

# Kootenai River Habitat Restoration Program

## Straight Reach Project Overview

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



### *Project Summary*

The Straight Reach project includes construction of two rock spurs (pool-forming structures) and placement of approximately 20 clusters of rocky substrate (substrate clusters) deep under water in the river channel (Figure 1). The pool forming structures and substrate clusters will be located downstream from where Kootenai sturgeon are currently known to spawn. The two pool-forming structures will project into the channel from the north and south banks to create hydraulic complexity. These structures will also enhance pools and holding habitat for Kootenai sturgeon, burbot and other native fish and establish recirculation eddies for refuge and feeding.

Placement of substrate clusters deep under water on the river bed will provide rocky substrate suitable for sturgeon spawning and early rearing habitat. The thickness of the substrate clusters will help raise the rock surfaces above the riverbed. Placement of substrate clusters in groups will help to create hydraulic conditions to maintain clean surfaces and interstitial spaces.



Figure 1. Straight Reach project illustration with pool-forming structures and substrate clusters.

### *Condensed Project Overview*

Project area:	<ul style="list-style-type: none"> <li>• Straight Reach (between RM 152 and 153)</li> <li>• Extends 1.1 miles from U.S. Highway 95 Bridge downstream to Ambush Rock</li> <li>• Within City of Bonners Ferry and adjacent to portion of Kootenai Indian Reservation</li> </ul>
Limiting factors addressed:	<ul style="list-style-type: none"> <li>• Operation and construction of Libby Dam caused change in flow quantity, velocity, timing and sediment transport</li> <li>• Kootenay Lake backwater</li> <li>• Insufficient pool frequency</li> <li>• Embedded rocky substrate</li> </ul>
Pre-project conditions:	<ul style="list-style-type: none"> <li>• Within backwater area of Kootenay Lake</li> <li>• Transitional reach between sand-bed Braided Reaches and gravel-bed Meander Reaches</li> <li>• Multiple landowners along banks</li> <li>• Land uses include residential, commercial and recreational</li> <li>• Infrastructure and utilities in area on both banks</li> <li>• No functioning riparian areas or connected floodplain surfaces</li> </ul>
Current use by focal fish species:	<ul style="list-style-type: none"> <li>• Primarily a migratory corridor for fish</li> <li>• Kootenai sturgeon spawning documented adjacent to this area</li> </ul>
Biological objectives:	<ul style="list-style-type: none"> <li>• Provide holding and staging habitat, encourage sturgeon to migrate upstream to higher quality spawning habitat, and support burbot foraging and migration</li> <li>• Enhance refuge and feeding habitat for focal species</li> <li>• Enhance availability of rocky substrate that supports sturgeon egg attachment and early life stage survival</li> </ul>
Restoration strategies:	<ul style="list-style-type: none"> <li>• Address the lack of hydraulic complexity by installing structures that will enhance pools for holding habitat and establish recirculation eddies for refuge and feeding</li> <li>• Support Kootenai sturgeon spawning by increasing the amount of suitable higher velocity habitat,</li> <li>• Support spawning and early life stage survival by adding rocky substrate clusters underwater adjacent to higher velocity zones and in areas of known spawning preference</li> <li>• Protect existing suitable habitat</li> </ul>
Treatment summary:	<ul style="list-style-type: none"> <li>• Construction of two rock spurs (pool forming structures) from a mix of large and small riprap. Structures will extend outward from the existing levees and angle upward from the riverbed to a level approximately 13 feet above the water surface (at flows of 10,000 cfs)</li> <li>• Placement of 20 substrate clusters deep underwater. Each cluster will be about 625 feet (50 feet by 50 feet). Total proposed substrate is 0.30 acres. Clusters will be about 5 feet thick. Materials will include substrates of 12 inches or less. The rock clusters will be deep enough under water so that they do not pose any risk to river navigation.</li> </ul>

**More information at: [www.restoringthekootenai.org](http://www.restoringthekootenai.org)**

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