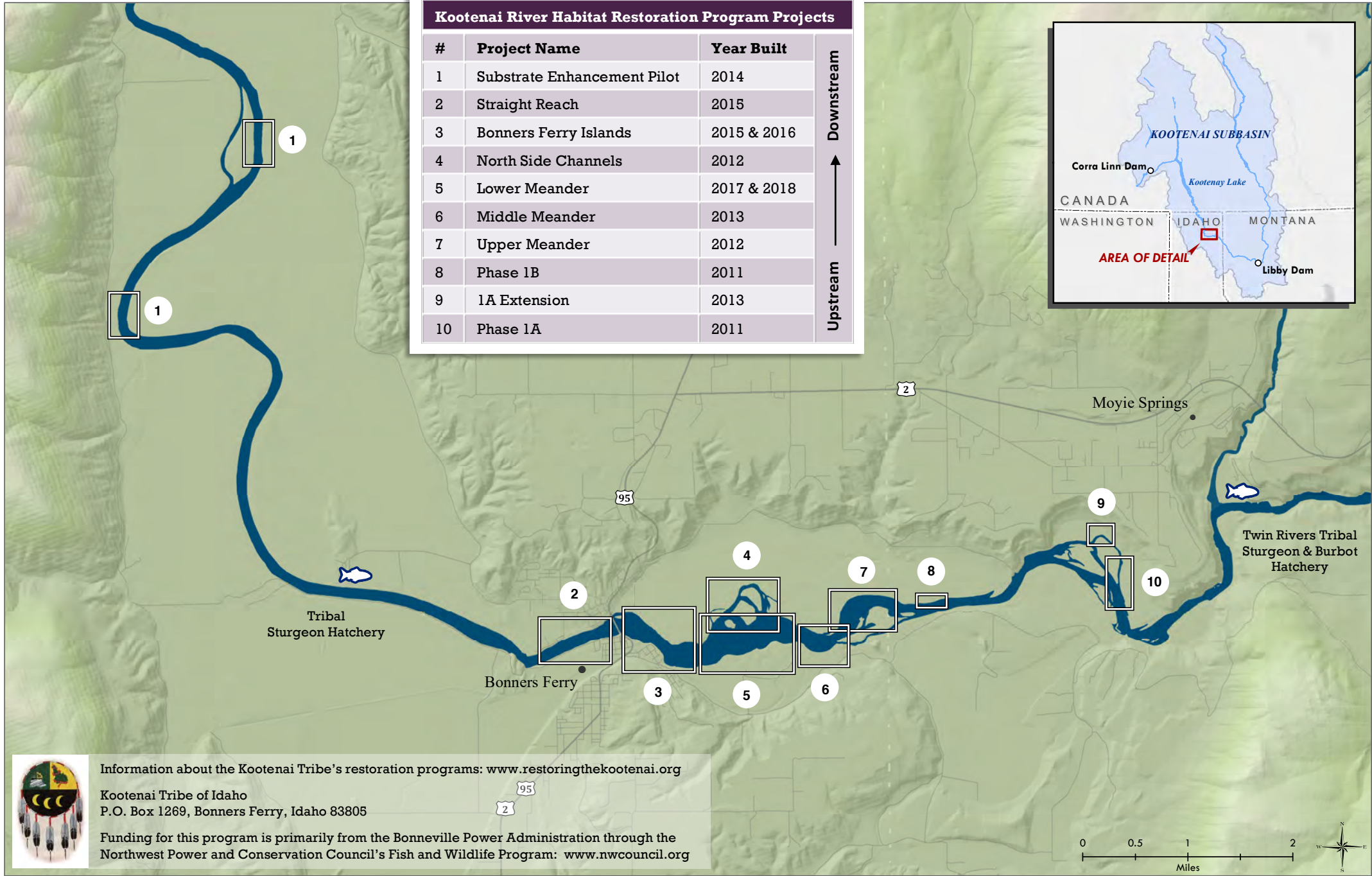


Kootenai River Habitat Restoration Program: 2011-2017 Projects





Kootenai River Habitat Restoration Program: Project Overviews 2011 through 2018

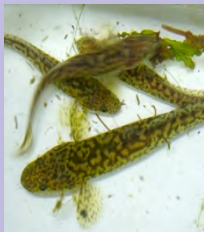
Substrate Enhancement Pilot (2014)

- Rocky substrate placed at Shorty's Island (downriver, north site 1 acre) and Myrtle Creek (south site, 1 acre).
- Rock was placed on top of clay shelves in order to provide hard surfaces for egg adhesion and hiding spaces between the rock for larval sturgeon (prior to enhancement substrate was clay and sand).
- Burbot also use the substrate for spawning in the winter.



Straight Reach (2015)

- Two rock spurs ("sturgeon fins") constructed along the riverbank to create more complex in-water habitat (~3 acres total).
- Clusters of rocky substrate placed on the riverbed (~0.75 acres) to provide spawning habitat for sturgeon and burbot.



Middle Meander (2013)

- Excavation of one large pool (~3 acres).
- Three large pool-forming structures constructed (~2 acres total) to protect river banks, help scour existing and constructed pools, and to provide complex aquatic habitat.
- Bank restoration, floodplain grading and revegetation (~13 acres)

Upper Meander (2012)

- Pool enhancement (~2 acres, the upper rung of the "pool ladder") and shaping of eddy/recirculation alcoves.
- Three large pool-forming structures constructed (~1 acre) to enhance existing pools, protect banks and create recirculation zones.
- Floodplain grading and revegetation (~3 acres).

Bonnars Ferry Islands (2015 & 2016)

- Excavated three large pools (~18 acres total) to create a more pronounced channel for migration, resting and feeding for sturgeon, burbot and other native fish. These pools are the "bottom rung" of a "ladder" of constructed pools through the braided reach.
- Two large pool-forming structures (~2 acres total) built to direct flows away from riverbanks, create recirculation eddies, and provide complex in-water habitat.
- Using excavated materials, built vegetated islands (~20 acres) on gravel bars in the river to create floodplain habitat to improve the food web.
- Floodplain grading and revegetation (~7.25 acres).



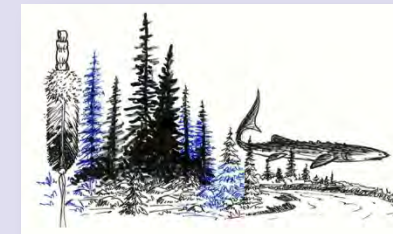
North Side Channels (2012)

- Realigned and restored side channel habitat (~2.25 acres) to provide more diverse habitat for native fish and enhance the food web.
- Floodplain grading and revegetation to enhance the food web (~21 acres).
- Project included riparian planting and fencing.



Phase 1B (2011)

- Bank restoration, floodplain grading and revegetation to address extreme erosion and sediment loading from this site, which is upstream from the current sturgeon spawning area (~0.5 acres).



Lower Meander (2017 & 2018)

- Excavation of two 20-30 feet deep pools (depending on flows, ~26.5 acres).
- Enhancement of six islands (~14 acres) with material excavated from pools, to create floodplain habitat, and edge habitat.
- Restoration and stabilization of stream bank including removal of old car bodies.
- Construction of three pool-forming structures (~0.3 acres).
- Installation of numerous large wood structures in a channel that runs between the islands to create hydraulic complexity and promote development of small scour pools in the side channels.
- Floodplain grading and revegetation (~8.5 acres).

Phase 1A (2011) and 1A Extension (2013)

- Bank restoration and floodplain grading and restoration to address extreme bank erosion (~12.6 acres).
- Restoration of side channel habitat.