Restoring the Kootenai: A Tribal Approach to Restoration of a Large River in Idaho

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River Restoration Northwest Symposium 2016
Kootenai River Subbasin

- 9 million acres
- 485 miles long
- Ktunaxa Nation
- 2 Countries
- 2 States, 1 Province
- Endangered Species
- Hydropower
- Resource based economy
Prior to European settlement the Kootenai River watershed, with its riparian forest and wetland complexes, was one of the most productive in the Pacific Northwest.
The Kootenai Tribe
“The Kutenai were a Tribe untouched by the baneful influence of the aggressive civilization of the West. They had no reservation....they received no assistance from the Government...they lived entirely upon the products of their rivers, lakes, and forests...
Cottonwood Galleries

Early 1900’s - 60,000 to 100,000 board feet processed daily
Examples of Limiting Factors

- Altered flow and thermal regime
- Altered sediment transport, deposition, scour
- Nutrients trapped
- Loss of side channel, wetlands, and floodplains & connectivity
- River response to altered hydraulics (morphology, depth, velocity)
- Elimination & modification of critical fish & wildlife habitats
- Bank erosion & land loss
Decline of native species

Kootenai River
- White Sturgeon **ENDANGERED**

South Arm Kokanee
**FUNCTIONALLY EXTINCT**

Bull Trout
**THREATENED**

Burbot
**PETITIONED**

Interior Redband Trout
**SENSITIVE**

West Slope Cutthroat
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Kootenai Tribal elders pass down the history of the beginning of time, which tells that the Kootenai people were created by Quilxka Nupika, the supreme being, and placed on earth to keep the Creator-Spirit’s Covenant—to guard and keep the land forever.

The Kootenais have never lost sight of their original purpose as guardians of the land.
Kootenai River
White Sturgeon

- Separated from Columbia River population 10,000 years ago
- Vital to the Kootenai Tribe
- Adapted to specific local headwater conditions
- Virtually no natural recruitment for last 50 years
- Listed as Endangered in 1994
Kootenai River Burbot

- Freshwater Cod
- Circumpolar in distribution
- Spawn in winter under ice in spawning balls
- Severe population decline
- <50 fish estimated in Lower Kootenai by late 1990's
- Community based conservation strategy developed in 2005
The approach: the Tribe’s view

- Holistic
- Science-based
- Collaborative
- Inclusive of social and economic values
- Consistent with Tribal cultural values
- Adaptively managed
The approach: Tribal initiatives

HISTORICAL ECOSYSTEM CHANGES
- Beaver trapping
- Conversion of floodplain
- Diking
- Logging
- Mining
- Infrastructure development
- Non-native species
- Commercial harvest
- Libby Dam

TRIBAL RESTORATION INITIATIVES
- *Kootenai River habitat restoration program*
- Sturgeon and Burbot conservation aquaculture
- Nutrient restoration & biomonitoring
- Wetlands & riparian conservation strategy
- Critical uncertainties research
- Operational loss assessment
- Wildlife mitigation
What is the Kootenai River Habitat Restoration Program?

- Multi-year habitat restoration program implemented in Idaho portion of Kootenai River
- Projects incorporate restoration treatments designed to restore or enhance habitat and food web needed by Kootenai sturgeon & other native fish
- Individual projects work together to provide habitat attributes
- Compliments other efforts to restore fish and wildlife populations and their habitats
1. Overarching framework for large-scale restoration

2. Focus on dynamic river processes & ecosystem functions instead of prescriptive approach to single life stage of one species restoration actions

3. Synthesis of available data & analysis

4. Goals to address limiting factors related to:
   – Morphology
   – Riparian Vegetation
   – Aquatic Habitat
   – River Management & stewardship

5. Toolbox of restoration treatments to address limiting factors
Oversight, review & coordination

From concept to construction

<table>
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<th>Tribal Council Oversight</th>
<th>Policy Team</th>
<th>Design Team</th>
<th>Co-Manager &amp; Agency Review Team</th>
<th>Peer Reviewer Advisory Team (Multi-disciplinary)</th>
<th>Project Management Team</th>
<th>Modeling Subcommittee</th>
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2011 to 2016 KRHRP Projects

Straight Reach 2016
Bonners Ferry Islands 2015 - 2016
North Side Channels 2012
Upper Meander 2012
1A Extension 2013
Substrate Pilot Project 2014 (In Meander Reach downstream at Myrtle and Shorty's Island)
Middle Meander 2013
Phase 1B 2011
Phase 1A 2011
Primary Biological Objectives

• Increase the number of *large deep pools* to aid/encourage sturgeon to migrate upstream to higher quality spawning habitat

• Increase the area of *vegetated floodplain surfaces* that provide food web support

• Add *rocky substrate* to support Kootenai sturgeon egg attachment & early life stage survival (Straight Reach)

• Many additional biological benefits to other species including burbot & salmonids
Major Types of Treatments
Implemented 2011-2015

1. Pool forming structures & pool creation or enhancement
2. In river & bank structures
3. Side channel reconnection, floodplain and island creation/enhancement
4. Riparian enhancement
5. Spawning substrate
A sturgeon “pool ladder”

• Development of a “pool ladder” to encourage upstream sturgeon migration (and habitat for other native species)
Kootenai River Habitat Restoration Program

• Addresses Tribal restoration objectives
  — Restore lost subsistence resources
  — Treaty and Trust obligations of Federal government

• Addresses Action Agency requirements for operation of Libby Dam & USFWS Kootenai Sturgeon Recovery Plan objectives (Endangered Species Act)

• Community based Kootenai Valley Resource Initiatives i.e., Burbot Conservation Strategy and Wetland & Riparian Conservation Strategy

• Consistent with NPCC Fish & Wildlife Program (Northwest Power Act) & Kootenai Subbasin Plan
As we celebrate our Centennial, our century of survival, we look to the future...We have this prayer, this hope for all of us; that one hundred years from now, we will celebrate another Centennial together. We will celebrate a century of mutual respect and openness; a century in which our communities work together, with one heart, one mind, to achieve our mutual goals. That will be true success for all of us.