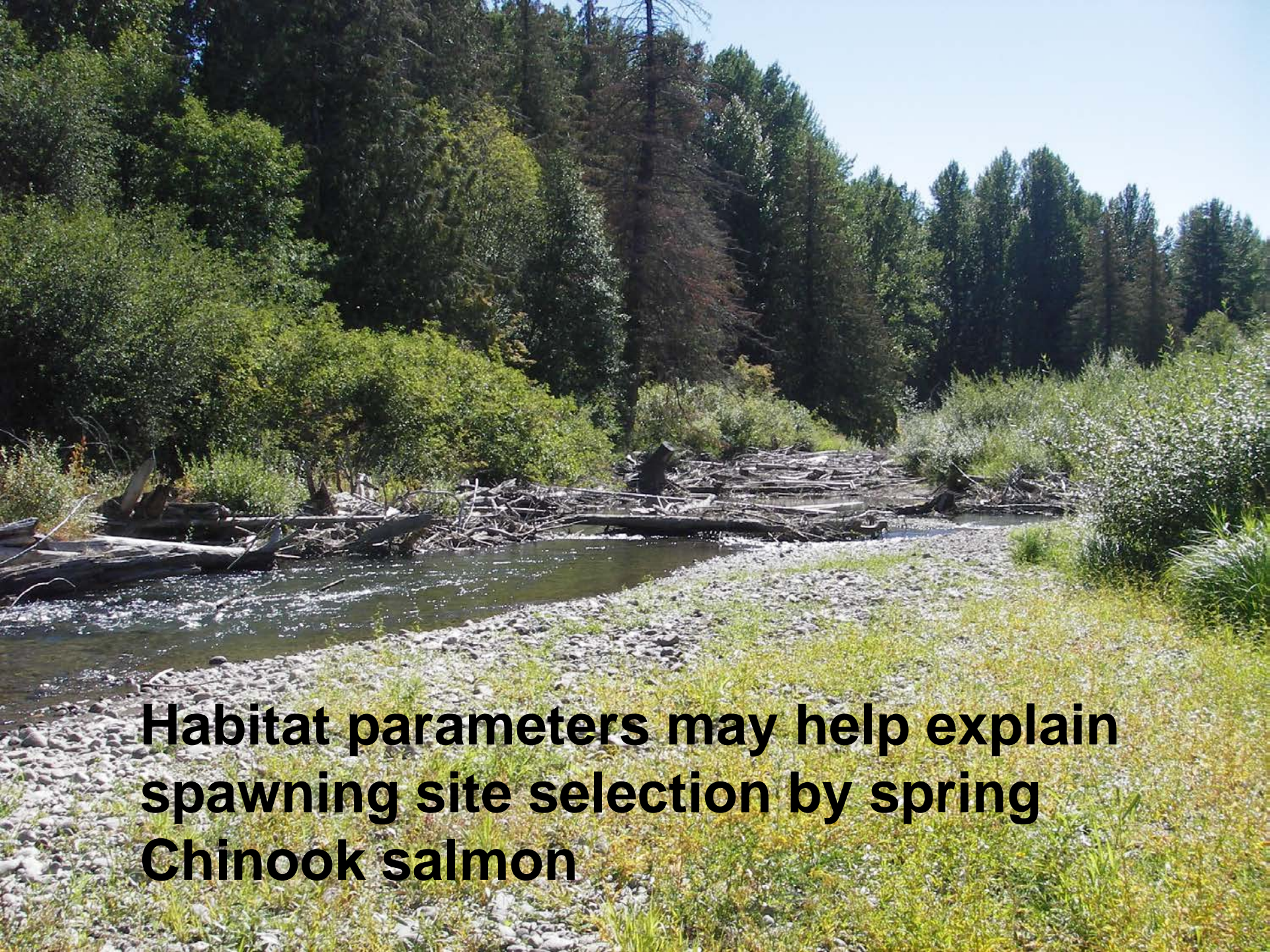


Mapping aquatic habitat in spring Chinook salmon spawning areas of the upper Yakima basin

**Jeremy Cram, Christian Torgersen (USGS),
University of Washington**

**George Pess, Andy Dittman, Ryan Klett,
Don Larsen, NOAA Fisheries**



Habitat parameters may help explain spawning site selection by spring Chinook salmon

Outline

- Objectives
 - 2007 fieldwork
 - purpose
- Methods
 - survey
 - study area
 - technology
- What's next
 - 2008 fieldwork



Project objectives

- Collect spatially explicit habitat and fish community data
- Using GIS, create maps from dynamically segmented habitat units

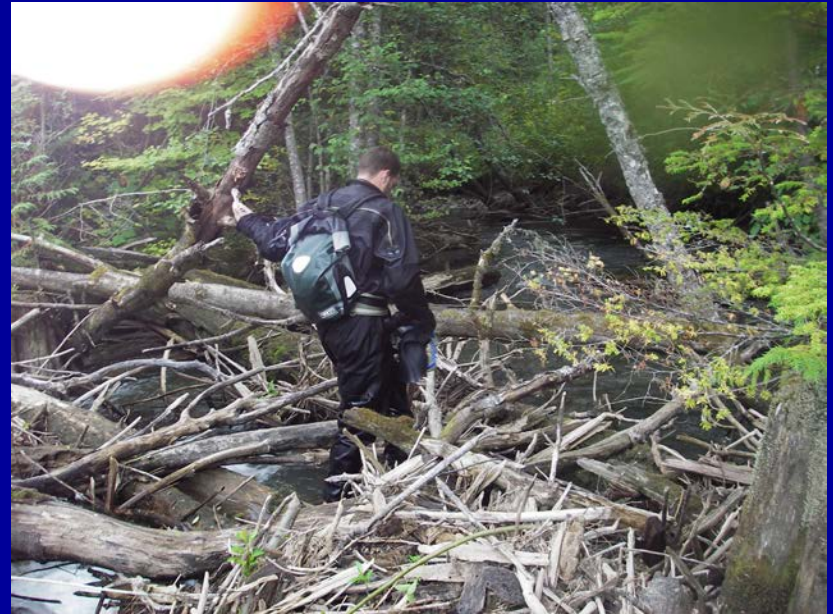


Why?



- Correlate habitat data to the distribution of redds and carcasses for hatchery/wild spring Chinook
- Investigate relationship between habitat parameters and juvenile salmonid distribution and survival
- Incorporate continuous fish community data into a related project by Ryan Klett (Master's project)

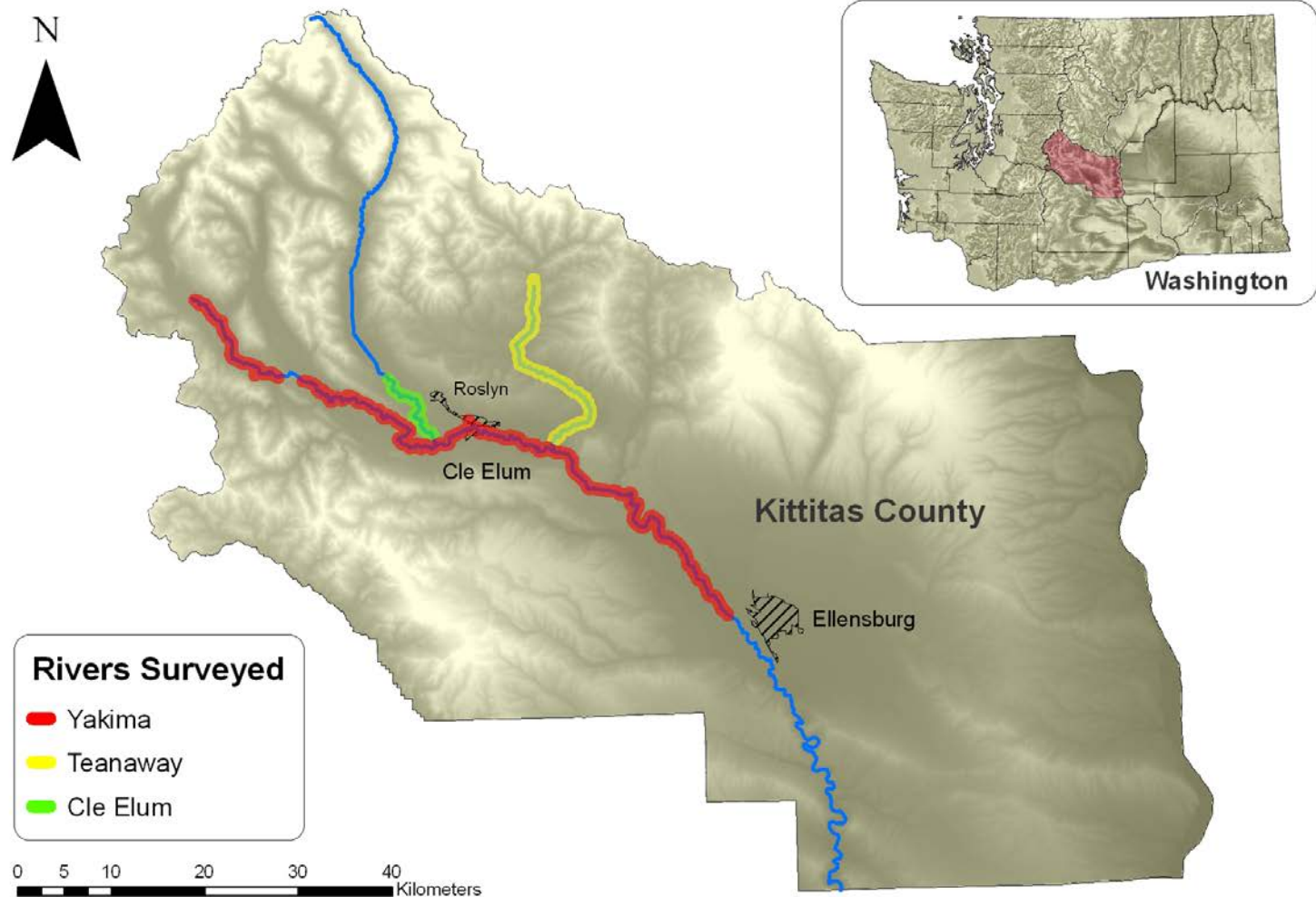
Methods make this study unique



Study Area

Fish and Habitat Survey of the Yakima River and Principal Tributaries

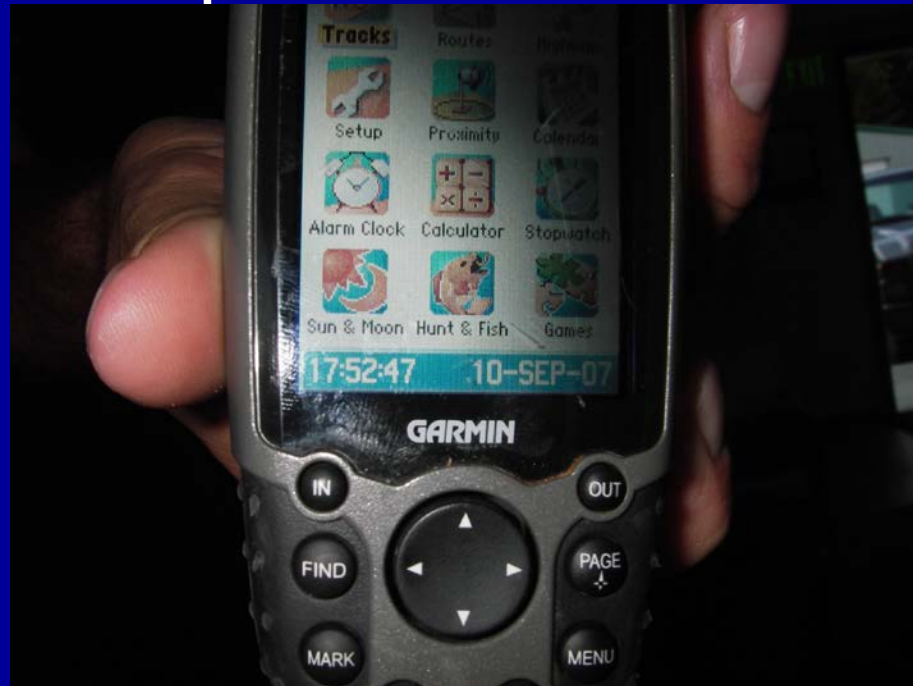
9/6/2007 - 10/2/2007



Technology

Garmin GPS: data must be digitized to a newly created line shapefile.

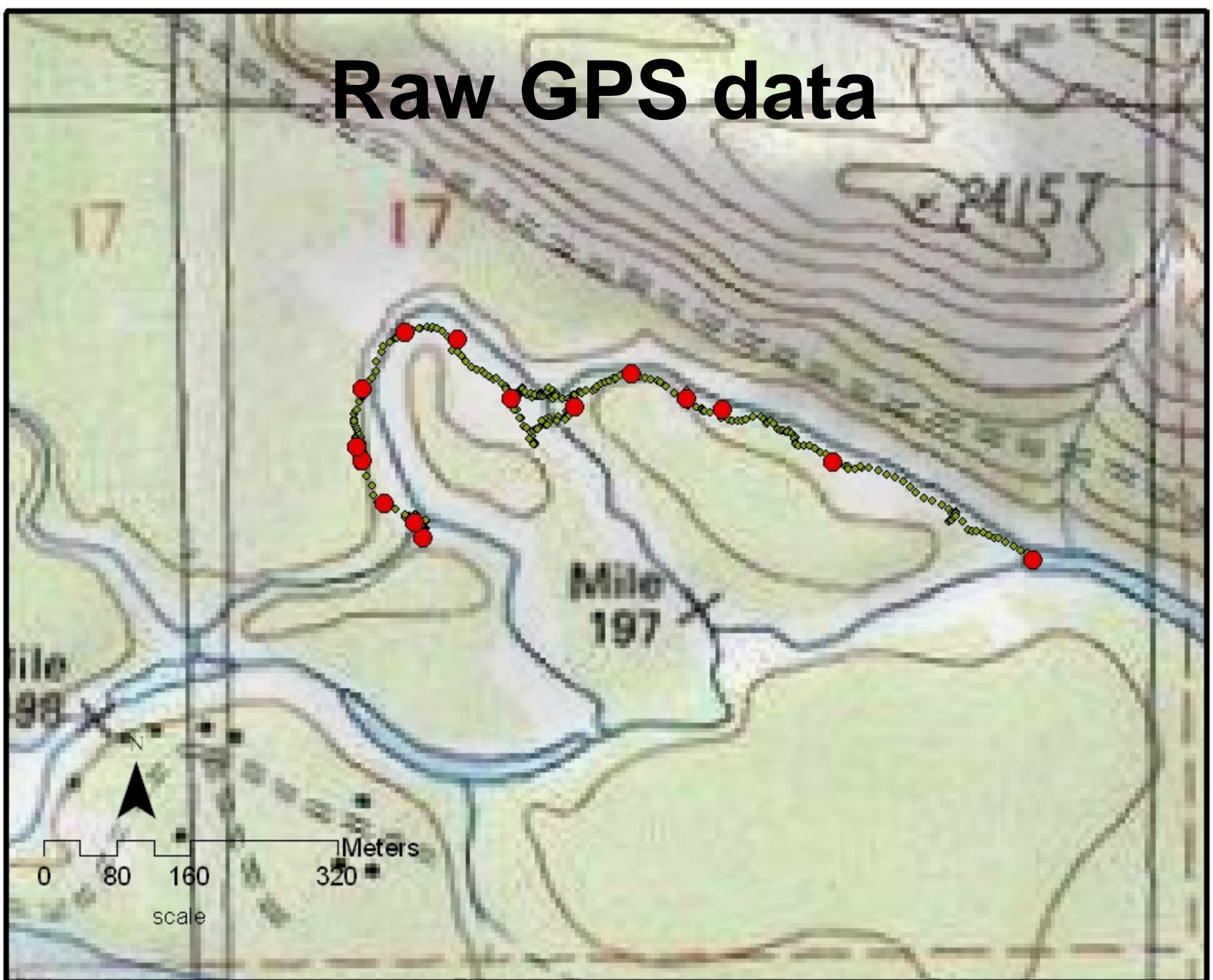
ArcPad: data must be joined and cleaned



Survey summary 2007

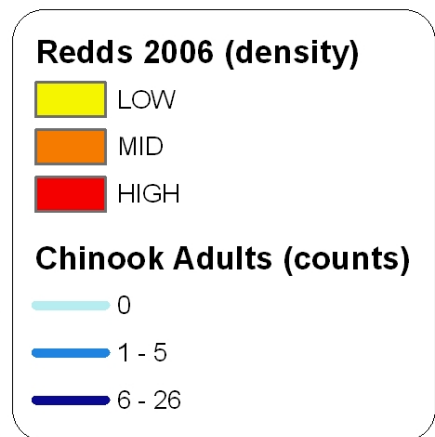
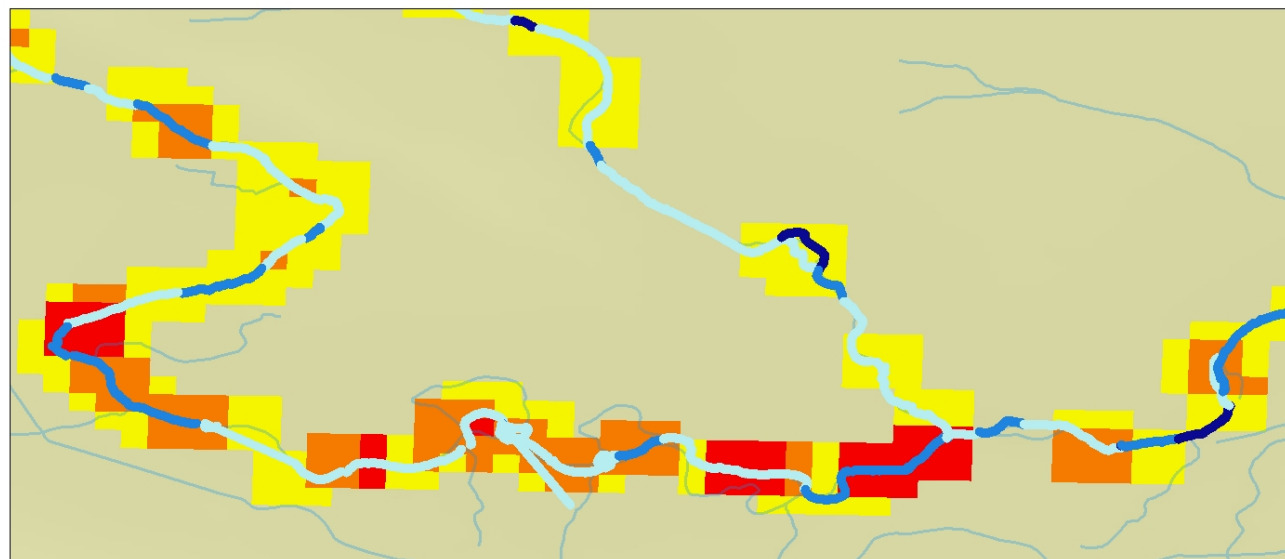
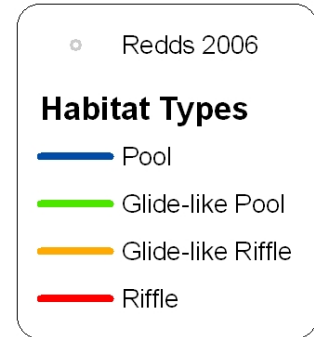
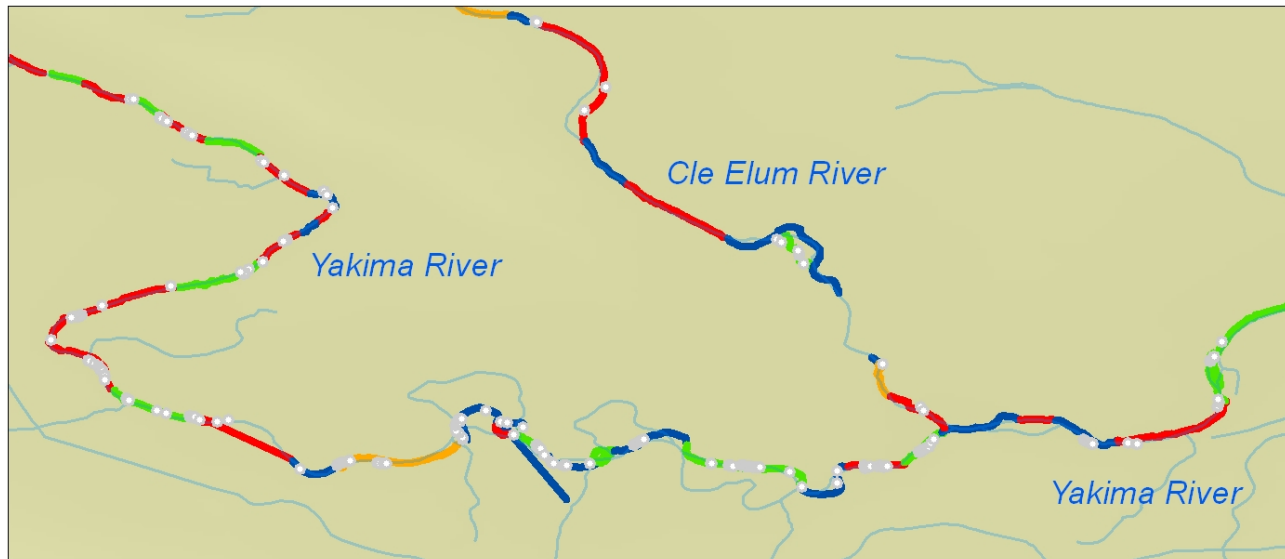
- Total main channel distance – 145 km
- Total side channel distance – 53 km
- Total fish counted – 22,375
- People required – 2-3
- Time required – 4 weeks
- Habitat metrics – channel type, substrate, depth, length, width, cover types, wood, temperature

Raw GPS data

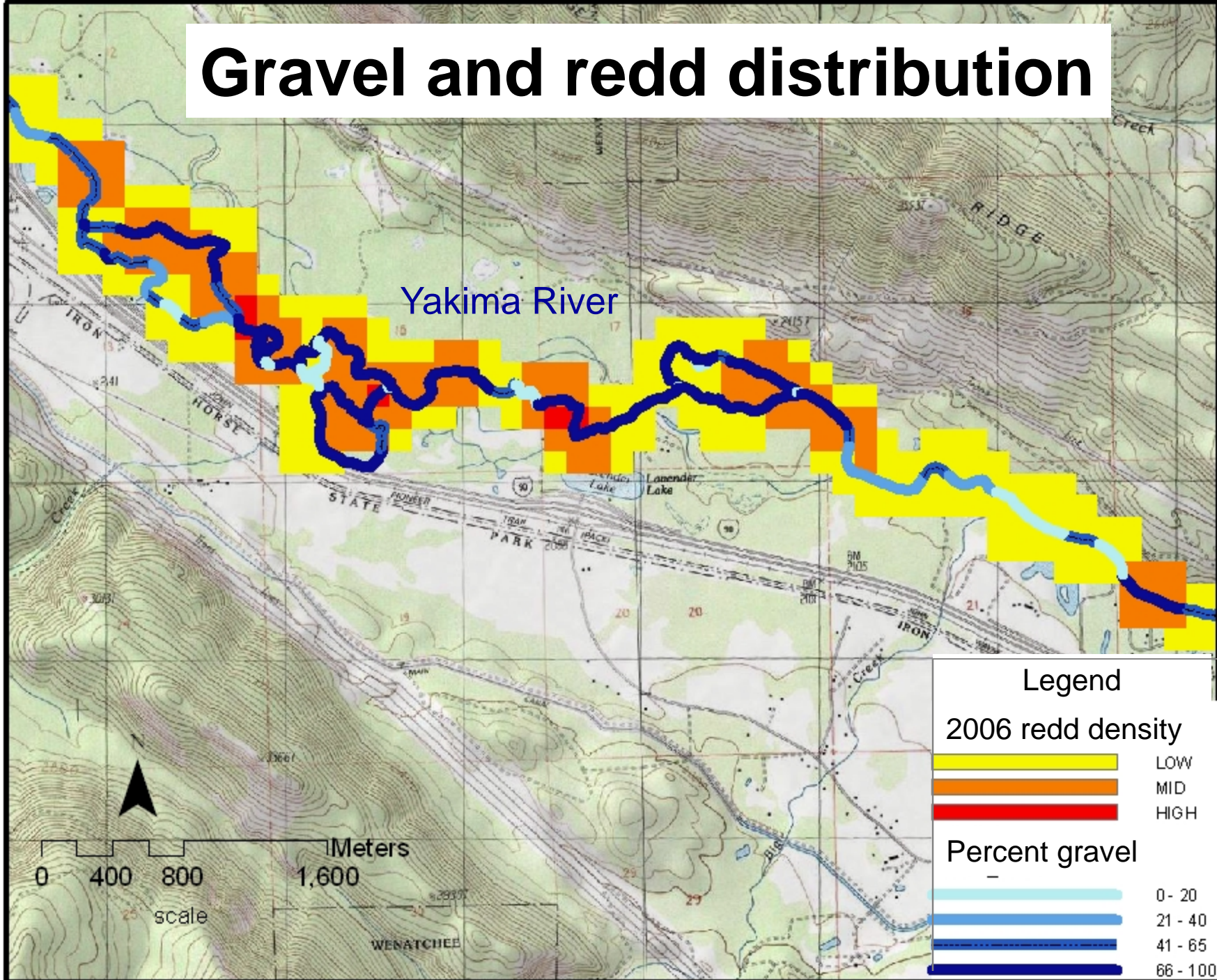


Salmon Redds, Habitat Types and Chinook Adult Counts near the Yakima - Cle Elum Confluence

9/6/2007-10/2/2007



Gravel and redd distribution



What's next in 2008?

- Intensive survey in selected areas and random ones
- LIDAR and boat mounted depth/temp probe
- Hyporheic flow dynamics



Acknowledgements

- Logistics and GIS: Darran May, Hiroo Imaki, Ethan Welty
- Housing and support: everyone at the Cle Elum supplementation and research facility
- Funding: NOAA BiOP
- Photography: Ethan Welty

