

Kootenai River Habitat Restoration Program

Lower Meander Project Overview



Kootenai Tribe of Idaho
 P.O. Box 1269, Bonners Ferry, Idaho

Project Summary

The Lower Meander Project includes excavation of two deep pools (20 to 30 feet deep depending on flows), enhancement of six islands (approximately 26.5 acres), restoration and stabilization of approximately 4,700 linear feet of stream bank, construction of three pool-forming structures, installation of approximately 15 large wood structures in a channel that runs between the islands, and planting of native vegetation and seeds. Excavation of the deep pools will provide places for Kootenai River white sturgeon, burbot, and other native fish to rest and feed. Pools are also used by sturgeon and burbot to stage before spawning. Materials excavated from the pools will be used to enhance existing islands and create floodplain surfaces. The floodplain surfaces will be constructed at elevations that can support native vegetation at existing managed river flows to create areas ecological productivity that enhance the foodweb. Streambank restoration and stabilization will create complex near-bank habitat, limit erosion, and increase riparian habitat. Streambank restoration will also include removal of existing car bodies and other debris. Pool forming structures will help to maintain pools, protect the stream banks, and create recirculation zones (eddies). Large wood structures in the channel between the islands will create hydraulic complexity and promote development of small scour pools in the side channels. Fencing, individual browse protectors, and brush bundles will be installed to protect plantings from wildlife browse. Project construction will occur in the summer and fall of 2017 and 2018.

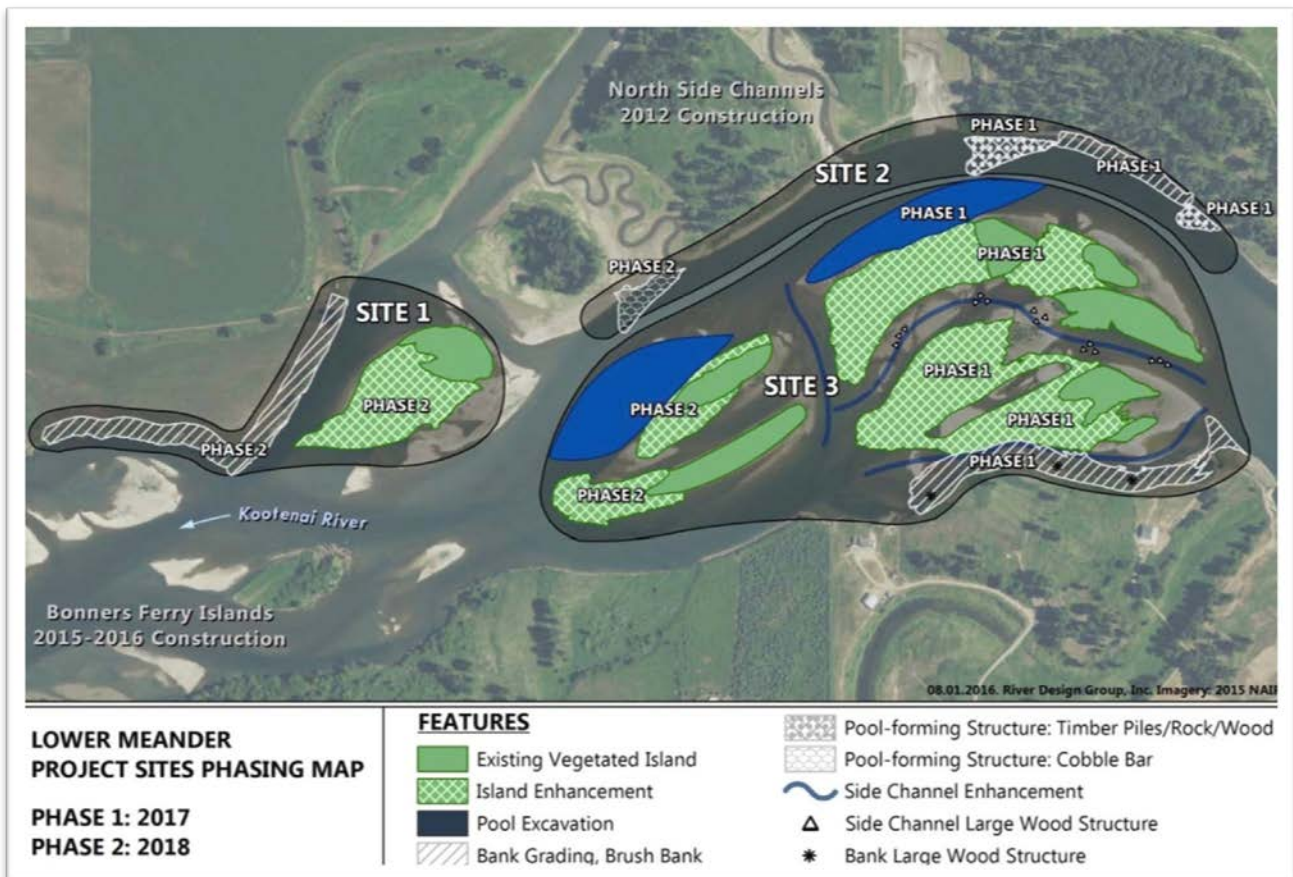


Figure 1. Lower Meander Project overview with 2017 and 2018 construction phasing.

Project Highlights

Project area:	<ul style="list-style-type: none">• In the Braided Reach of the Kootenai River upstream from the City of Bonners Ferry (between river miles 153.5 and 155).• The upper reach of the project is adjacent to the Kootenai River Habitat Restoration Program North Side Channels project (completed in 2012).
Limiting factors addressed:	<ul style="list-style-type: none">• Operation and construction of Libby Dam resulted in changed flow quantity, velocity, timing, and sediment transport• Insufficient frequency and quality of pools• Lack of aquatic habitat complexity and diversity• Lack of woody debris in the river• Lack of surfaces that support natural recruitment of riparian vegetation• Frequent scour on developing floodplain surfaces• Limited nutrients and foodweb
Pre-project conditions:	<ul style="list-style-type: none">• Kootenay Lake backwater and Libby Dam operations influence habitat conditions and natural processes• The project area features a braided stream morphology that is adjusting to multiple disturbances• Multiple vegetated islands have developed in the project area, but island and vegetation development is slowed by intense browse pressure from wildlife, altered flow conditions, and low supply of sediment and woody debris• Land use practices including grazing, bank armoring, gravel mining, dike construction and vegetation clearing have altered riverbank, floodplain and vegetation conditions• Car bodies and other debris create an eyesore
Current use by focal fish species:	<ul style="list-style-type: none">• Used as a migratory corridor for native fish including Kootenai sturgeon, burbot, and trout• Kootenai River white sturgeon are documented to spawn below this area• Burbot hatchery releases occur above and below this area
Biological objectives:	<ul style="list-style-type: none">• Provide holding and staging habitat for Kootenai sturgeon, encourage sturgeon to migrate upstream to higher quality spawning habitat (pool ladder concept)• Provide habitat for burbot spawning, staging, foraging and migration• Improve primary productivity and increase food sources for all life stages of native fish
Restoration strategies:	<ul style="list-style-type: none">• Establish a more pronounced river channel by increasing depth at pool locations to support migration of Kootenai sturgeon and contribute to a longitudinal sequence of high-quality, deeper pools to provide holding, staging, and foraging habitat for sturgeon and burbot• Install woody debris structures in side channels and along bank margins to improve habitat complexity for all native fish and to enhance the food web• Add fill and plantings to existing islands to promote riparian vegetation and wetland development to provide habitat and enhance the food web• Grade and plant eroding banks to establish sustainable riparian buffers• Install bank structures/pool-forming to promote bank stability, maintain pools, and increase hydraulic complexity

More information at: www.restoringthekootenai.org

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