Kootenai River Habitat Restoration Program

Kootenai Tribe of Idaho - July 2015

The Kootenai River Habitat Restoration Program is a large-scale, ecosystem-based habitat restoration program to restore and maintain Kootenai River habitat conditions that support all life stages of Endangered Kootenai River white sturgeon and other native fish.

The program is being implemented within a 55-mile reach of the Kootenai River in Idaho, over a period of 7 to 10 years. Implementation of the program, in combination with other Tribal and agency programs, will help to restore native fish populations and sustain the Tribal and local culture and economy. The Kootenai River Habitat Restoration Program is being implemented in collaboration with multiple agency partners. Funding for the Program is primarily from the Bonneville Power Administration through the Northwest Power and Conservation Council’s Fish and Wildlife Program.

In July 2009 the Kootenai Tribe of Idaho completed the Kootenai River Habitat Restoration Program Master Plan, which outlined a framework for implementing the ecosystem-based Kootenai River Habitat Restoration Program.

Program Goals

1. Restore physical habitat by reducing the negative effects to river and floodplain ecological processes caused by river response to the altered landscape.

2. Restore native vegetation by establishing stream bank and floodplain conditions that sustain plant community development processes.

3. Restore aquatic habitat conditions that support all life stages of native fish (including Endangered Species Act listed Kootenai River white sturgeon) and promote sustainable populations.

4. Create opportunities for river and floodplain stewardship in the community.

For more: www.restoringthekootenai.org
Kootenai River Habitat Restoration Program

The Kootenai River Habitat Restoration Program is designed to address limiting factors including river morphology, aquatic habitat, riparian habitat, and to function within existing constraints. To accomplish this, the Program will be implemented through construction of approximately 8 to 15 individual habitat restoration projects. Each project is designed to address a number of different limiting factors through a combination of treatments. The overall approach is ecosystem-based.

The individual projects are prioritized for implementation and designed in collaboration with a multi-disciplinary team including biologists, river design experts, engineers, hydrologists, geomorphologists and other technical experts. As part of the design process the Tribe has convened a Peer Reviewer Advisory Team, a Co-manager/Agency Review Team, and a Policy Team to provide critical review, analysis, and technical and policy advice. Development of each project also includes extensive coordination with local landowners and members of the local community.

The Program includes physical monitoring activities to determine the effectiveness of individual projects in achieving specific goals and objectives, and to support short-term adaptive management actions. Key agency partners, including Idaho Department of Fish & Game and Montana Fish, Wildlife & Parks, assist with biological monitoring activities to support longer-term monitoring of the biological response to the Program actions.

2011 Projects

Two projects, Phase 1A and Phase 1B, were completed in 2011. Both projects were located in the Braided Reach upstream of the town of Bonners Ferry and were located on privately owned lands. Prior to the project construction both sites had contributed sediments downstream.

The Phase 1A and 1B project actions restored 1,600 linear feet of mainstem bank and installed large wood, restored 2,800 feet of side channel, created or enhanced three side channel pools, 2,600 feet of side channel large wood, restored 8.5 acres of floodplain and wetland, placed 5,400 plants, and installed 5,000 linear feet of riparian buffer fencing. Construction of the two projects was completed during the short in-water work window from August to November.

The completed 2011 projects contributed to ecosystem restoration by restoring valuable side channel habitat for fish, restoring and enhancing floodplain and riparian habitat, restoring the food web, and reducing sediment loading to the river. In addition, the projects contributed to community needs by stabilizing eroding banks, thus preventing ongoing land loss.

Photos right top to bottom: 2011 project immediately after construction was completed, during construction, microtopography in 2012.
Kootenai River Habitat Restoration Program

2012 Projects

Two projects, the North Side Channels project and Upper Meander project, were completed in 2012. Both are located in the Braided Reach upstream of Bonners Ferry.

The North Side Channel project restored existing side channels and enhanced aquatic, floodplain and riparian habitat. The project is also designed to enhance the food web.

The pre-project Upper Meander site had some of the most extensive erosion and land loss found in the Braided Reaches. This project included construction of innovative structures (“sturgeon fins”) that redirected flow away from the banks, while simultaneously creating desirable aquatic habitat in the form of recirculating eddies and pools that provide a range of complex hydraulic conditions.

The deep pools created through the Upper Meander project will be complemented by pools created through implementation of additional projects in 2013, 2014 and 2015, effectively creating a ladder of pools to support sturgeon migration and holding through the Straight and Braided Reaches of the Kootenai River.

Photos top to bottom: Upper Meander “sturgeon fin” construction, Upper Meander bank restoration, North Side Channels after project photo.
2015-2016 Projects

The Tribe has completed designs for two projects slated for construction in 2015 and 2016.

The Bonners Ferry Islands project will be built over 2 construction seasons in 2015 and 2016 and will include excavation of pools and construction of vegetated floodplain islands on top of existing gravel bars in the river channel. These islands will help enhance the food web, create hydraulic complexity, and provide hiding and resting areas for Kootenai sturgeon and other native fish. The Bonners Ferry Island site is located just upstream from Bonners Ferry.

Another project located in the Straight Reach adjacent to the town of Bonners Ferry will be built in 2016 and incorporates in-stream structures that create deep pools to support sturgeon migration and resting, substrate enhancement, and riparian and floodplain habitat enhancement.

Out-Year Projects

The Tribe is also developing additional out-year projects in the Braided and Meander reaches. Prioritization, concept development, review, and design for these projects will occur in 2015-2017.

2013 Projects

In 2013 the Tribe completed construction of two additional projects, 1A Extension and the Middle Meander project.

The 1A Extension project expanded on bank stabilization and riparian restoration work done in 2011. The Middle Meander project incorporated excavation of a large deep pool, which contributed to the braided reach “pool ladder”. Project treatments also enhanced habitat complexity in the Braided reach.

2014 Projects

In the summer and fall of 2014, the Tribe constructed a substrate enhancement pilot project in the Meander Reach near Shorty’s Island.

This pilot project will test the sustainability and effectiveness of placing rock substrate over existing clay surfaces in a reach of the river where wild Kootenai sturgeon currently spawn. At present the sturgeon are successfully spawning in this reach over clay and sand. This project is designed to address the first known bottleneck to Kootenai sturgeon recruitment.