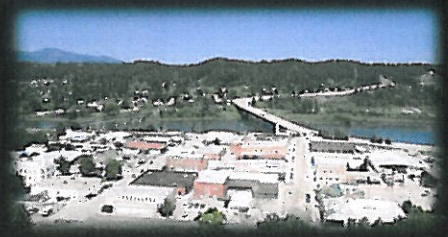
Kootenai River Habitat Restoration Program Update

Kootenai Tribe of Idaho

Kootenai Valley Resource Initiative

July 16, 2012 ❖ Bonners Ferry, Idaho

Changes to Kootenai Basin



Beaver trapping

Floodplain diking

Non native species

Commercial fish harvest

Infrastructure development

Fertilizer plant

Libby Dam operations

1800s

1900s

1950s

1970s

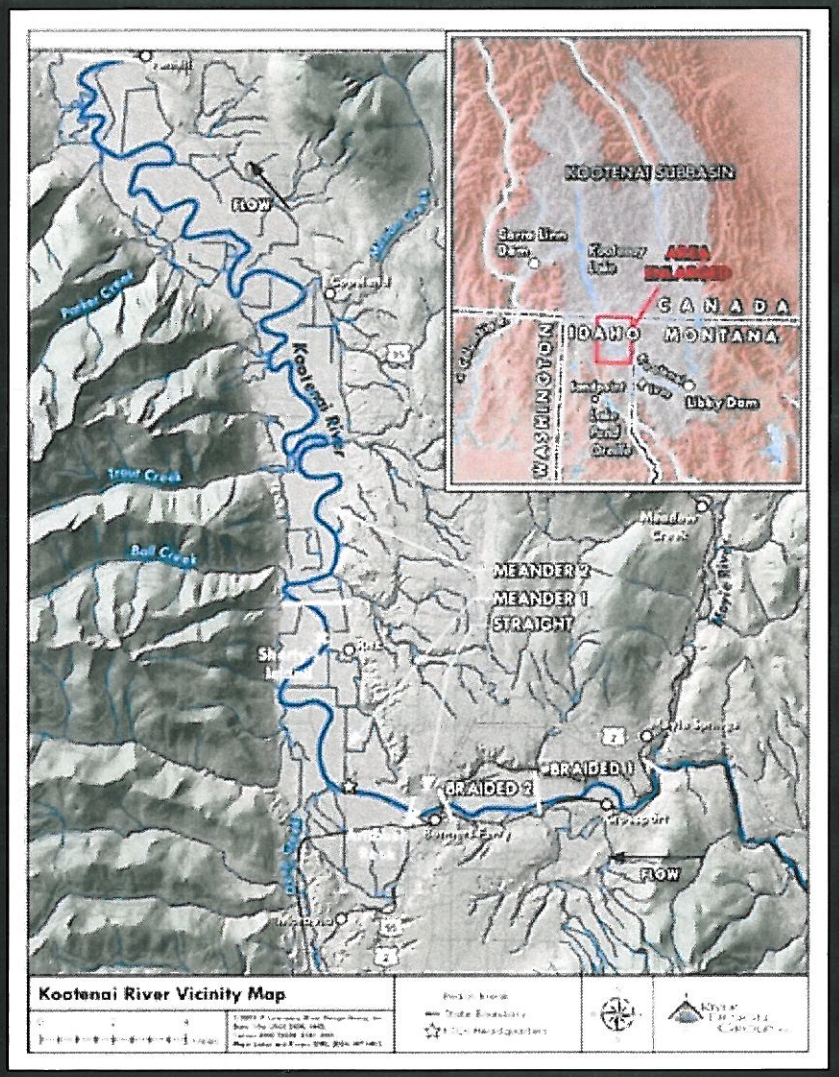
Mining

Logging

Conversion of wetlands to agriculture

Libby Dam construction

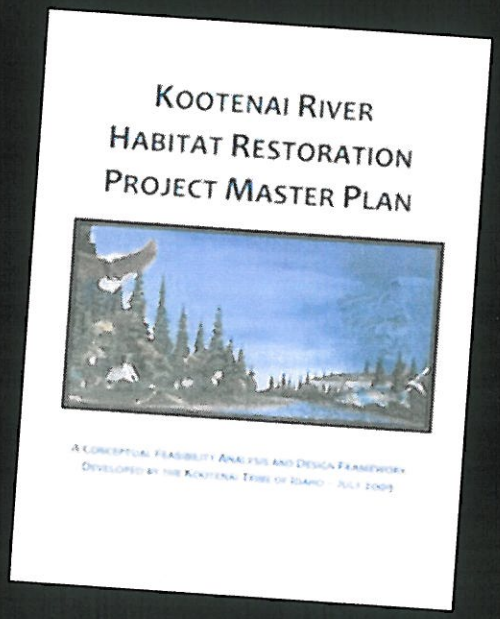
Kootenai River Habitat Restoration Program

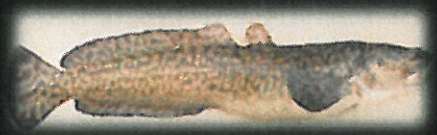


- Ecosystem-based restoration program in 55-mile reach of Kootenai River in Idaho
- Multiple projects in different reaches
  - Braided Reaches
  - Straight Reach
  - Meander Reaches

Kootenai River Habitat Restoration Program

- Completed Master Plan 2009
  - Technical analysis
  - Provides framework & identifies restoration treatments
  - Focus on sturgeon, burbot, kokanee, bull trout, westslope cutthroat, and redband rainbow

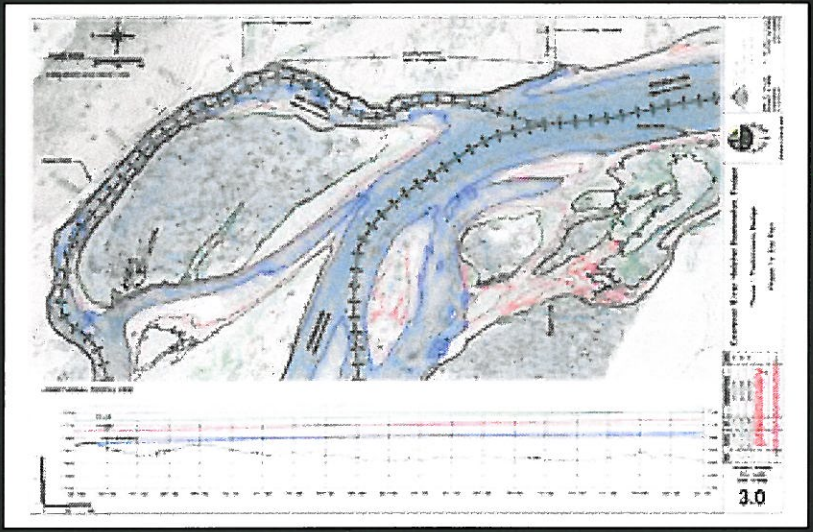


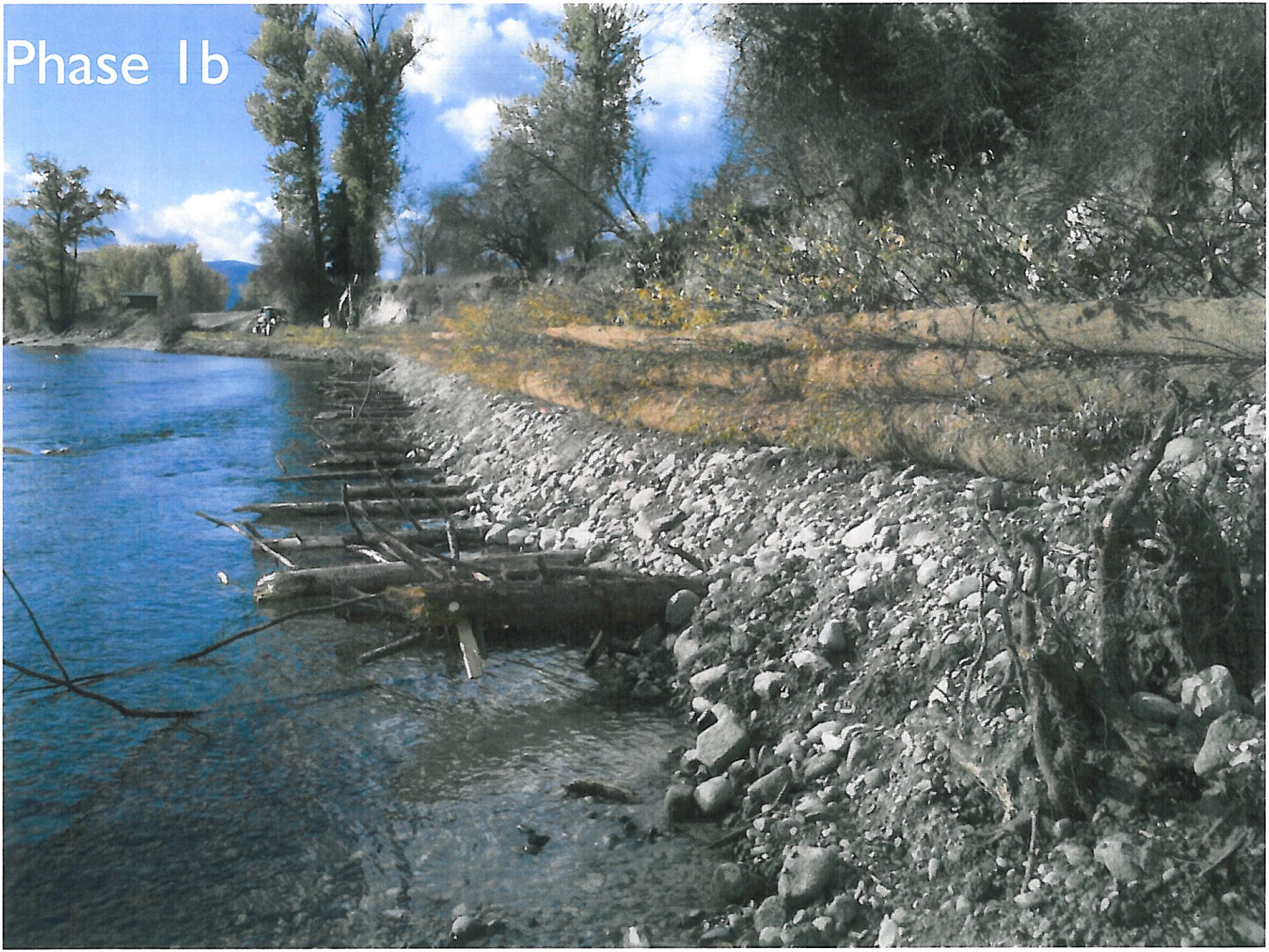


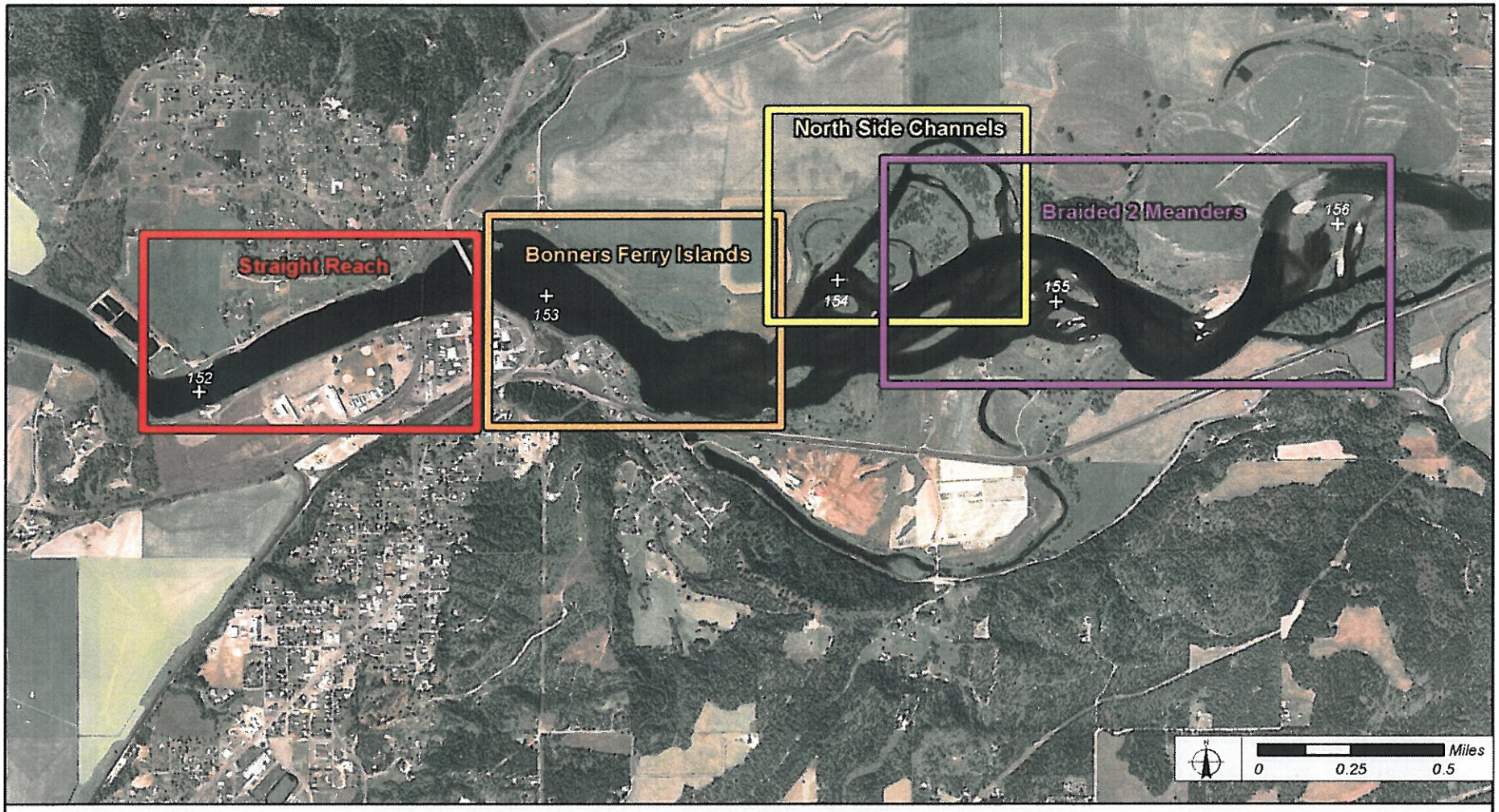
Program web site: www.restoringthekootenai.org

Kootenai River habitat restoration

- Floodplain reconnection & creation of floodplain surfaces
- Bank restoration
- Bank corridor re-vegetation & riparian buffers
- Creation or enhancement of secondary channels
- Instream structures
- Channel modifications
- Construct or enhance wetlands
- Tributary restoration
- Substrate enhancement




Phase Ib



Straight Reach

Treatments pool enhancement structures, spawning substrate placement, bioengineering bank restoration, riparian buffer development, and eddy/alcove habitat creation.

North Side Channels

Treatments include restoring off-channel habitat, installing large woody debris structures, revegetation, managing side channel connectivity, and addressing weeds/invasive species.

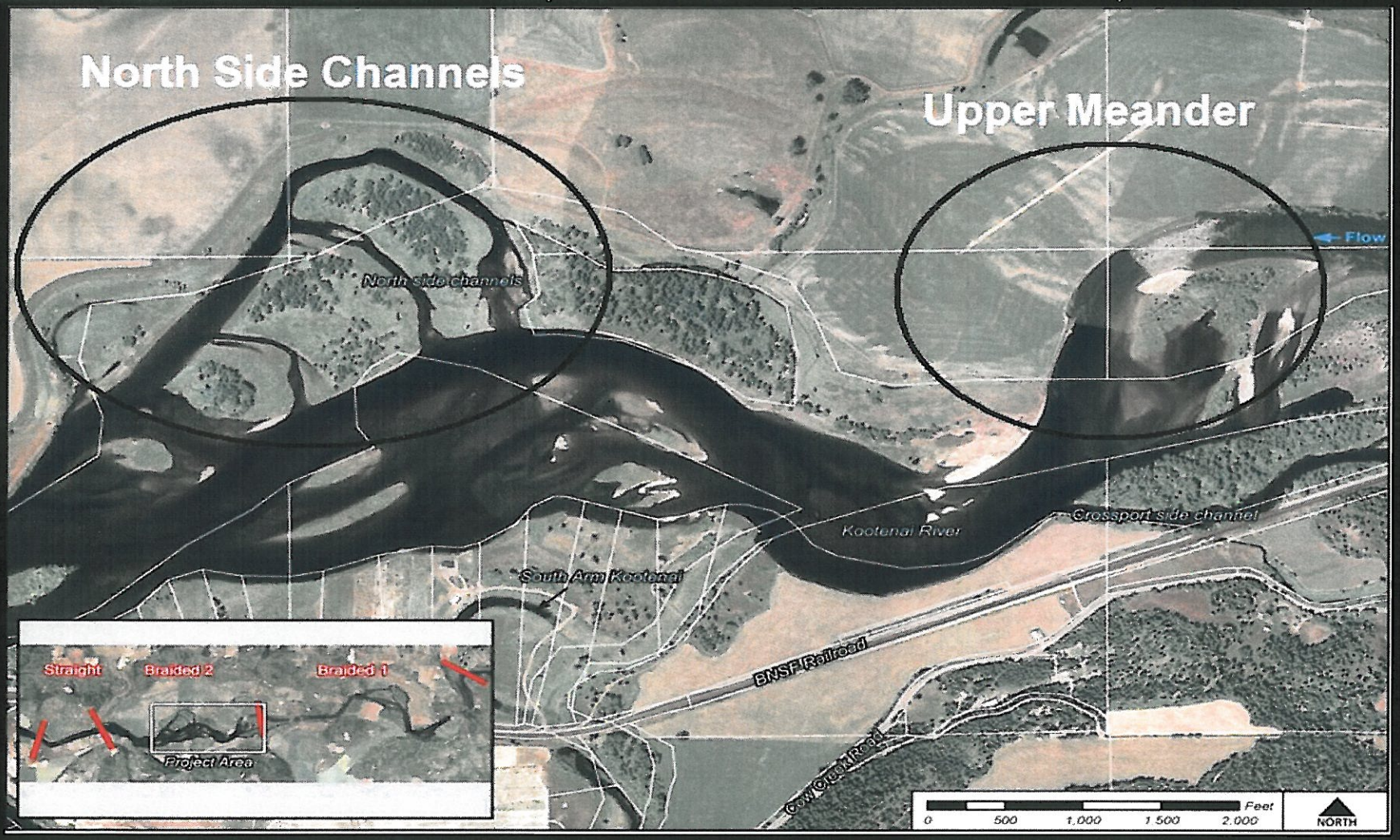
Bonners Ferry Islands

Treatments include placing fill on existing bars, installing large woody debris roughness elements, microtopography grading, trash removal, and revegetation.

Braided 2 Meanders

Treatments include bank protection structures, pool enhancement structures, bioengineering bank restoration, large woody debris roughness elements, and eddy/alcove habitat creation.

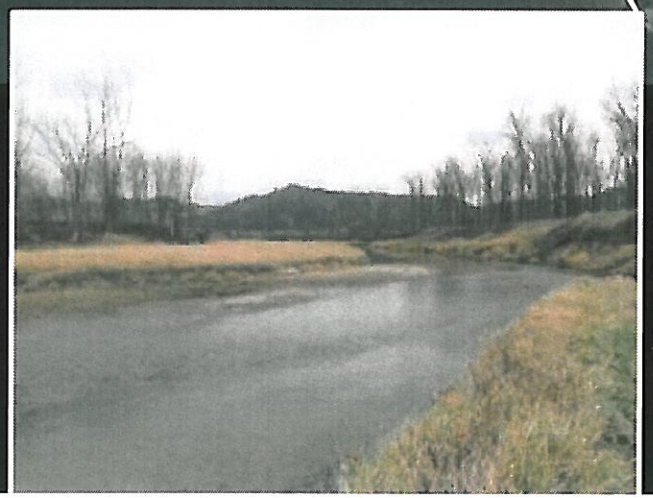
2012 Projects:
Upper Meander & North Side Channels



North Side Channels Project Area – Existing condition

<u>Limiting Factors</u>

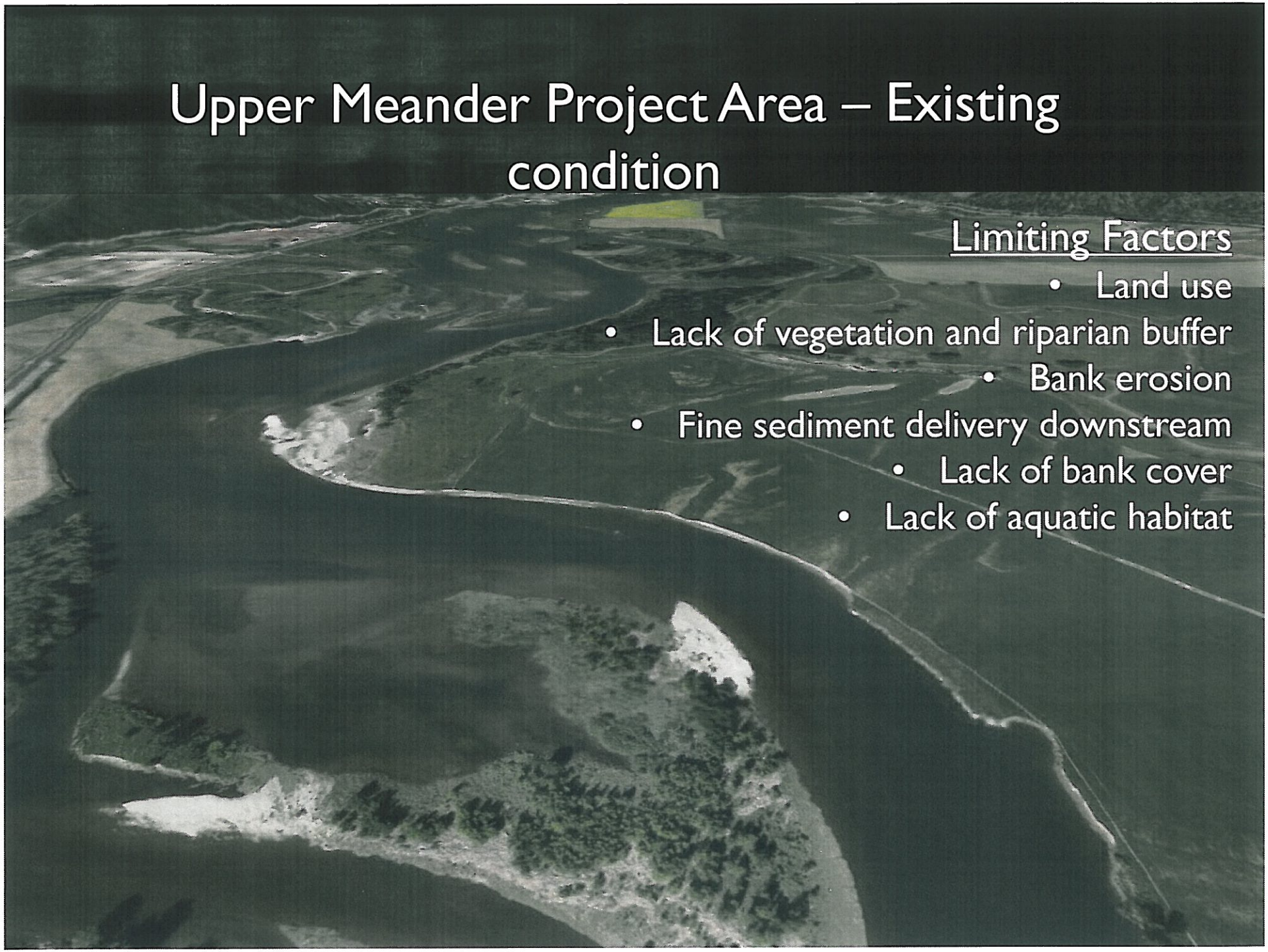
- Lack of aquatic habitat complexity
- Lack of vegetation recruitment/diversity
- Invasive weeds
- Grazing



North Side Channels Project Area – Restored condition

- Improve hydraulic complexity
- Address reed canarygrass
- Plant native trees & shrubs
- Create topographic diversity
- Add large woody debris
- Improve fish habitat and food chain

Upper Meander Project Area – Existing condition

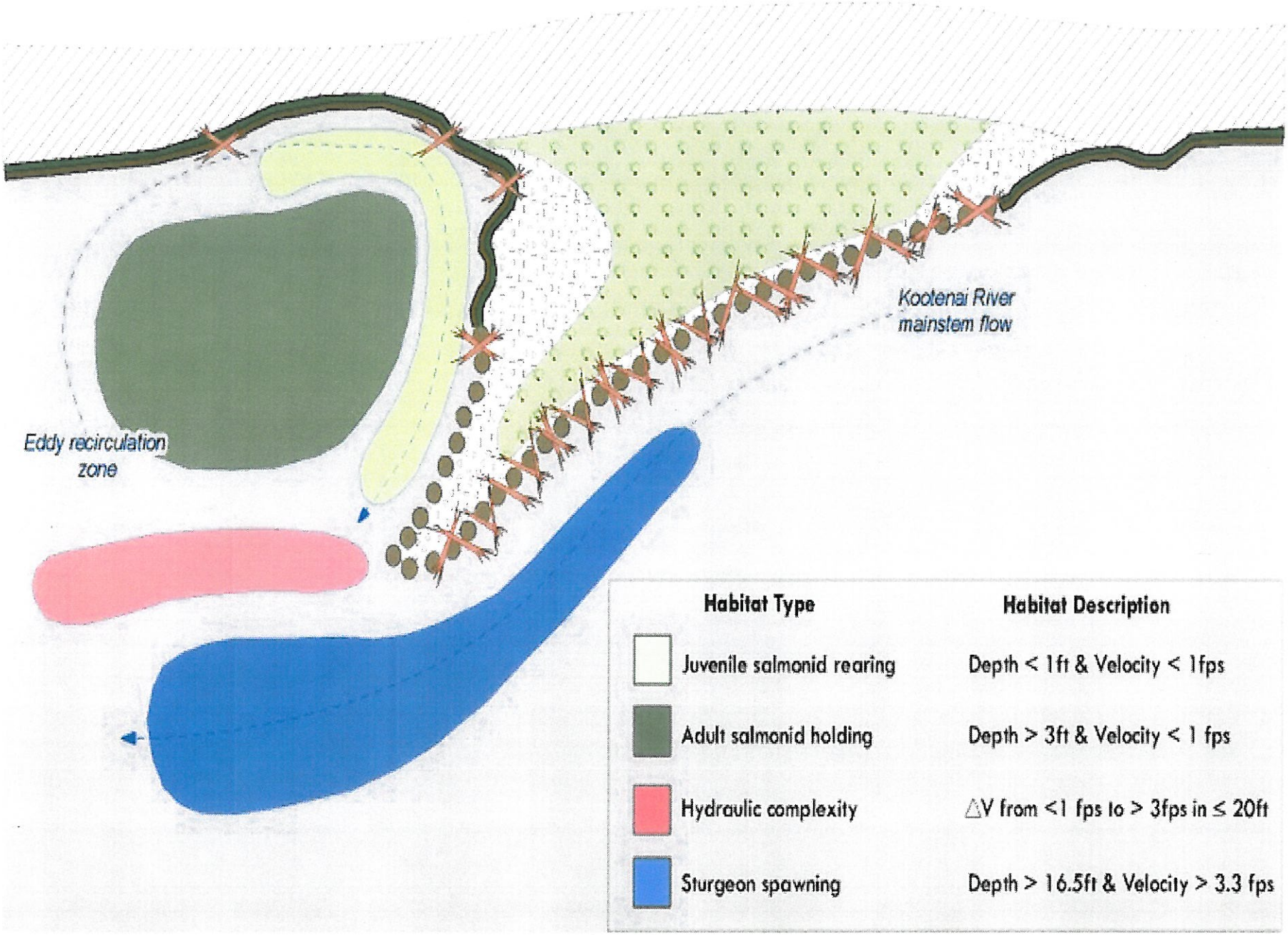


<u>Limiting Factors</u>

- Land use
- Lack of vegetation and riparian buffer
- Bank erosion
- Fine sediment delivery downstream
- Lack of bank cover
- Lack of aquatic habitat

Upper Meander Project Area – Restored condition

- Improve resistance to erosion
- Establish a riparian buffer
- Enhance existing pools
- Add complexity and LWD
- Reduce land loss


Kootenai River mainstem flow
Eddy recirculation zone
Habitat Type
Habitat Description
Juvenile salmonid rearing
Depth < 1ft & Velocity < 1fps
Adult salmonid holding
Depth > 3ft & Velocity < 1 fps
Hydraulic complexity
△V from <1 fps to > 3fps in ≤ 20ft
Sturgeon spawning
Depth > 16.5ft & Velocity > 3.3 fps

2013 Projects: Shorty's Island Pilot Project

- Developing substrate enhancement pilot project
- Design will be developed and refined in next 8 months
- Coordination with partners and landowners scheduled

2014 Projects:
Straight Reach & Bonners Ferry Islands

- Working on refining design concepts
- Modeling, feasibility analysis
- Work sessions with biologists, design team and expert advisors in July and August
- Coordination with City, County and private landowners

The Kootenai Tribe wishes to thank our partners and friends who helped with planning, coordination, design, permitting, funding and implementation of this project!

BC Ministry of Forests Land and Natural Resource Operations
Bureau of Land Management
Bonneville Power Administration
Boundary County
City of Bonners Ferry
Confederated Salish and Kootenai Tribes
Idaho Department of Fish and Game
Idaho Department of Lands
Idaho Department of Environmental Quality
Idaho Department of Water Resources
Idaho Office of Species Conservation
Kootenai Tribal Council
Kootenai Valley Resource Initiative
Montana Fish Wildlife and Parks
Natural Resource Conservation Service
Northwest Power and Conservation Council
Phase I Landowners
Peer Review Advisory Team
U.S. Army Corp of Engineers
U.S. Fish and Wildlife Service
U.S. Forest Service
U.S. Geological Survey