

Bull Trout Investigations in Tributaries to Little Kachess

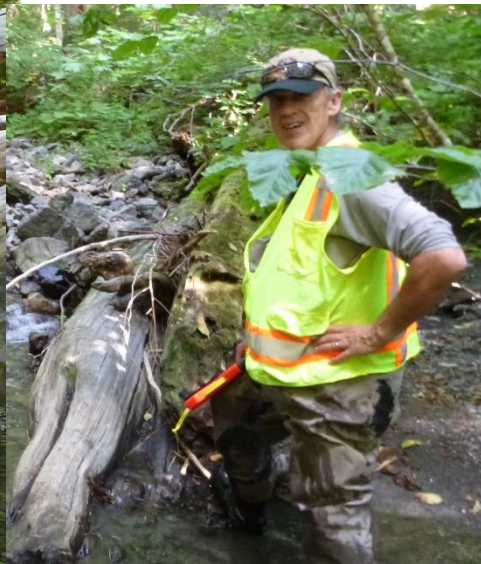
To Inform Design of Restoration Projects



Scott Kline Washington Department of Fish and Wildlife



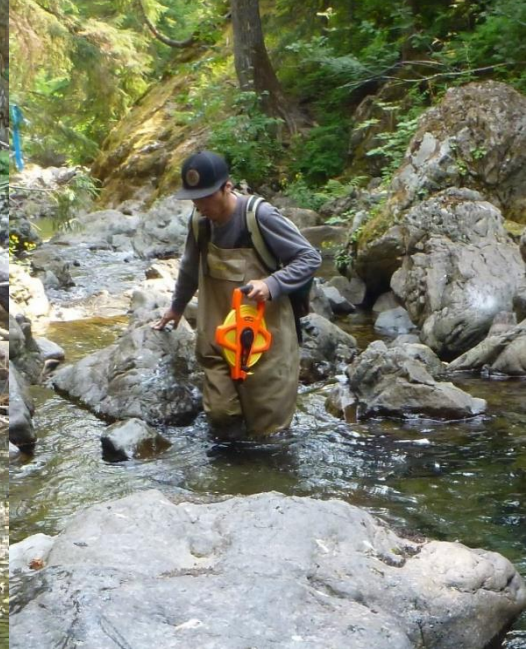
Mitch Long Kittitas Conservation Trust



Acknowledgements

RECLAMATION
Managing Water in the West

The central banner features several logos: on the left, a circular logo with a fish and a tree; next to it, a green logo with a white fish silhouette; the U.S. Army Corps of Engineers logo (UAS); the logo for the Confederated Tribes and Bands of the Waiilatpu Valley; the Native Fish Society logo; and the Kittitas Conservation Trust logo.



Why Investigate?

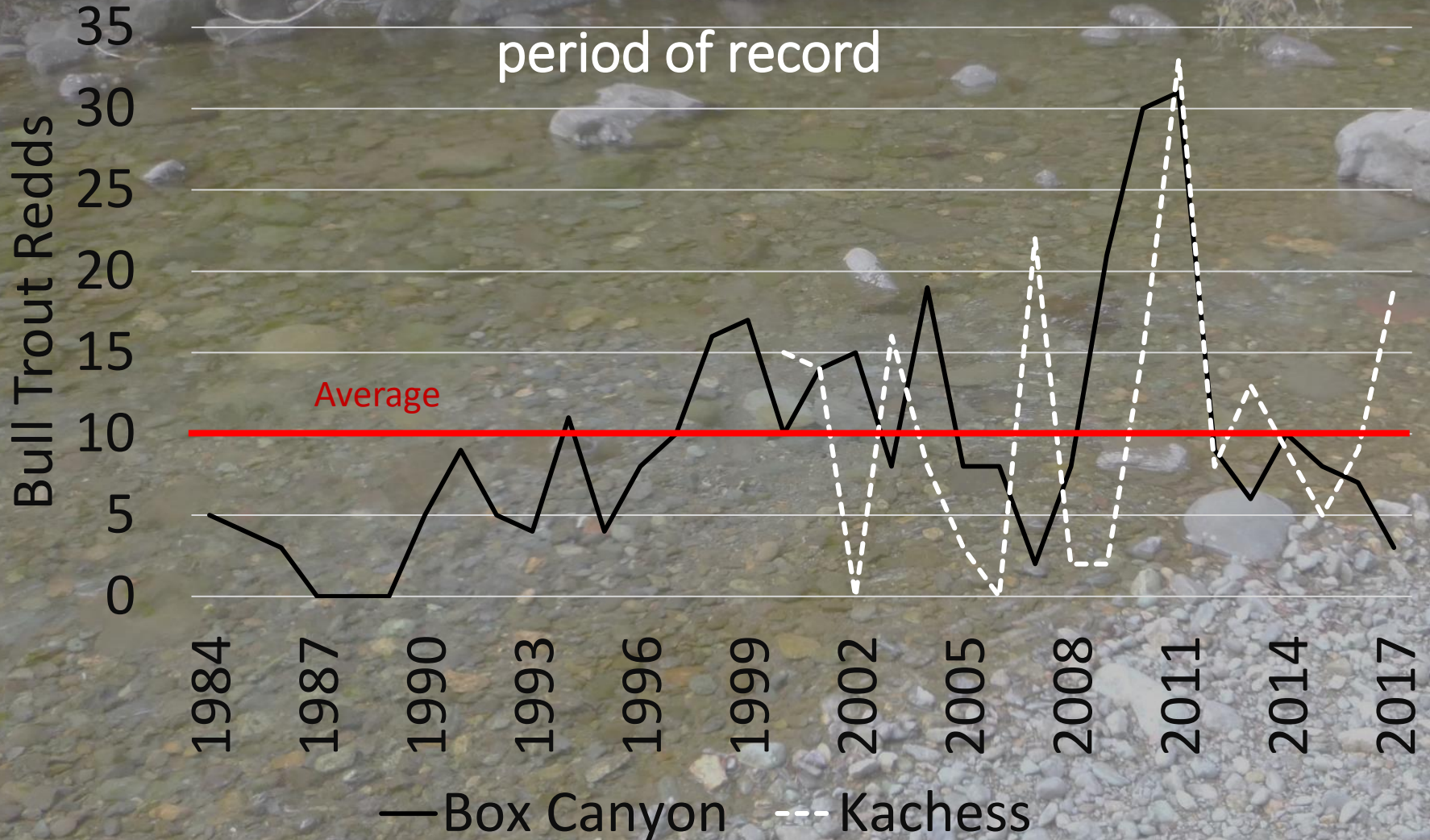
Bull Trout Redd Counts

10 – 34 year record through 2017



Why Investigate?

Kachess Basin Bull Trout Redd Counts



Why Investigate?

Bull Trout Action Plan (2013)

THREAT SEVERITY:	Significant	Moderately Significant	Unknown But Believed to Be Significant
Box Canyon Creek	Low Abundance		Angling ment l Extent of Habitat use Recreation
Kachess River			it

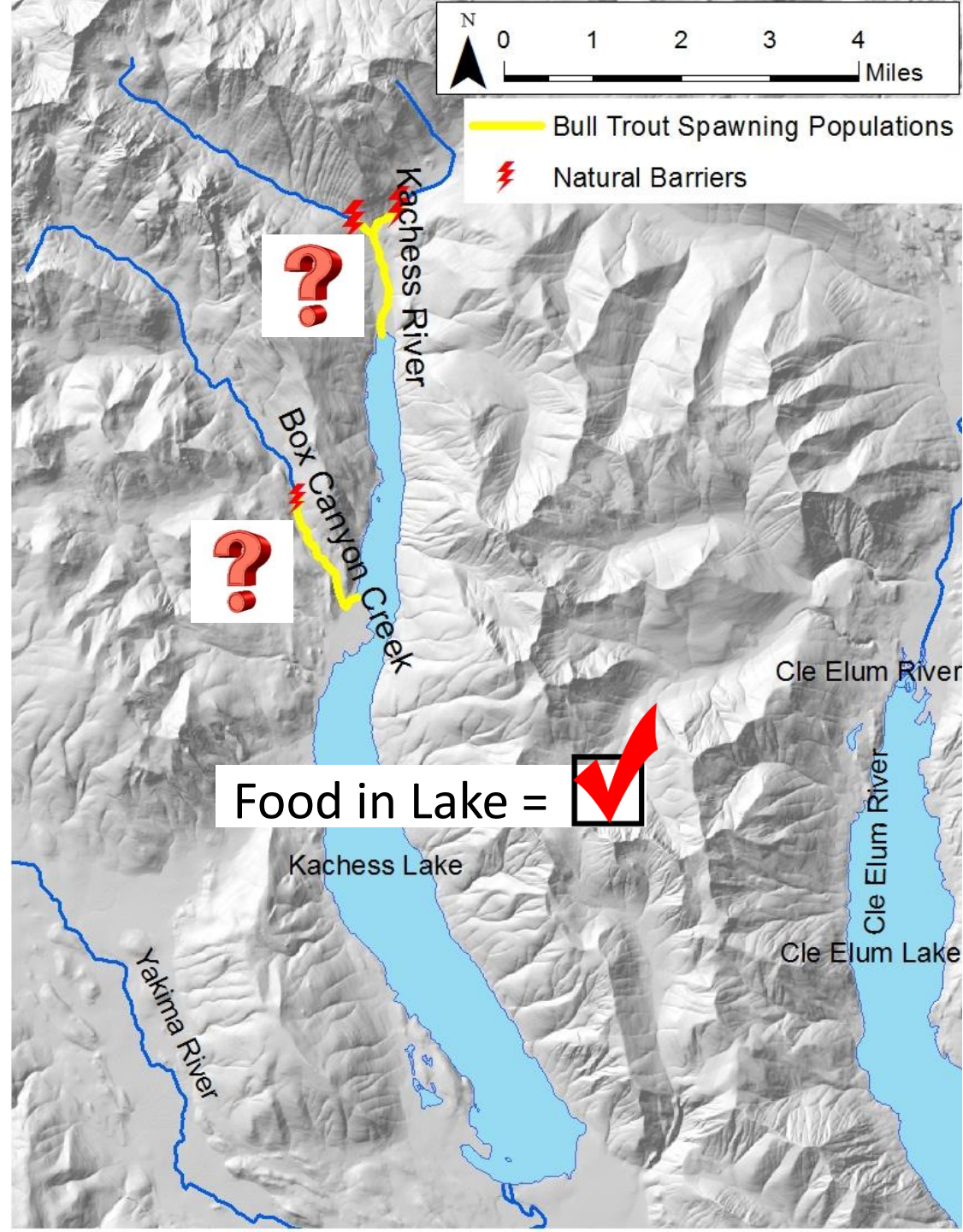
Action Population
Highest priority for action

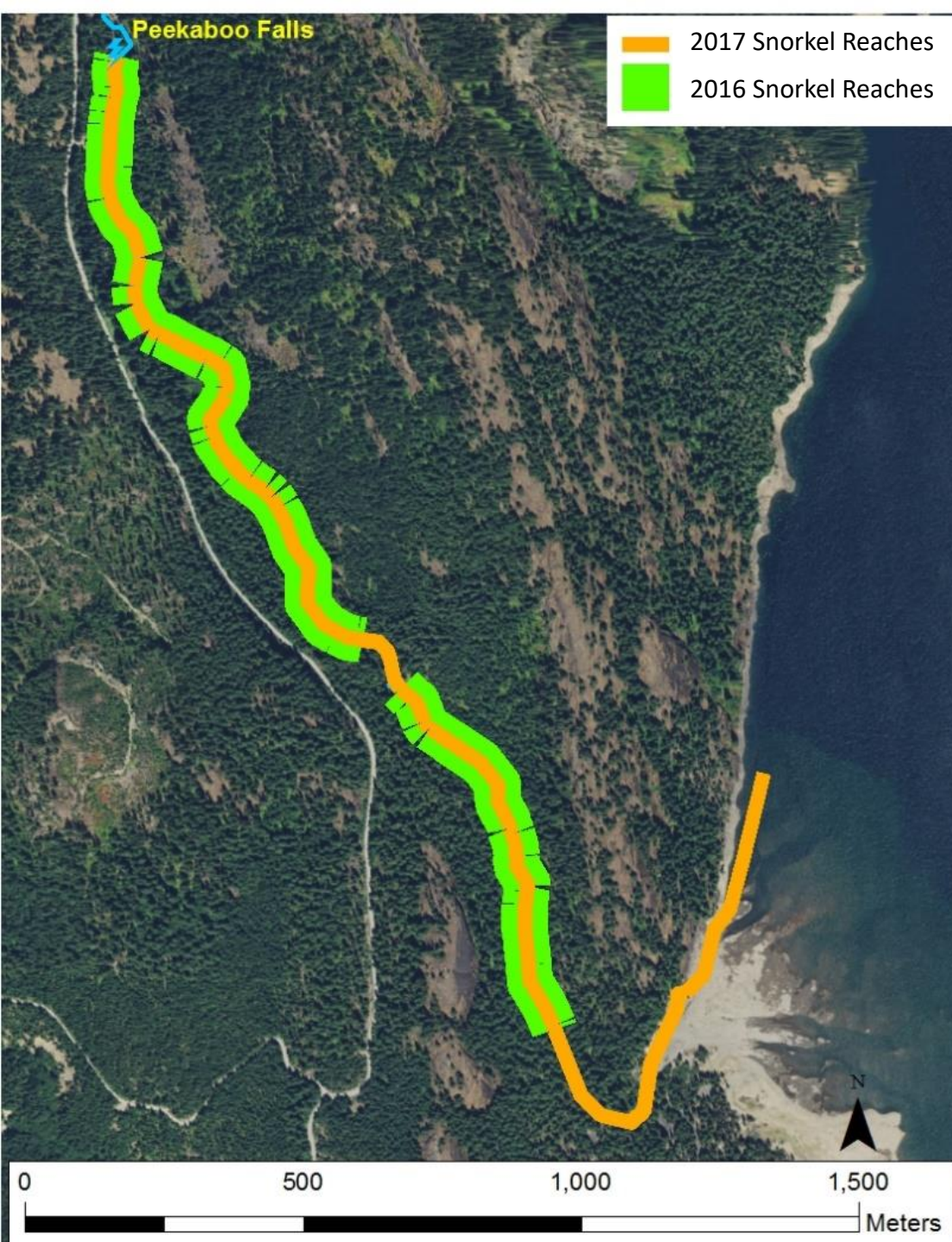
Protection Population
Lower priority, Protect existing conditions

NEW THREAT: KDRPP

Previous Analysis

- Hansen et al studied lake conditions. 2015 (draft)
 - “bull trout are not limited by foraging opportunities in Kachess”, and
 - Kachess “could support a higher population size of adult bull trout”, even with increased reservoir draw-down





Box Canyon Night Snorkel Surveys

- Besides traditional snorkeling, also included observers on both banks to observe YOY in the stream margins
- 5 people typically, 4 people minimum

Box Canyon Night Snorkel



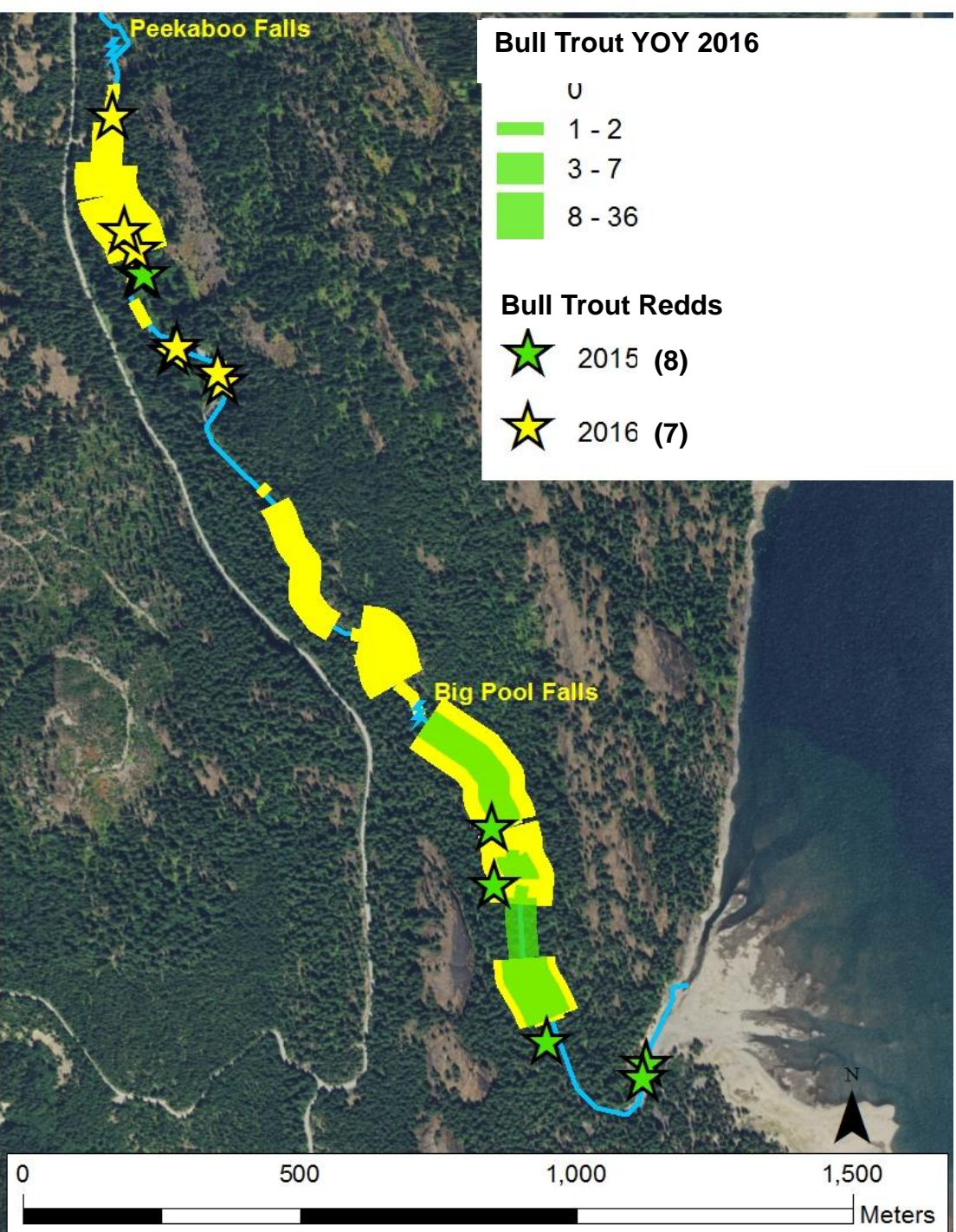


Box Canyon Habitat Survey 2016

- Slow/Fast Channel Units
- BankFull Width
- Wetted Width
- Substrate
- Pools
- Instream Large Woody Habitat

Big Pool Falls

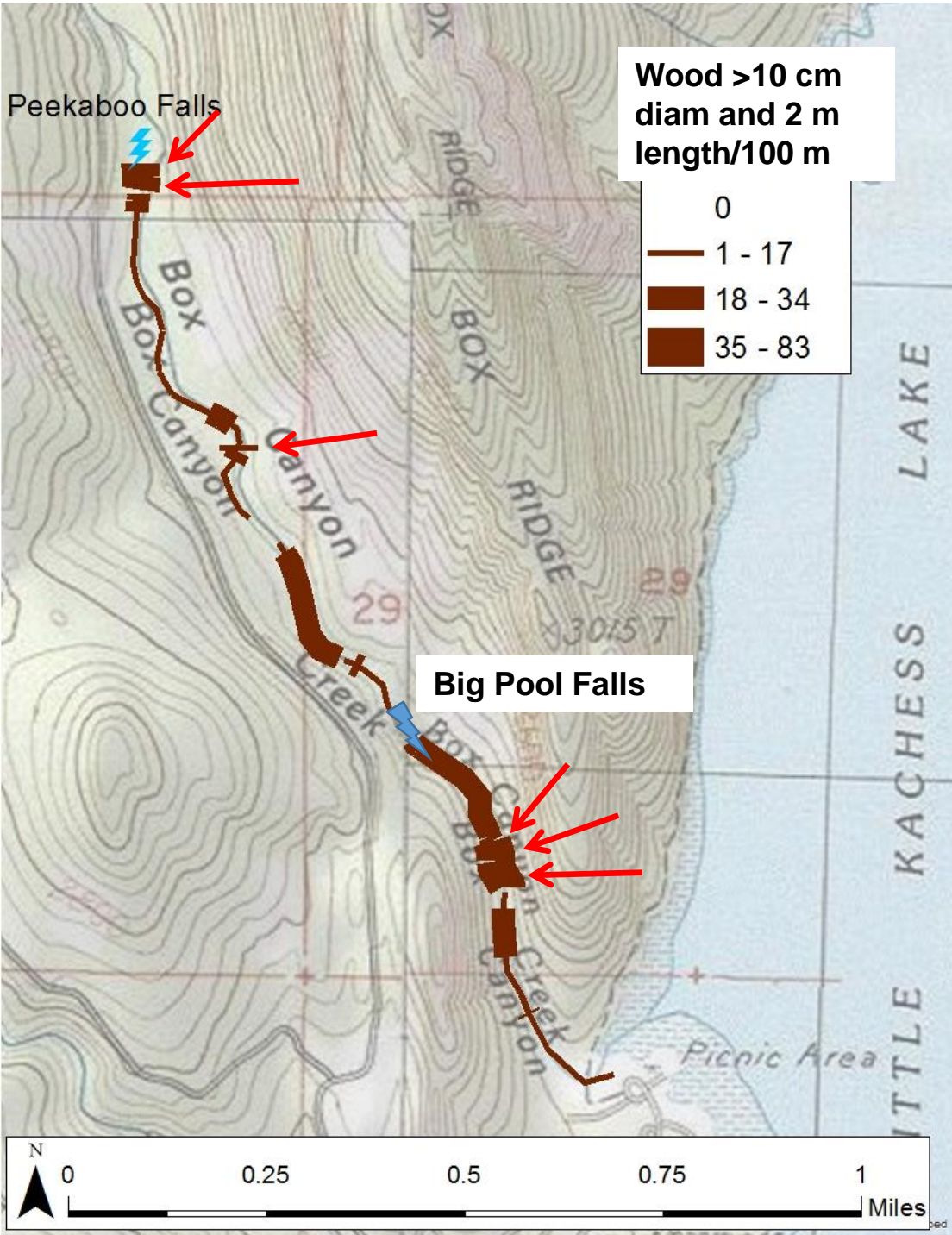




Despite very different redd distributions, many YOY found below Big Pool Falls

YOY forced downstream by flow events

Big pool falls keeps them from utilizing upstream habitat



Only 6% of habitat meets target wood load

- Limited velocity refuge
- Limited predator avoidance
- Limited nutrient input

Less wood in upper reach where 68% of redds created ('96,'07,'10,'13,'15,'16,'17)

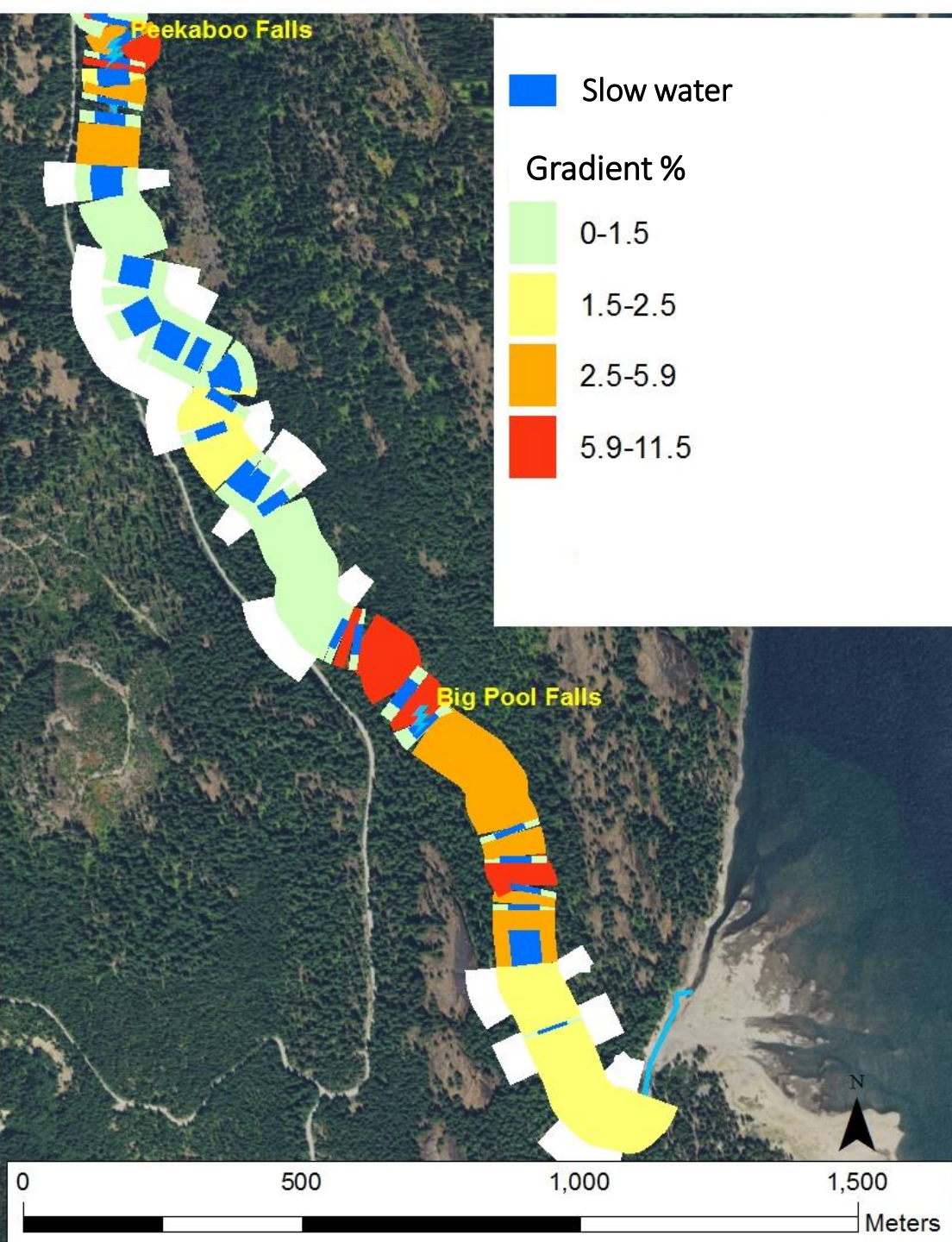
Less wood where most juveniles emerge



Action: Add Wood

Placement Areas Based on
Many Factors

- Slow water
- Lower gradient
- Low wood load
- YOY distribution
- Redd distribution
- Avoid creating upstream passage barriers
- Presence of natural anchors to maintain wood position
- Equipment access

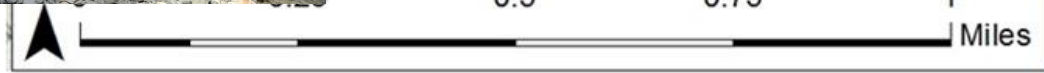


- Slow water
- Lower gradient

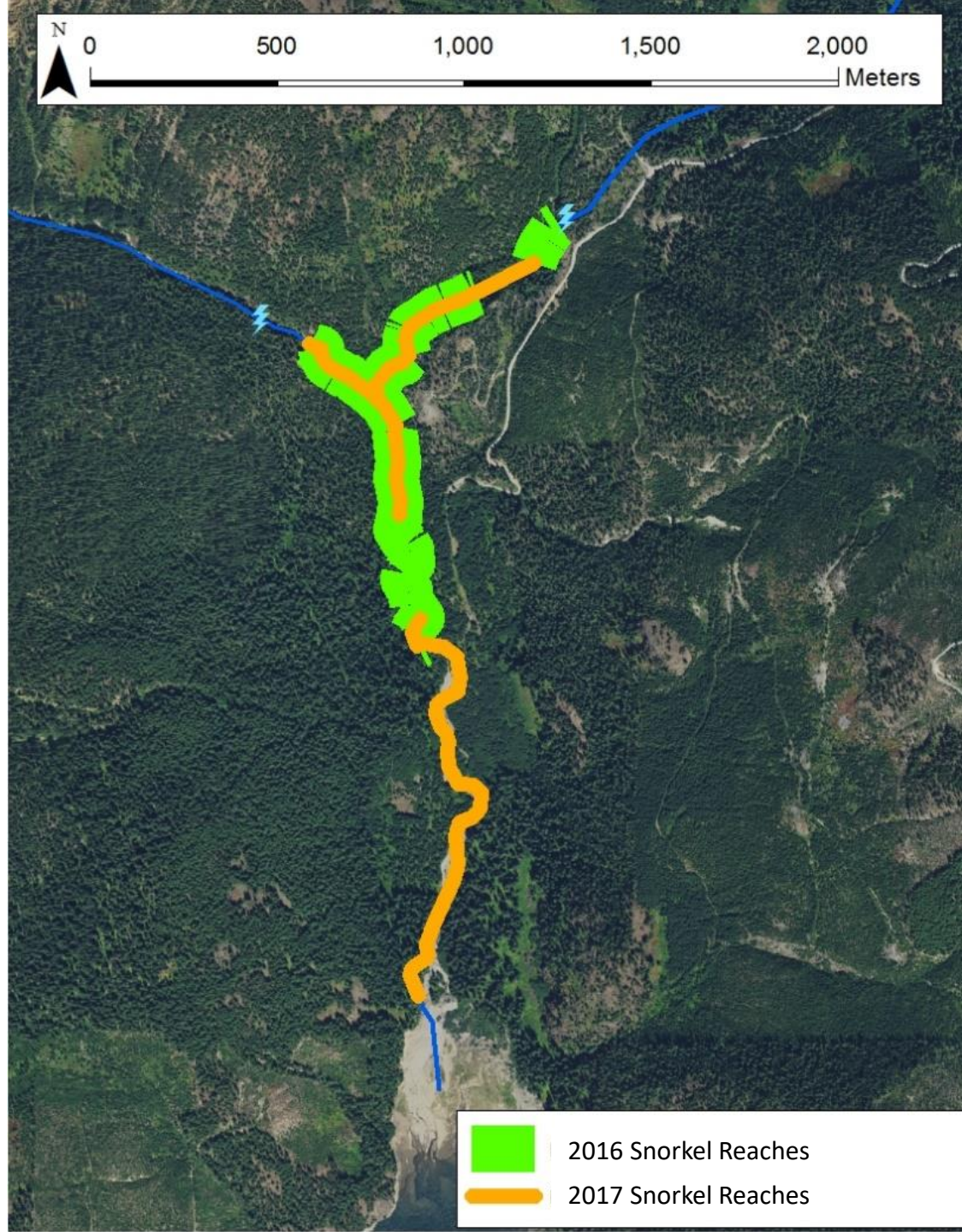
- Data will also inform bull trout translocation/supplementation efforts

Box Canyon Large Wood Replenishment Project #18-1425

- Deliverables
 - Planning, Design & Permitting
 - Partners – KCT, USFWS, USFS, WDFW, YN
 - Procurement & Staging of ~ 360 Large Wood Pieces
 - Potential Sources – TNC, USFS, Suncadia
 - Helicopter Placement in Box Canyon
- Estimated Construction – August 2019
- Available Funding = \$411,349
 - \$331,349 – YBIP/BTEP
 - \$80,000 – USFWS

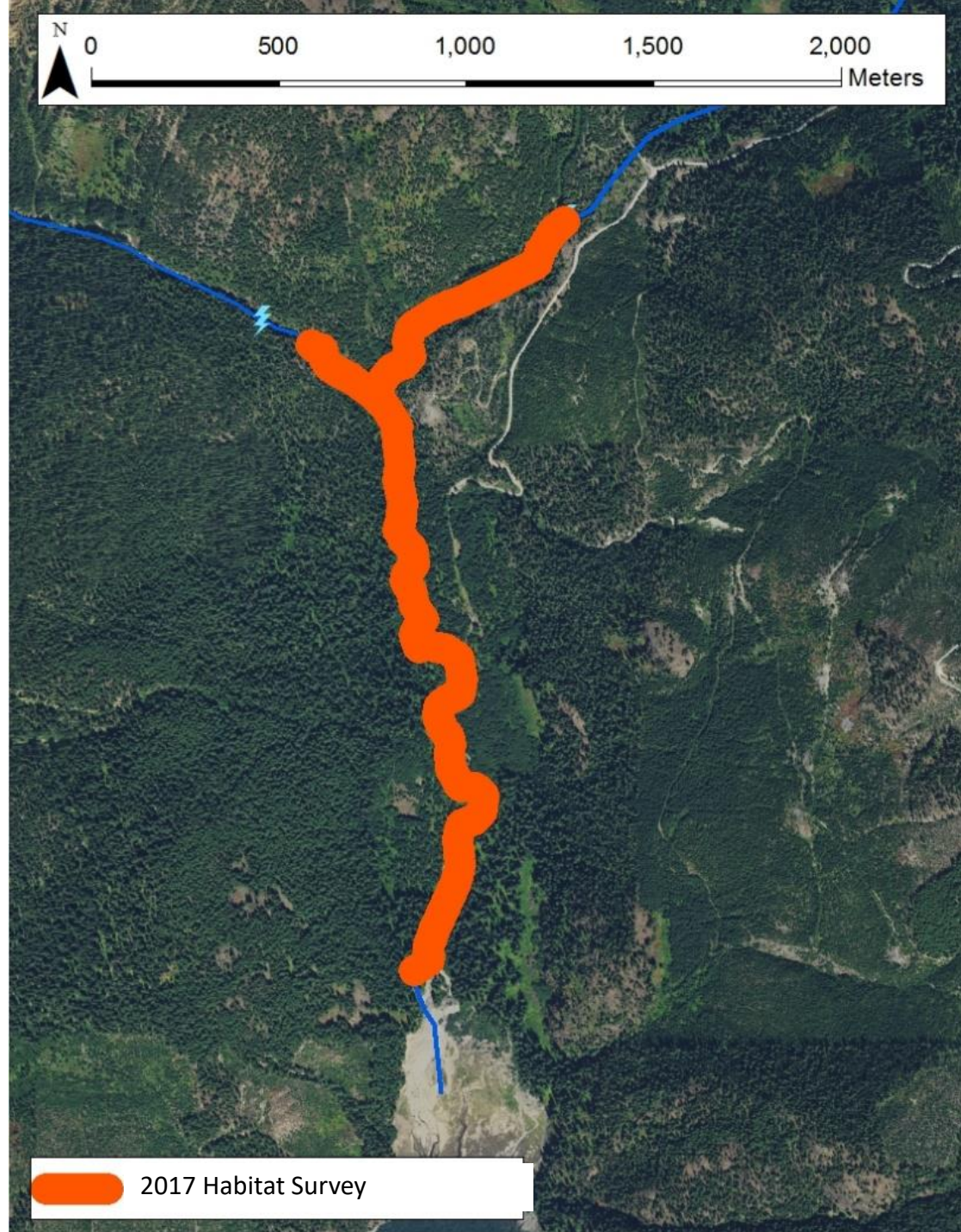


Kachess Night Snorkel Surveys



Kachess Habitat Survey 2017

- Slow/Fast Channel Units
- BankFull Width
- Wetted Width
- Substrate
- Pools
- Instream Large Woody Habitat (**USFS**)
- Mouth to confluence with Mineral Cr. does not meet wood targets
- Data will be used to inform the design of habitat restoration

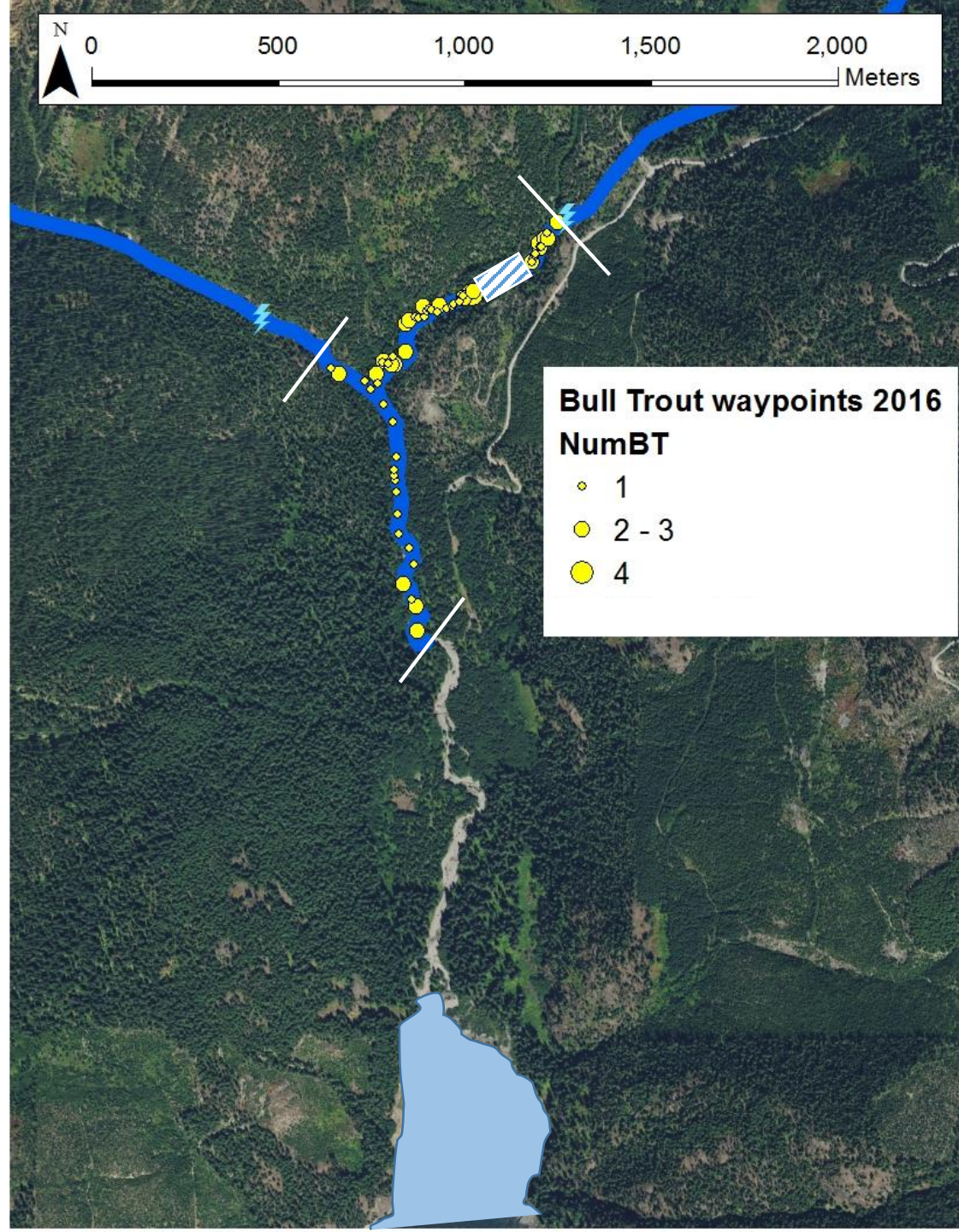


Kachess Dewatering

- All fish blocked from going to reservoir
- YOY not moving upstream to perennially-flowing 1.1 miles
- No macroinvertebrate production for 0.8 miles

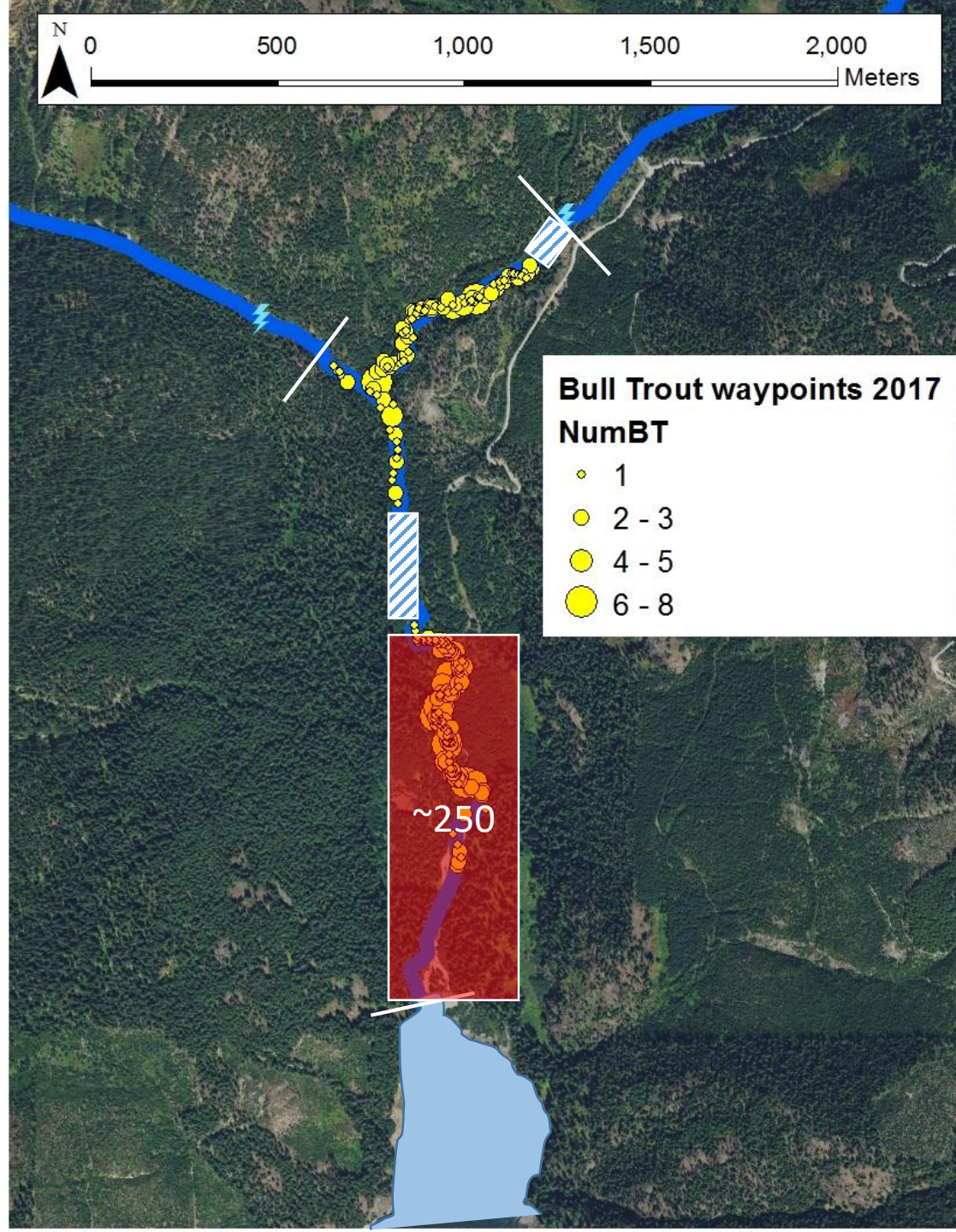


Kachess 2016 Bull Trout Distribution



Kachess 2017 Bull Trout Distribution

- Relocated 132 bull trout from dewatering area in 2017 (mostly YOY)
- Will attempt a more coordinated effort to relocate fish upstream in 2018
- Use data to inform bull trout supplementation/translocation efforts



Kachess River Assessment & Design #18-1428

- Deliverables
 - Data Inventory & Gap Analysis
 - Hydrologic Assessment
 - LiDAR, Geomorphic & Watershed Assessment
 - Hydraulic Assessment
 - Design (100%)
- Available Funding = \$276,604 YBIP/BTEP
- Goal to have permit/construction ready project by Dec. 31, 2019

2017

