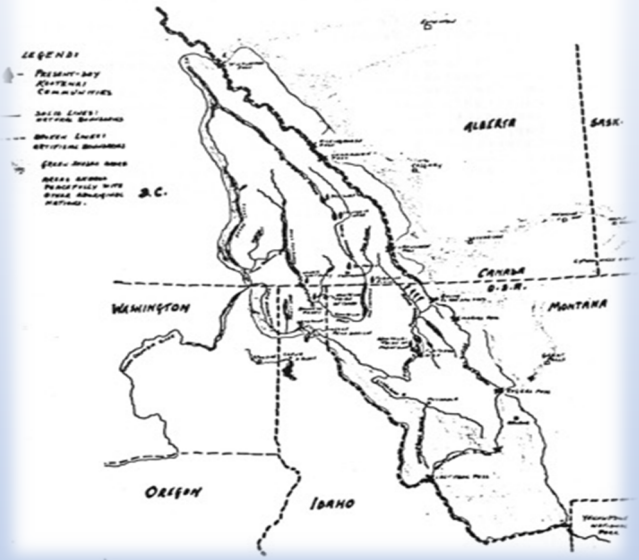
Kootenai Aboriginal Territory



UnNatural History of Kootenai Valley

Historical Cottonwood Galleries: Early 1900s = 60,000 - 100,000 board feet processed daily

Current Altered Landscape:

Since 1890's:
- 60,000 acres of wetlands destroyed.
- Entire Riparian Forest destroyed.

Since 1974:
- 100,000+ acres of floodplain totally disconnected.

Decline of Native Fish & Wildlife

Kootenai River White Sturgeon ENDANGERED

- ✓ Very low Sturgeon natural recruitment since 1960's.
- ✓ Federally endangered 1994 (USA) and 2006 (Canada).
- ✓ ~ 1,700 (wild) Adult White Sturgeon remain.

Burbot FUNCTIONALLY EXTIRPATED

- ✓ Burbot were functionally extirpated by 1990's.
- ✓ There were not enough Burbot to support a hatchery program, nor to use for research.

Bull Trout THREATENED

West Slope Cutthroat PETITIONED

South Arm Kokanee FUNCTIONALLY EXTIRPATED

Grizzly Bear THREATENED

Canada Lynx THREATENED

Woodland Caribou EXTIRPATED IN USA

KTOI Picture

Habitats are **DISCONNECTED**

Cushing (1969): Match-Mismatch Hypothesis

…….implies that variability in timing of plankton production leads to variability in larval mortality and hence possibly year class recruitment.

Every aspect is **MISMATCHED**

Declining Native Fish Characteristics

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West Slope Cutthroat PETITIONED

South Arm Kokanee FUNCTIONALLY EXTIRPATED

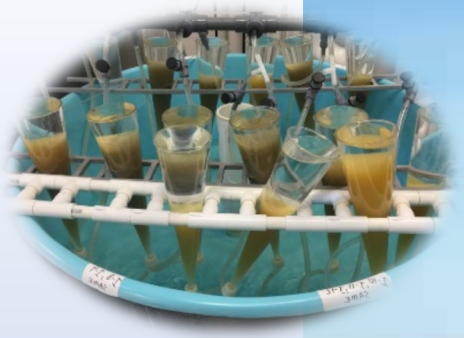
ALL spawn, hatch, and/or emerge in Late Winter/Spring/Early Summer into a disconnected, altered ecosystem.

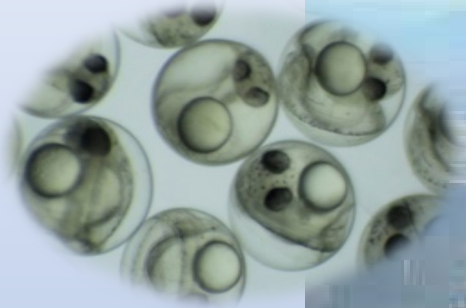
- **Cold**
- **Unproductive = Ultra-oligotrophic**

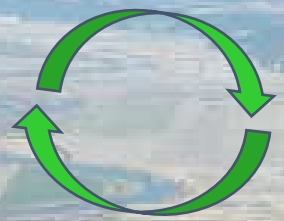
"Sterile Half-Pipe"

Future Habitat Solutions

- Targeted
- Engineered







KTOI is now the “Match-Maker”;

We restore habitat; then place fish life-stages in the proper habitat at the proper time.

Hatchery Sturgeon and Burbot Release Sites throughout the Lower Kootenai Ecosystem

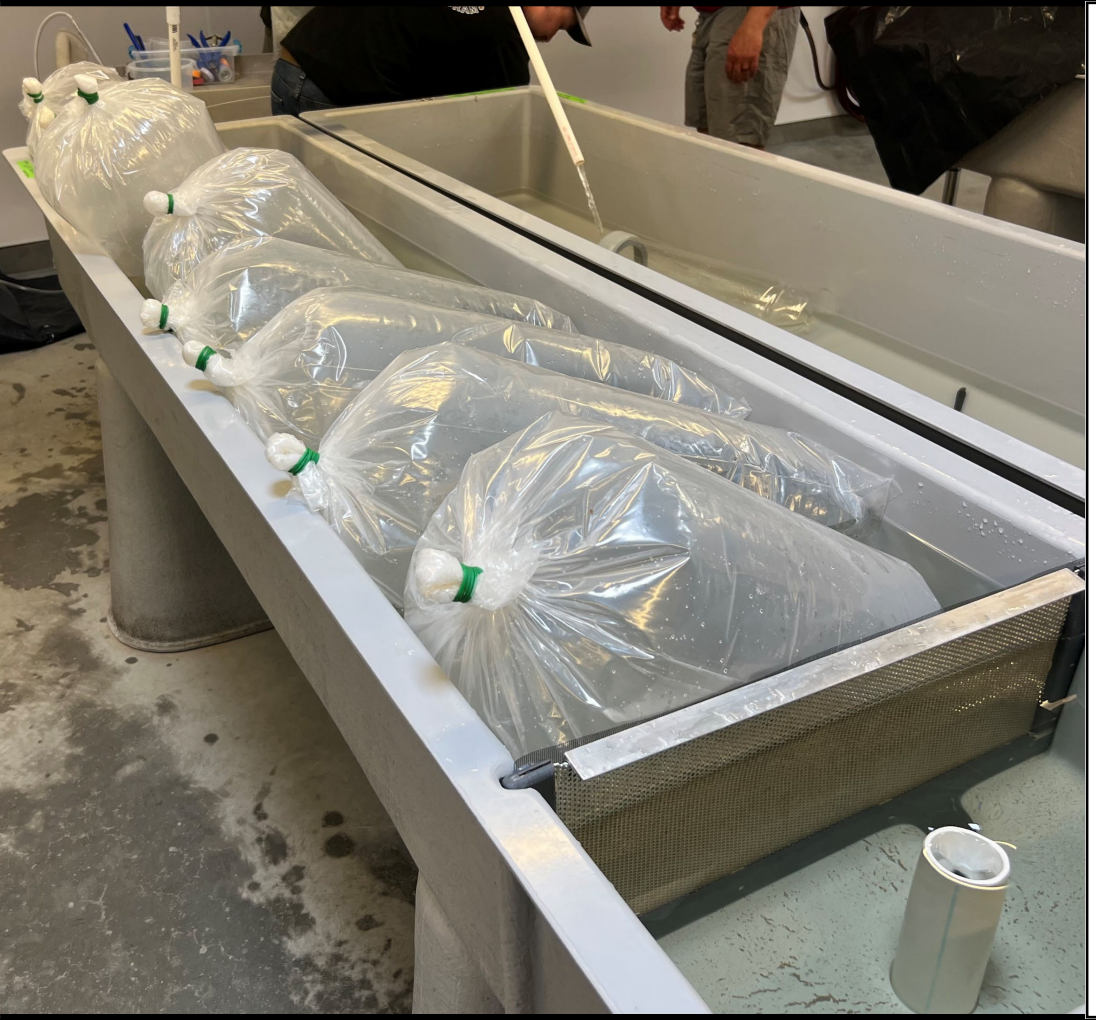
Example of Lower Tributary Release Sites

Habitat Project – Floodplain Reconnect

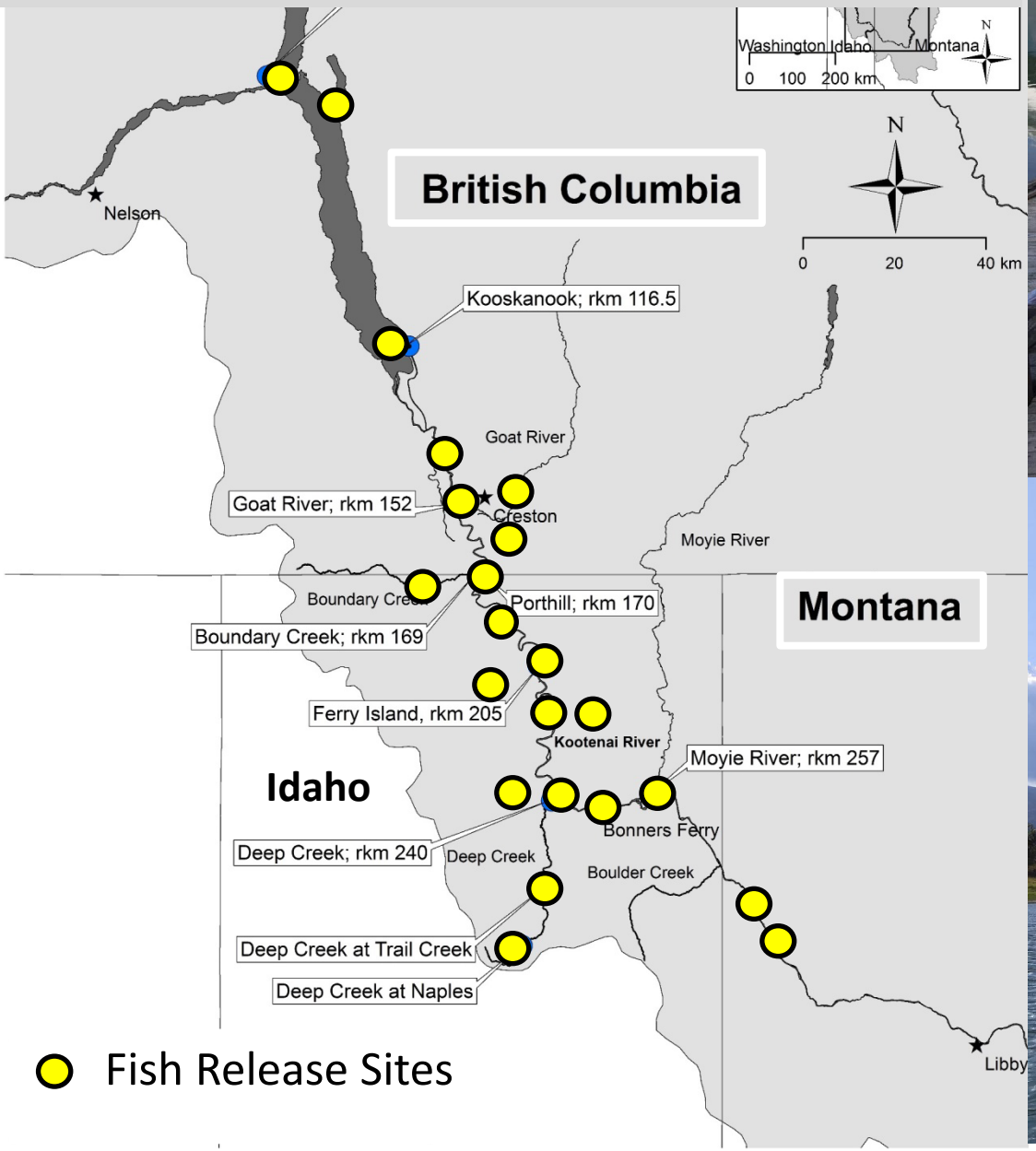
Dan Aitken, KTOI Sturgeon Technician

KTOI Staff Preparing Female

Mark Elliston, KTOI Biologist



Learning from the Early Life Releases, helps us help the ecosystem.



KTOI Staff Releasing Burbot

Habitat Restoration – “No Water” (2021) vs. “Water” on the Landscape (2022)

- ✓ **Water Management dictates Water Level/Elevation;**
- ✓ **Water level/Elevation dictates reconnection frequency & duration.**
- ✓ **Magnitude of implementing this strategy dictates meeting ecosystem restoration goals!**

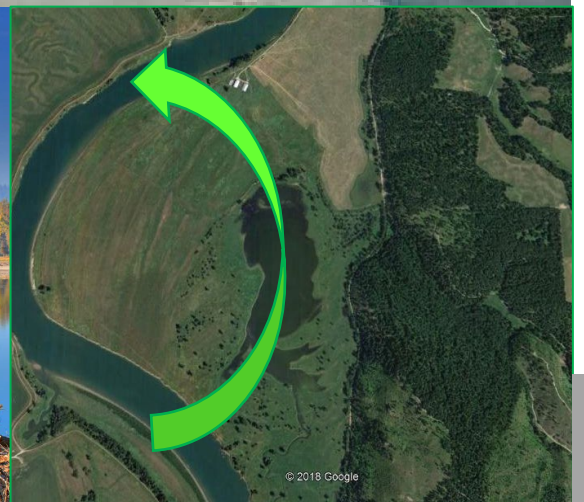
Photo provided by Shawn Young, KTOI F&W Dept,
Kootenai Tribe of Idaho Floodplain Reconnection Project

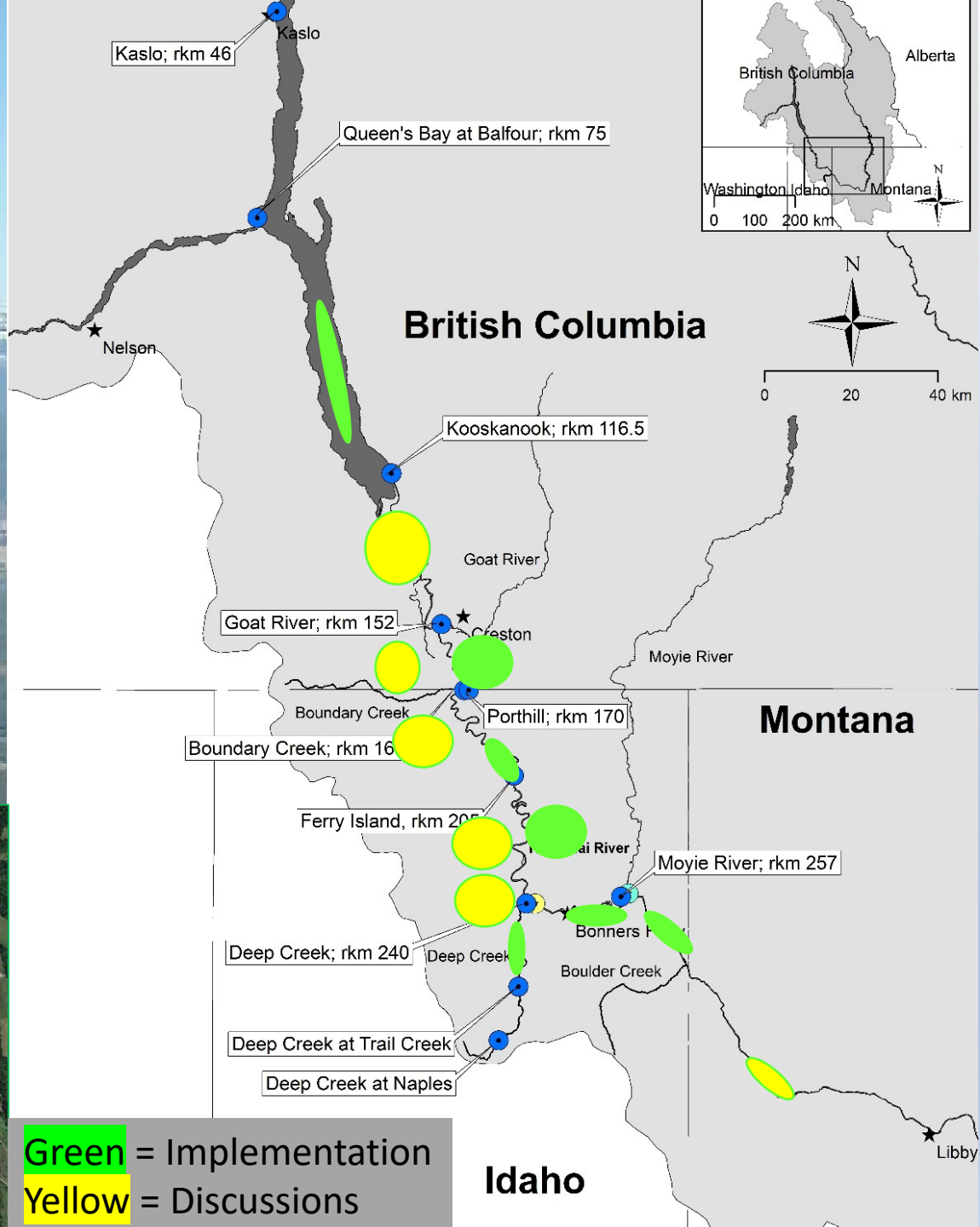
Deep Creek – Idaho Dept of Lands

Since 1890's……

- > 100,000 acres of floodplain disconnected.
- 60,000 acres of wetlands converted.

Habitat Restoration Programs / Targeted Actions taking place to reverse this condition.





Coordination

- ✓ Libby Dam Discharge
- ✓ Spring Freshets
- ✓ Ecosystem Function Flows
- ✓ Sturgeon Spawning Flows
- ✓ Kootenay Lake Storage / Management

*** With Habitat Restoration Engineering

Changes needed for the Kootenai River Ecosystem

"Continuous coordination; not just sometimes"

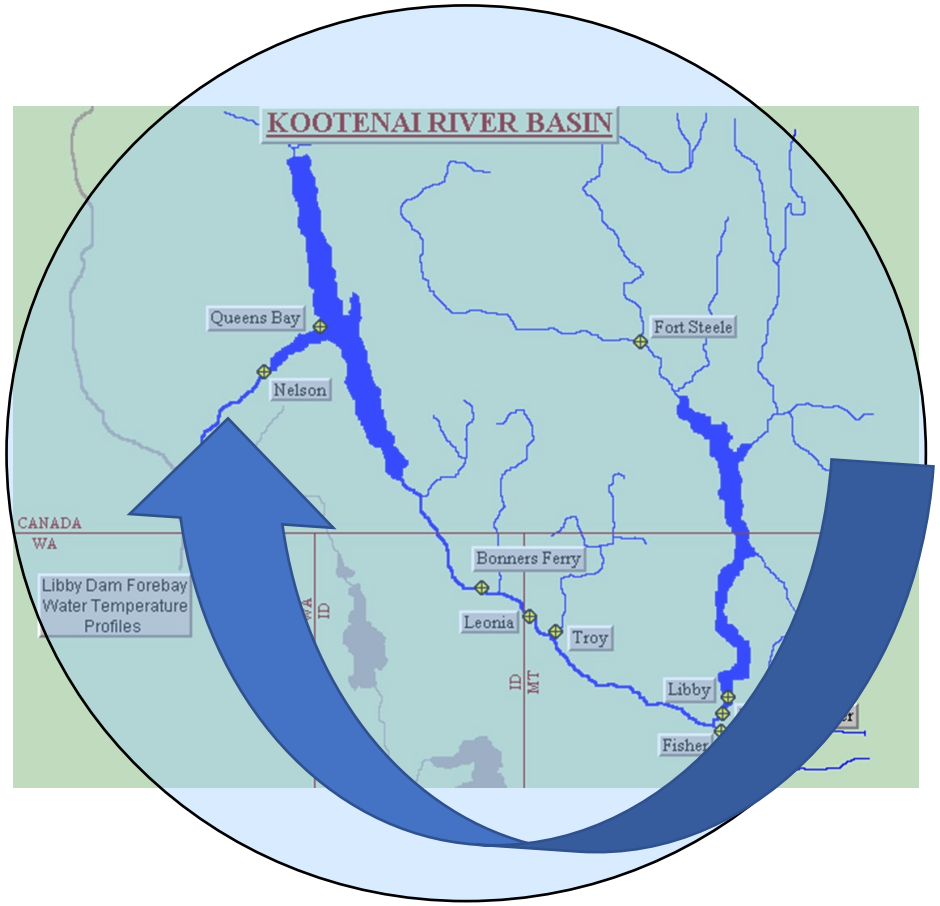
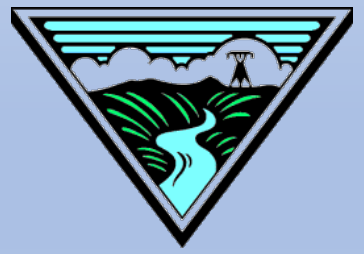


Photo provided by Norm Allard, Lower Kootenay Band Biologist;
Photo of Lower Kootenay Band Restoration Project

Collaboration!

We thank Bonneville Power Administration &
Northwest Power and Conservation Council



Committment!

QUESTIONS, COMMENTS, IDEAS? Are you onboard?

photo credit: Genny Hoyle, KTOI Environmental Dept Director