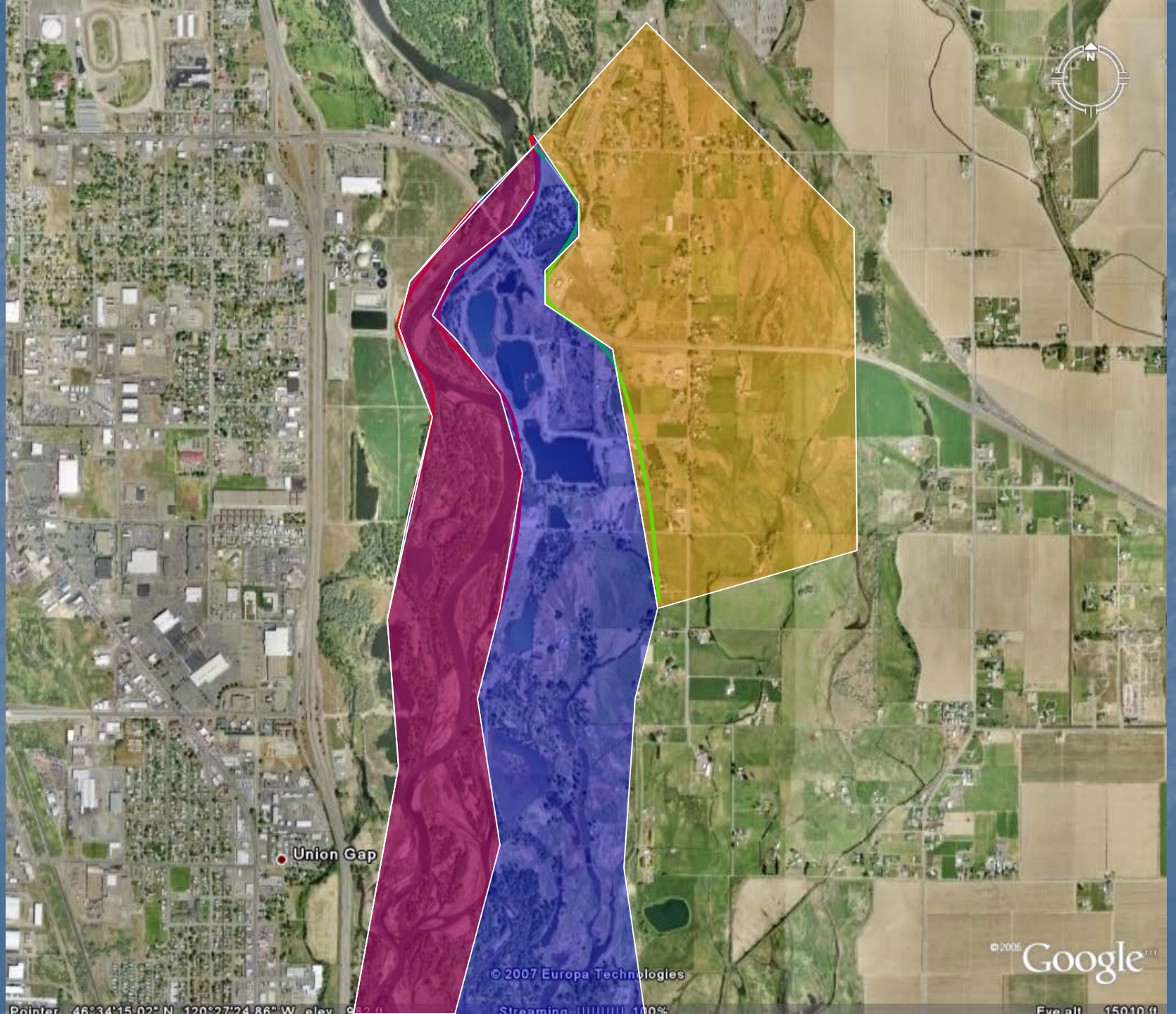
		Restoration Objectives					
		Process-Based Restoration				Habitat Enhancement	
Stream Reach	River Mile	Encourage Meandering Planform by Establishing Vegetated Channel Islands	Establish or Promote Engagement of Side Channels across a Wide Range of Flows	Establish or Promote the Engagement of Floodplain Channels across a Wide Range of Flows	Remove Rip Rap or Bank Hardening	Install Instream Wood	Enhance Riparian Revegetation
5	105.2–102.9						X
5	105.0–103.0	X					
5	102.9–102.2				X		
5	102.3–100.7						X
5	102–101	X					
5	98.6–98.0	X					
4	96.9–96.3				X		
4	95.4–95.1			X	X		
4	94.45–93.0						X
4	93.5	X					
3	90.3					X	
3	89.7–89.3		X	X			
3	87.7–85.9						X
3	81.7–80.5						X
3	80.1		X				
2	80.5–78.2						X


Yakima River
Ellensburg
Naches River
Yakima
Toppenish Creek
Prosser
Satus Creek


White Swan, WA


Google earth


Yakima River
Ellensburg
Naches River
Yakima
Toppenish
Creek
Prosser
Satus Creek


Union Gap
© 2007 Europa Technologies
©2006 Google

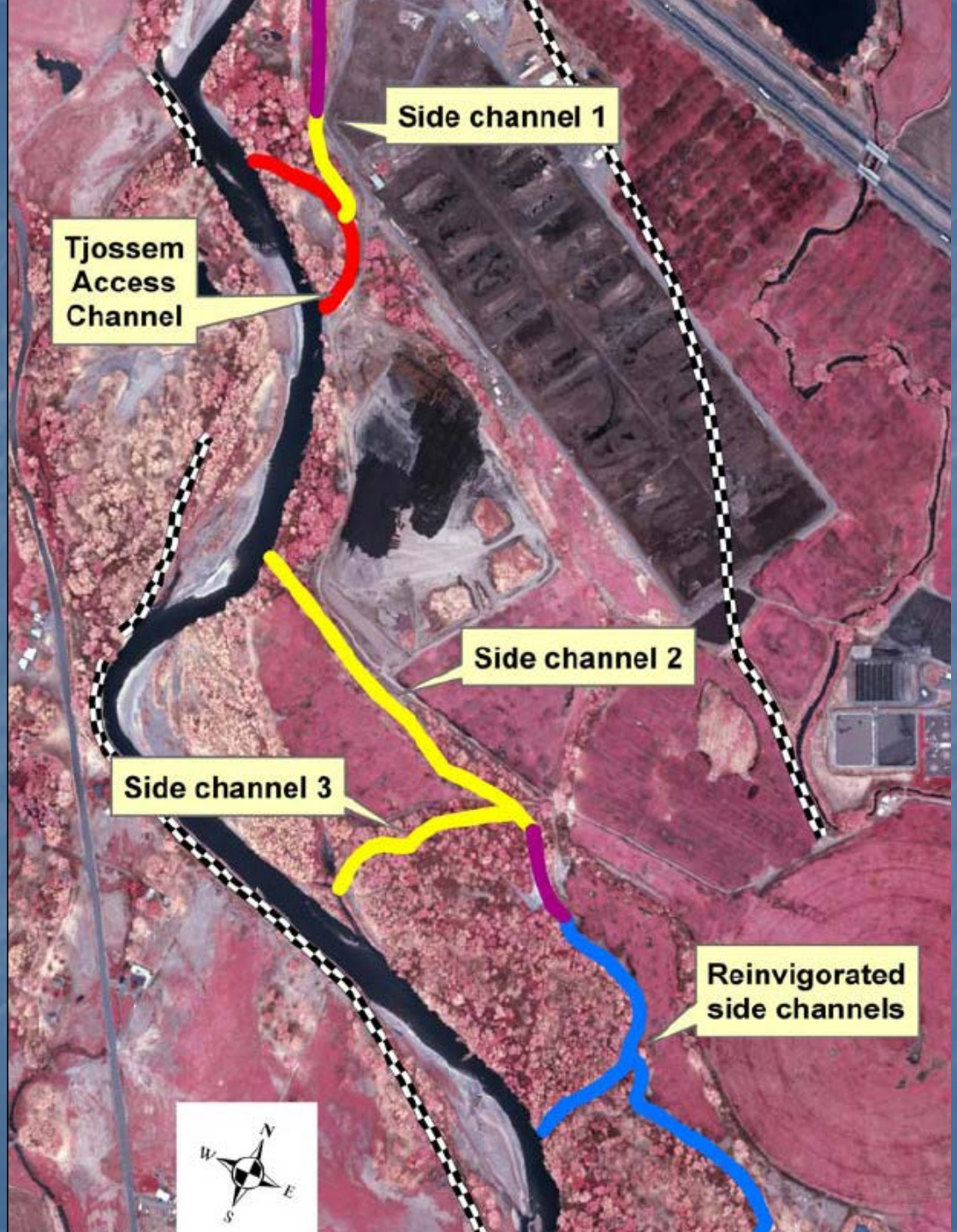
Construction of Yakima River Setback Levee Progresses Well (USA)

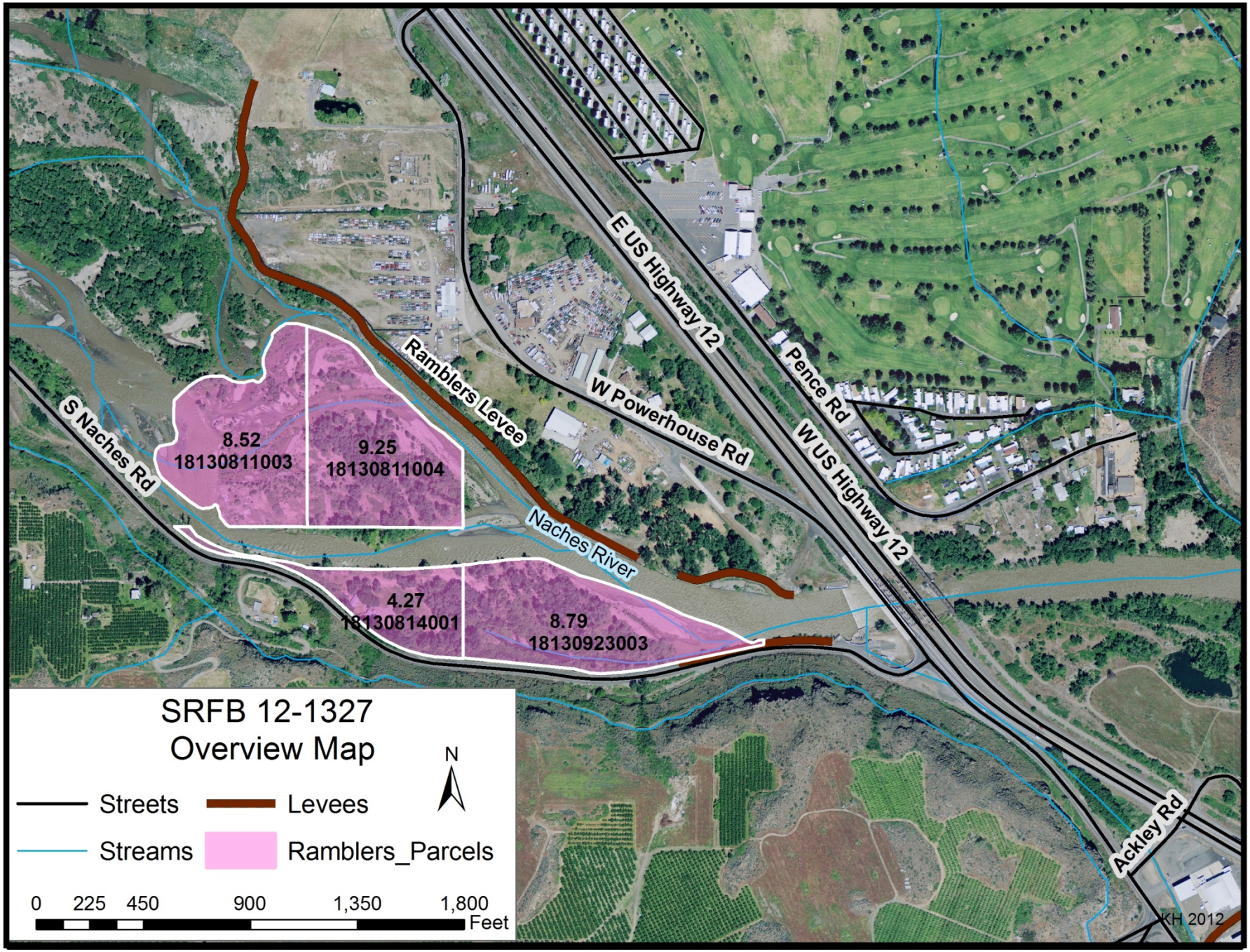
Posted on Jan 13th, 2012 with tags Americas, construction, Levee, News, Progresses, river, Setback, USA, well, Yakima.


Construction of Yakima River Setback Levee Progresses Well.

The Yakima River levee system is bustling with activity these days as the U.S. Army Corps of Engineers works to construct a setback levee measuring nearly 3,900 linear feet on the left bank of the Yakima River near Sportsman State Park.

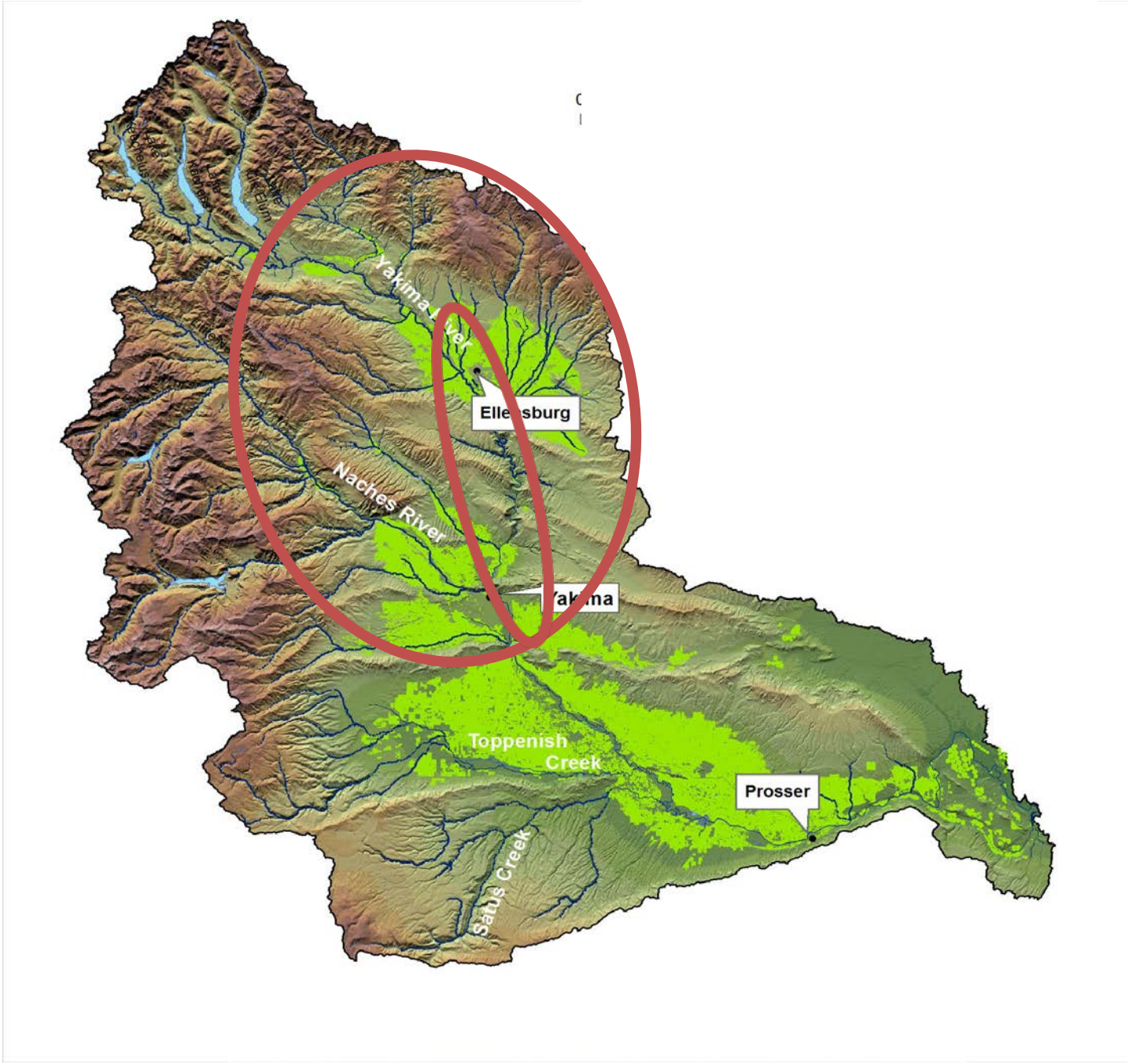
Construction commenced Monday on the approximately $2.9 million federally-funded project which is expected to be complete by early February.


Side channel 1
Tjossem Access Channel
Side channel 2
Side channel 3
Reinvigorated side channels
N
W
E
S


E US Highway 12
W US Highway 12
Pence Rd
W Powerhouse Rd
Ramblers Levee
S Naches Rd
Naches River
Ackley Rd
8.52
18130811003
9.25
18130811004
4.27
18130814001
8.79
18130923003
SRFB 12-1327
Overview Map
N
Streets
Levees
Streams
Ramblers_Parcels
0 225 450 900 1,350 1,800
Feet
KH 2012

Floodplain Needs

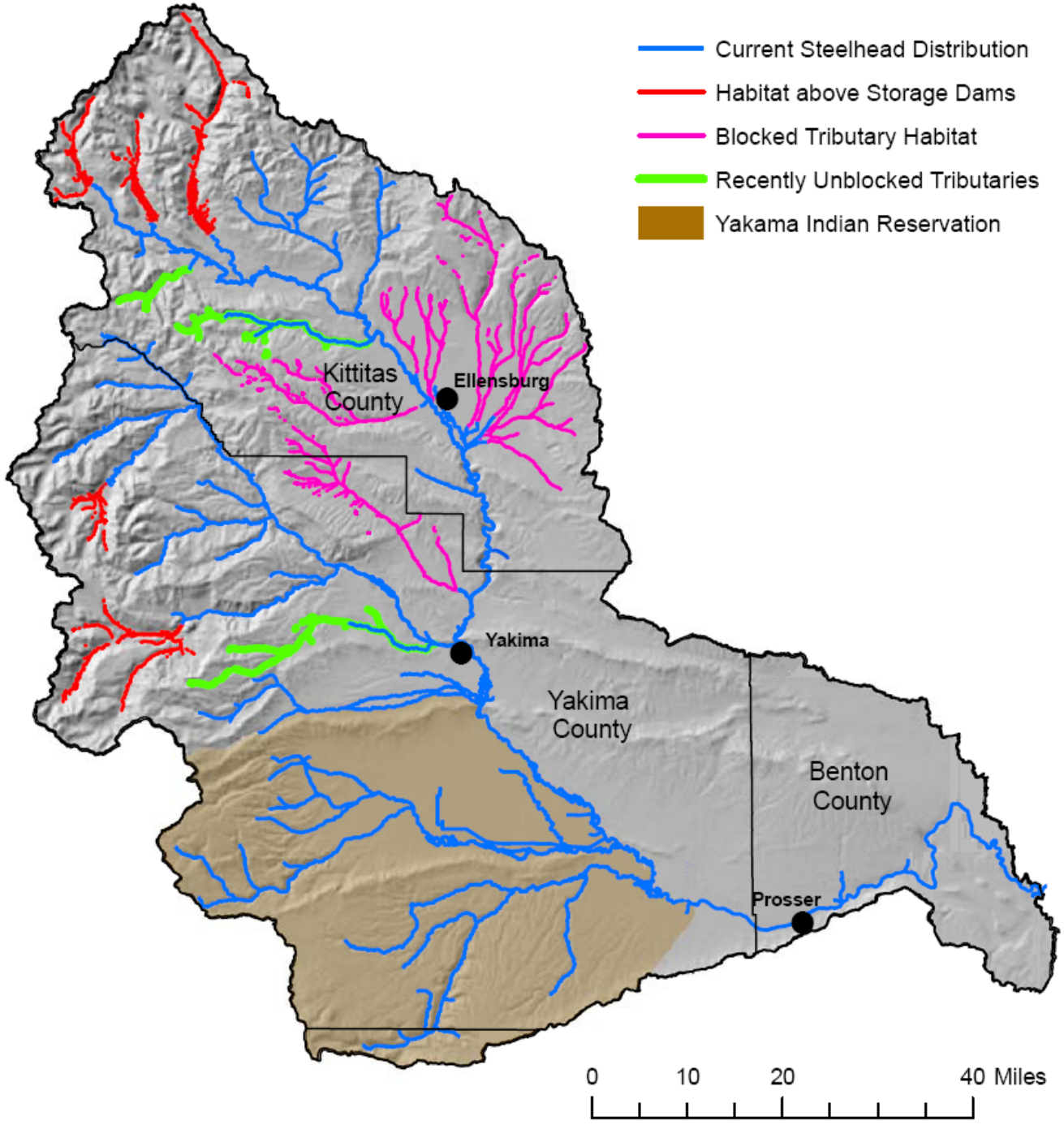
- Significant influxes of new funding
- Staffing and coordination to take on large, complex projects
- Strong partnership with local governments
- Better understanding of fish use of mainstem floodplains

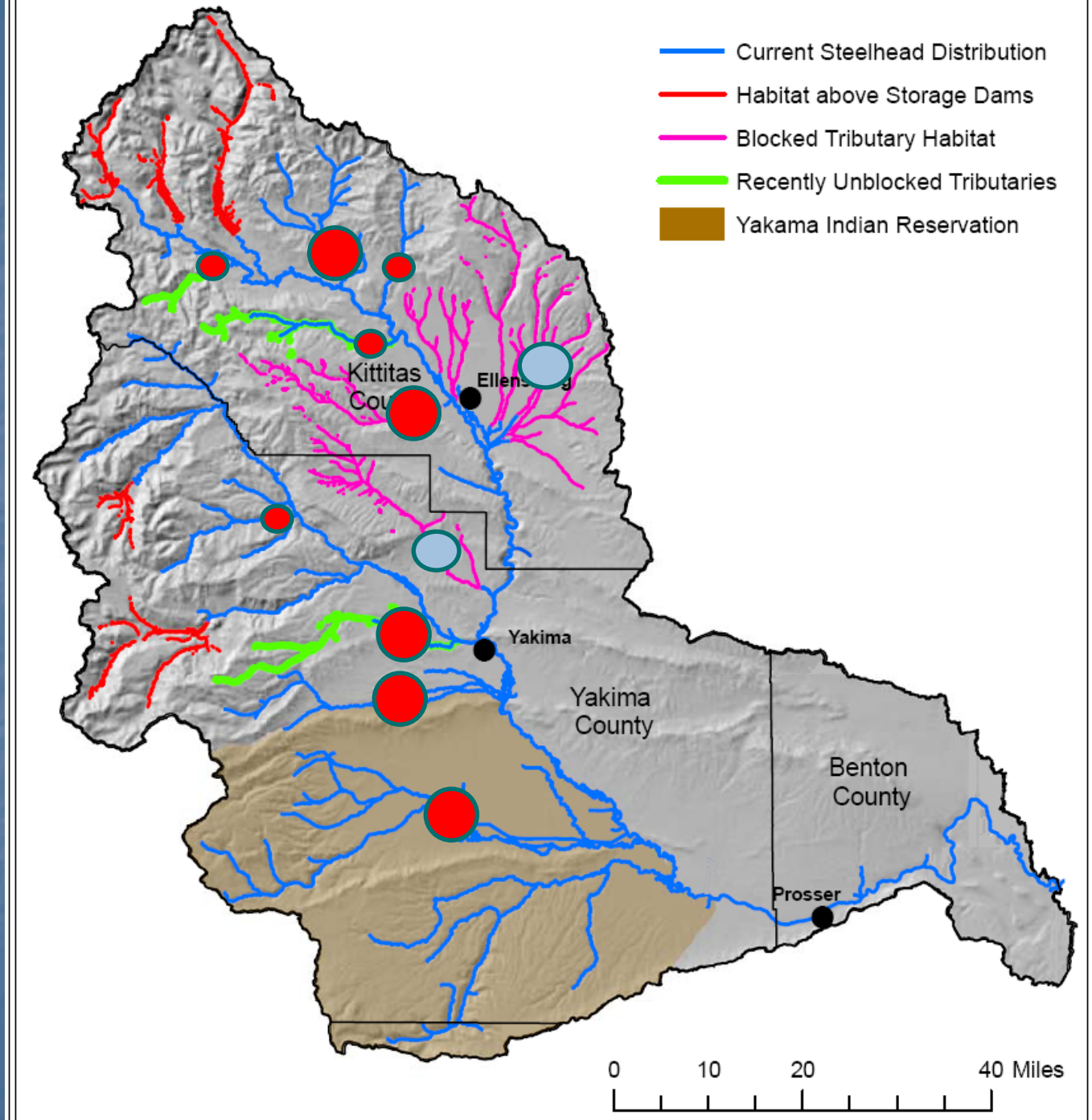

Yakima River
Ellensburg
Naches River
Yakima
Toppenish
Creek
Prosser
Satus Creek

Taneum Creek

45+ Adults in 2010


DEERE
50D


Current Steelhead Distribution
Habitat above Storage Dams
Blocked Tributary Habitat
Recently Unblocked Tributaries
Yakama Indian Reservation
Kittitas County
Ellensburg
Yakima
Yakima County
Benton County
Prosser
0
10
20
40 Miles


Current Steelhead Distribution
Habitat above Storage Dams
Blocked Tributary Habitat
Recently Unblocked Tributaries
Yakama Indian Reservation
Kittitas
Cou
Ellens
Yakima
Yakima
County
Benton
County
Prosser
0
10
20
40 Miles

Taneum Wood Placements

Swauk Floodplain Projects

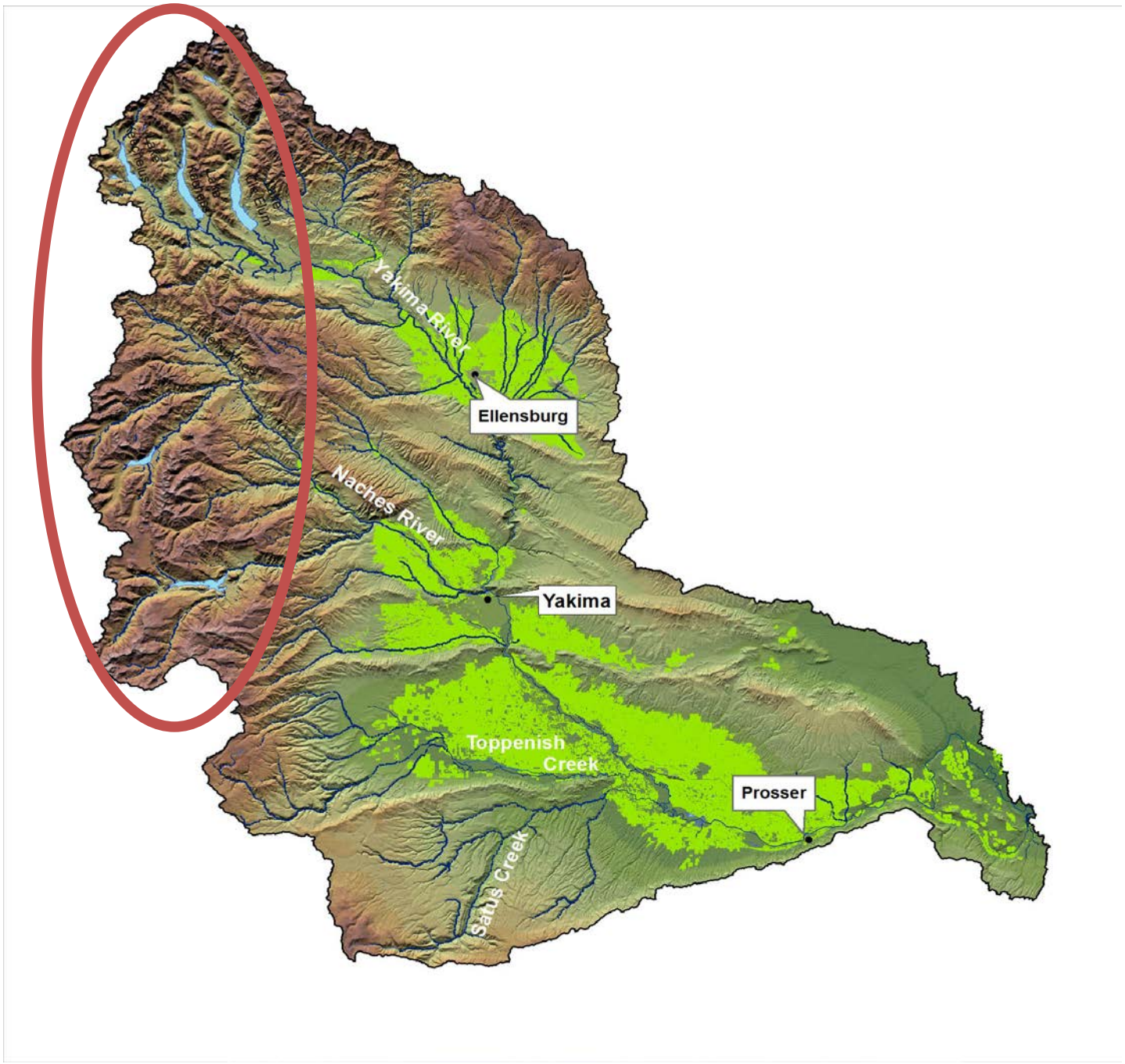
Table 4-14 Comparison of results of 2009 baseline conditions and subsequent stream surveys in 2010 and 2011.

	2009 Baseline	2010	2011	Difference from 2010 to 2011	Difference from 2009 to 2011
Total Number of Units	37	61	69	8	32
Pools*	10	20	21	1	11
Runs	14	22	21	-1	7
Riffles	13	19	27	8	14
Pool to Run ratio	0.7	0.9	1.0	0.1	0.3
Number of pools per mile of channel	7	13	14	1	7
Mean residual pool depth (in)	21	23	23	0	2
Mean distance between pools (ft)	646	360	339	-21	-307
Large wood abundance	27	39	111	72	84
Embeddedness (%)	28	22	22	0	- 6
% Fine sediment (< 2 mm)	28	26	12	-14	-16

* Pools are defined in the field by the criteria in Pleus et al. 1999.

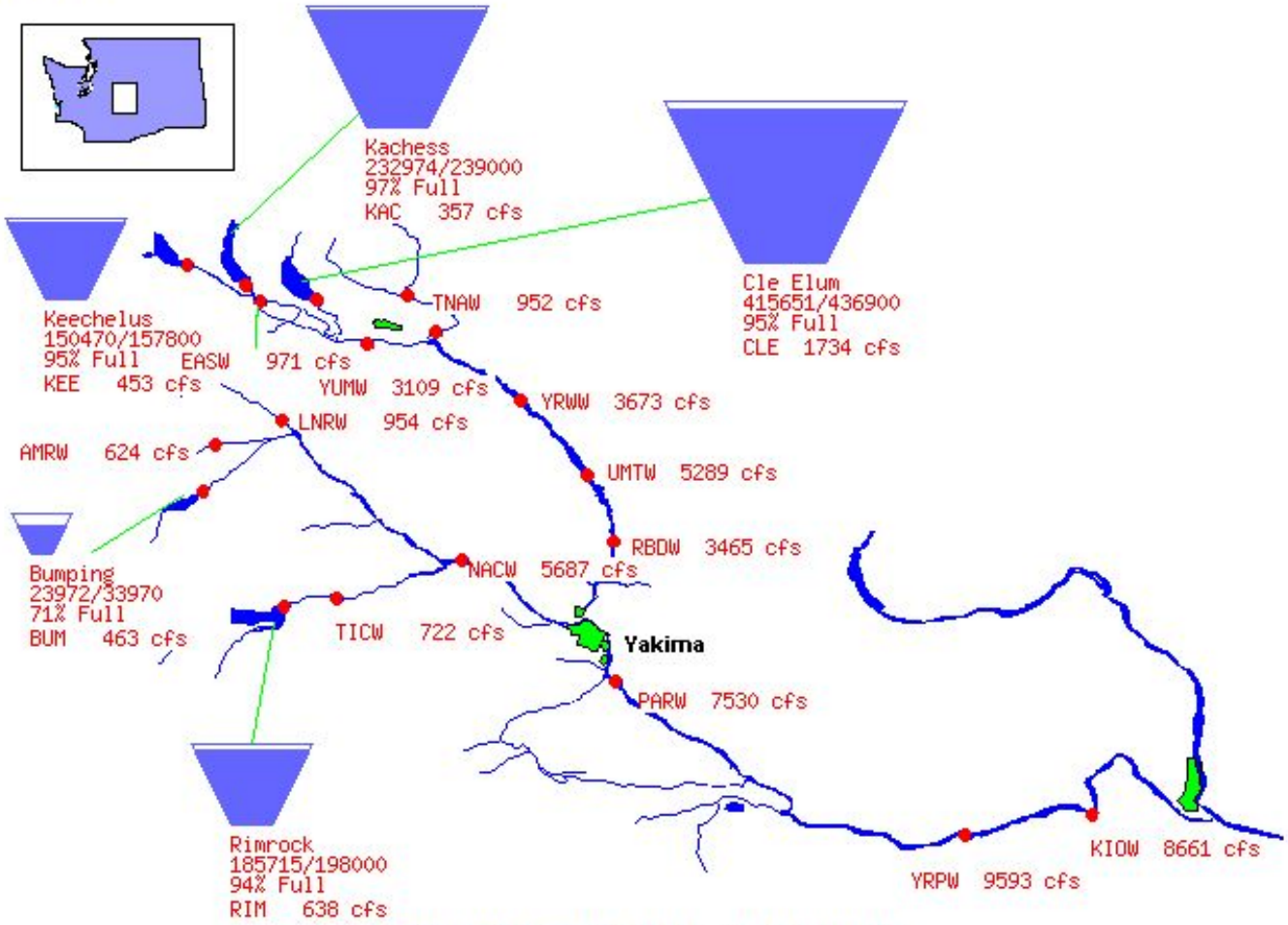
Tributary Habitat Needs

- Need to avoid scattering efforts in lower priority areas
- Need to agree on priority areas and actions
- Need to quantify goals and monitor corresponding outcomes
- Need to focus on land use issues in lower reaches of specific tributaries


Yakima River
Ellensburg
Naches River
Yakima
Toppenish
Creek
Prosser
Satus Creek

Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Yakima River Basin

06/02/2011



PROVISIONAL DATA - SUBJECT TO CHANGE!

Average daily streamflows indicated in cubic feet per second.
Reservoir levels current as of midnight on date indicated.
Click on gaging stations (red dots) for streamflow hydrographs.
Graph of Total System Storage

Improve Mainstem Flows

- Increase ability to manage mainstem flows for fisheries
- Quantify, prioritize & implement flows for:
  - Smolt outmigration
  - Upstream passage of adults
  - Juvenile rearing in key reaches
- Address physical impacts of bypasses, etc

Addressing mainstem issues via:

- SOAC and other Existing Mechanisms
- Use of YRBWEP conserved water
- BOR Yakima Operations BIOP
- The Integrated Plan Proposal
  - New and Expanded Reservoirs
  - Water marketing & conservation
  - Aquifer recharge

Mainstem Needs

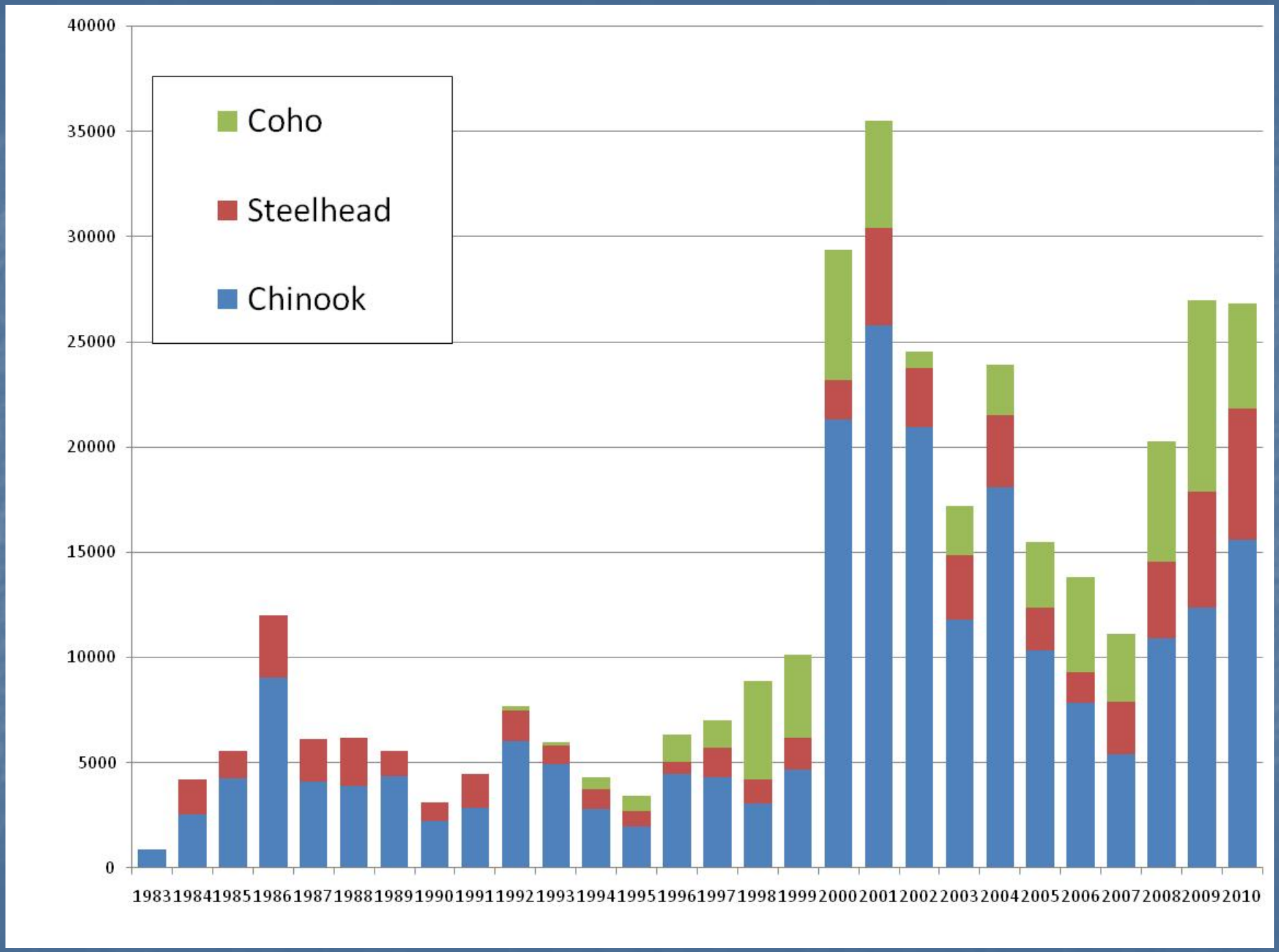
- Need for NOAA, USFWS and BOR to negotiate a workable Biop for Yakima Project Operations
- Need to better understand cumulative impacts of existing facilities
- Need research and monitoring to better understand what flow improvements would most benefit fish
- Support for long-term efforts to address water supply issues in the Yakima Basin

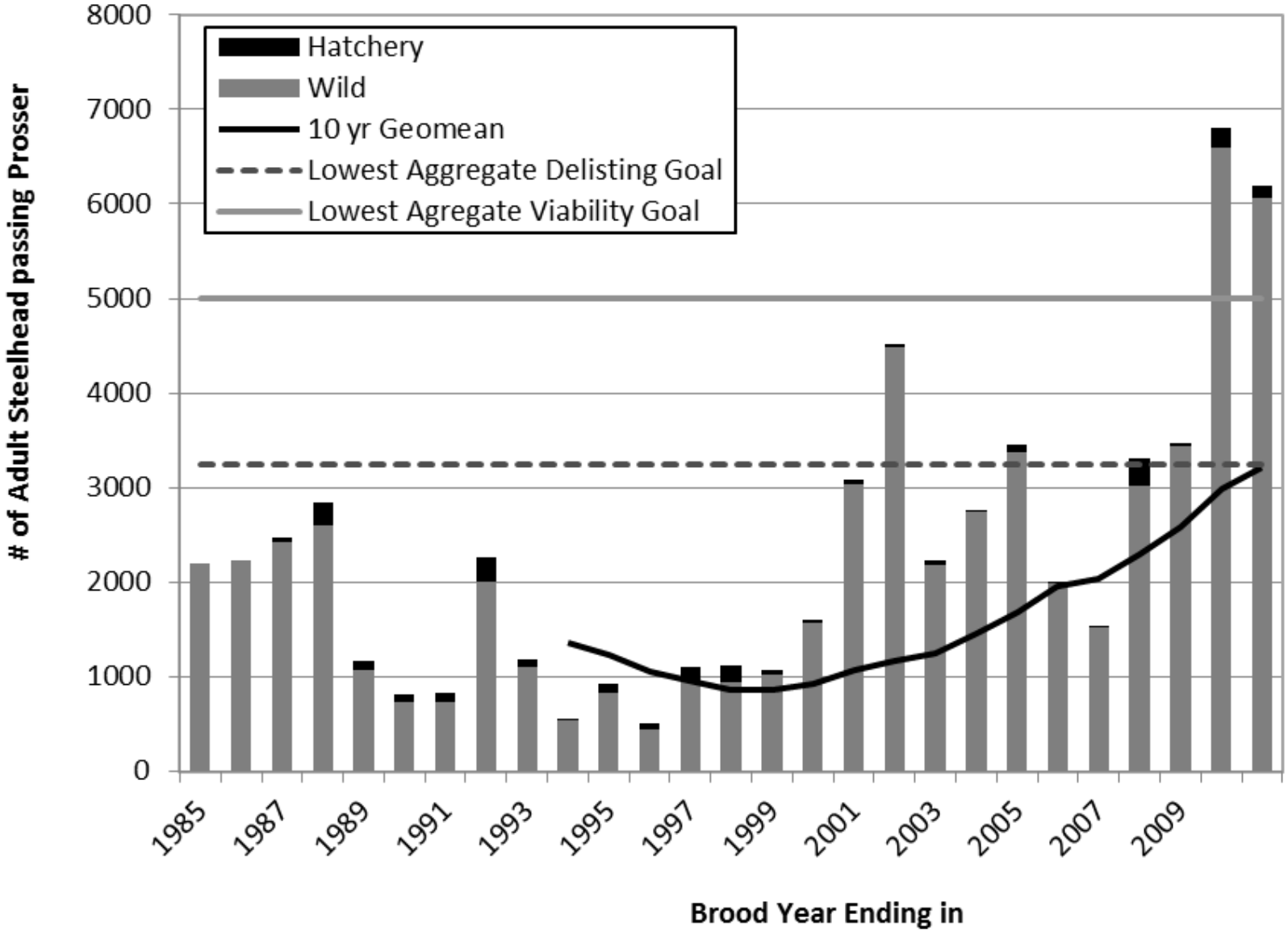
Mainstem Flow Presentations

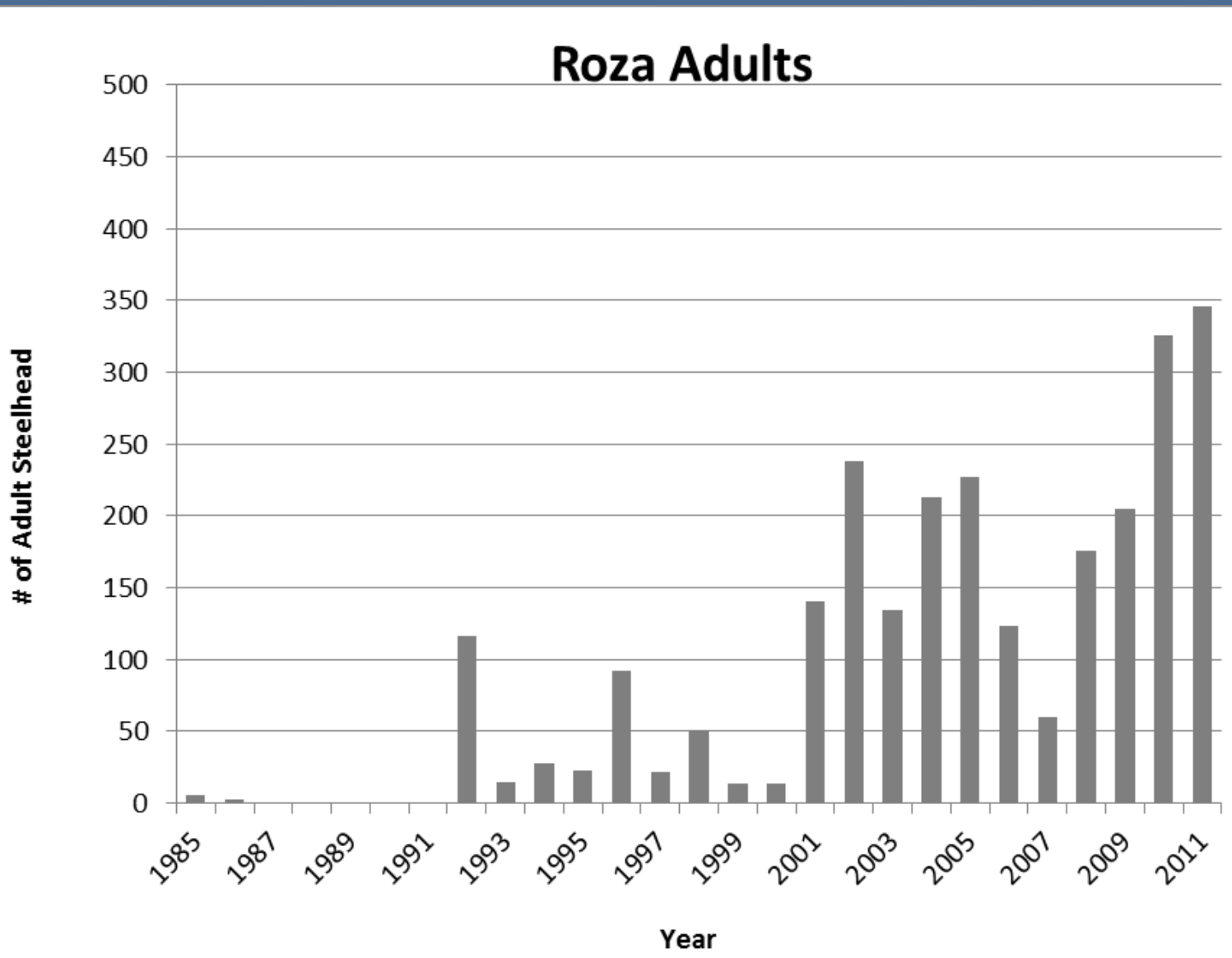
- **Weds 10:40 Wendy Christiansen**
  YRBWEP Integrated Plan Proposal
- **Weds 2:00 Andy Johnsen**
  Lamprey Passage at Yakima River Diversions
- **Thurs 4:00 Toby Kock et al**
  Flow Effects on Smolt Survival Below Roza

Changes since 1980

- Major investments in passage & screening
- Changes in Yakima River management
- Changes in hatchery practices
- Changes in land use (forestry, grazing)
- Improved water quality
- Increasing rate & scale of habitat projects
- Changes in the Columbia River


Coho
Steelhead
Chinook
40000
35000
30000
25000
20000
15000
10000
5000
0
1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010


8000
7000
6000
5000
4000
3000
2000
1000
0
# of Adult Steelhead passing Prosser
Hatchery
Wild
10 yr Geomean
Lowest Aggregate Delisting Goal
Lowest Agregate Viability Goal
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
Brood Year Ending in


Roza Adults
# of Adult Steelhead
500
450
400
350
300
250
200
150
100
50
0
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
Year

What we've got to work with...

- $10 million/yr to work with
- Total of ~50 FTEs to manage habitat work
- Spread over ~22 organizations
- Completing 25-35 projects/year
- Average of 1.5 FTEs and $300,000/project
- At $60k/each, FTEs = 30% of habitat total

Welcome Phil Roni

EFFECTIVE WATERSHED RESTORATION:

Key considerations for Planning, Prioritizing and Evaluation