Kootenai Tribe of Idaho's
Kootenai River Habitat Restoration Program

Overview

The Kootenai River Habitat Restoration Program (KRHRP) is a multi-year, ecosystem-based habitat restoration program to restore habitat conditions that support all life stages of endangered Kootenai River white sturgeon, burbot and other native fish. Under this program, the Kootenai Tribe of Idaho building a number of habitat restoration projects in the Idaho portion of the Kootenai River.

In 2009 the Tribe completed the *Kootenai River Habitat Restoration Program Master Plan.*

The *Master Plan* identified reach-specific habitat conditions that limited the success of Kootenai sturgeon, burbot and other native fish, and provided restoration strategies and treatments to address those limiting factors. All of the KRHRP projects are designed to work with existing land uses and Libby Dam operations.

From 2011 through 2016 the Kootenai Tribe has constructed nine individual KRHRP projects. Additional projects are planned for construction in 2017 and beyond.

Projects are identified, prioritized and designed in collaboration with multiple agency partners and a multi-disciplinary team of independent experts.

SInce the majority of land along the Kootenai River is privately owned, the cooperation of private landowners is critical to the success of the KRHRP.

The KRHRP includes targeted geomorphology and vegetation monitoring for each individual project.

The Kootenai Tribe, Idaho Department of Fish and Game, and graduate students from the University of Idaho, are also working together to learn about the fish response to the habitat restoration work.

The results of the combined monitoring efforts are used to help refine the design of each new project.

Program Goals

Morphology: Restore river and floodplain ecological processes within the constraints of Libby Dam operations and current land uses.

Aquatic: Restore conditions that support all life stages of native fish and help maintain sustainable populations.

Riparian vegetation: Create streambank and floodplain conditions that help plant communities develop

River stewardship: Support and create opportunities for river stewardship.

Need for Program

Historical diking, agricultural conversation, infrastructure development, and construction and operations of Libby Dam have changed the river morphology, upland and riparian vegetation, and aquatic habitat.

These changes limit the ability of many native fish populations, including the endangered Kootenai River white sturgeon, to survive and thrive in the Kootenai River.

Limiting Factors

Altered flow
Spring flows are 50% less than pre-dam flows, but winter flows have increased 300%.

Altered sediment transport and deposition
Limited floodplain development.

River response to altered hydraulics
Morphological changes, decreased depth, velocity changes.

Poor quality spawning habitat
Lack of rocky substrate on the river bottom where sturgeon currently spawn.

Altered temperature
Water is warmer in winter, cooler in summer.

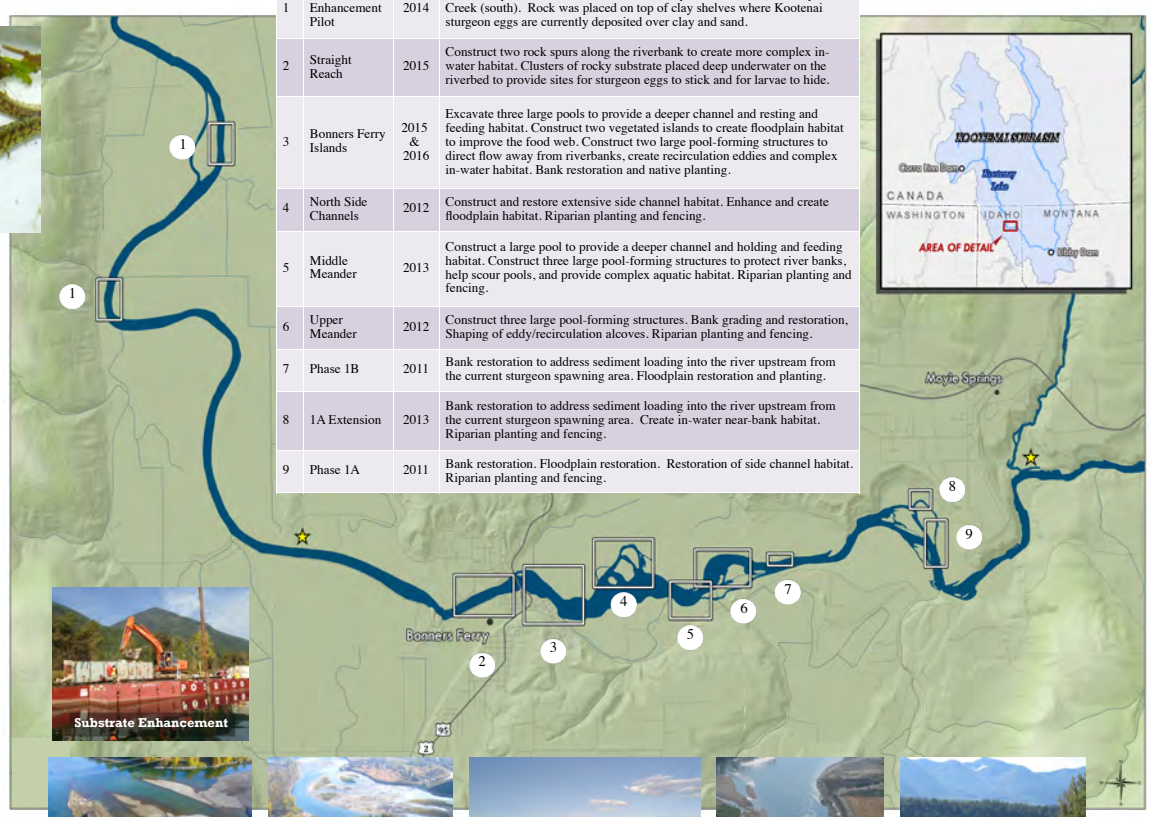
Loss of nutrients
Nutrients are trapped behind Libby Dam. Floodplains were eliminated. Reduced primary productivity.

Loss of side channels, wetlands, and flood-plain & connection
Decreased habitat and limited food web.

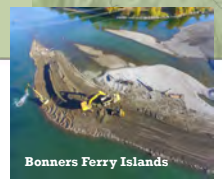
Habitat loss and simplification
Lack of complex and diverse aquatic and riparian habitats.

Kootenai River Habitat Restoration Program Projects

#	Project Name	Year	Project Snapshot
1	Substrate Enhancement Pilot	2014	Place rocky substrate at two locations, Shorty's Island (north) and Myrtle Creek (south). Rock was placed on top of clay shelves where Kootenai sturgeon eggs are currently deposited over clay and sand.
2	Straight Reach	2015	Construct two rock spurs along the riverbank to create more complex in-water habitat. Clusters of rocky substrate placed deep underwater on the riverbed to provide sites for sturgeon eggs to stick and for larvae to hide.
3	Bonners Ferry Islands	2015 & 2016	Excavate three large pools to provide a deeper channel and resting and feeding habitat. Construct two vegetated islands to create floodplain habitat to improve the food web. Construct two large pool-forming structures to direct flow away from riverbanks, create recirculation eddies and complex in-water habitat. Bank restoration and native planting.
4	North Side Channels	2012	Construct and restore extensive side channel habitat. Enhance and create floodplain habitat. Riparian planting and fencing.
5	Middle Meander	2013	Construct a large pool to provide a deeper channel and holding and feeding habitat. Construct three large pool-forming structures to protect river banks, help scour pools, and provide complex aquatic habitat. Riparian planting and fencing.
6	Upper Meander	2012	Construct three large pool-forming structures. Bank grading and restoration, Shaping of eddy/recirculation alcoves. Riparian planting and fencing.
7	Phase 1B	2011	Bank restoration to address sediment loading into the river upstream from the current sturgeon spawning area. Floodplain restoration and planting.
8	1A Extension	2013	Bank restoration to address sediment loading into the river upstream from the current sturgeon spawning area. Create in-water near-bank habitat. Riparian planting and fencing.
9	Phase 1A	2011	Bank restoration. Floodplain restoration. Restoration of side channel habitat. Riparian planting and fencing.

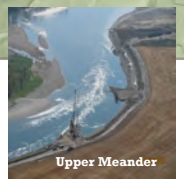


Substrate Enhancement


Bonners Ferry Islands

North Side Channels

Middle Meander


Upper Meander

Phase 1A

Information about the Kootenai Tribe's restoration programs: www.restoringthekootenai.org

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