# Big Meadows Restoration

The Kalispel Tribe of Indians, a federally recognized native tribe, is committed to serving its members, preserving its culture, and continuing the stewardship of its aboriginal lands (figure 1). The strategic planning philosophy of the Tribe is to "protect, preserve and promote the Tribe's natural resources, cultural resources, cultural identity and land base" (Kalispel Tribal Council 2006). Under the guidance of Council priorities, the Kalispel Natural Resources Department (KNRD) has been effective in using hydropower mitigation funding sources to acquire, restore, and manage large wetland and floodplain areas near and surrounding the Reservation. These lands total approximately 2,285 acres and comprise the Kalispel Wildlife Mitigation Management Area (WMMA).

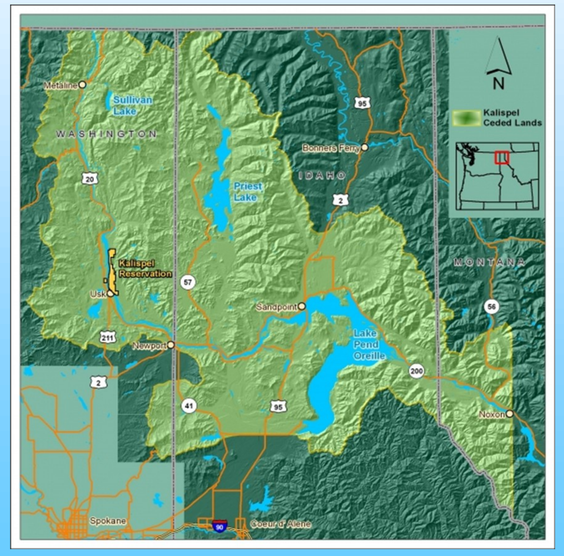



Figure 1. Kalispel Aboriginal Territory.

The Kalispel Natural Resources Department has continued to mitigate for wildlife habitat losses as part of the Albeni Falls Wildlife Mitigation Project by acquiring property in the Big Meadows area (Priest Lake) over several years to include a total of 773 acres (figure 2).

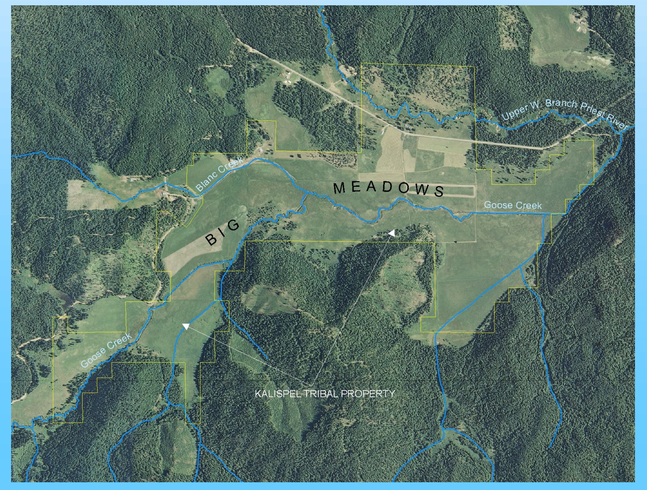


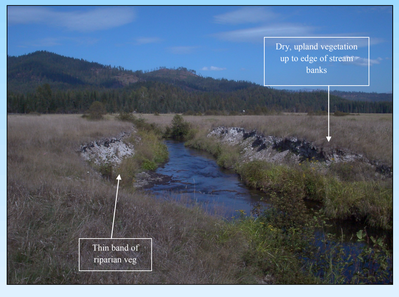

Figure 2. Kalispel Tribal Property in Big Meadows.

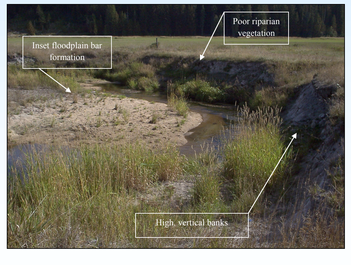
For the past ten years, the Tribe has been actively involved in restoring instream habitat, monitoring westslope cutthroat trout populations, and determining native and nonnative fish distribution. As new owners of Big Meadows, the Tribe will restore 1) aquatic and riparian habitat in 2.44 miles of Goose Creek channel and 2) wetland meadow habitat on 773 acres for native fish and wildlife.

The two primary goals of the Big Meadows restoration project are to 1) Restore aquatic, riparian, and wetland habitat within parcels owned by the Kalispel Tribe; and 2) Construct a fish passage barrier on Goose Creek to protect cutthroat trout populations from invasive brook trout.

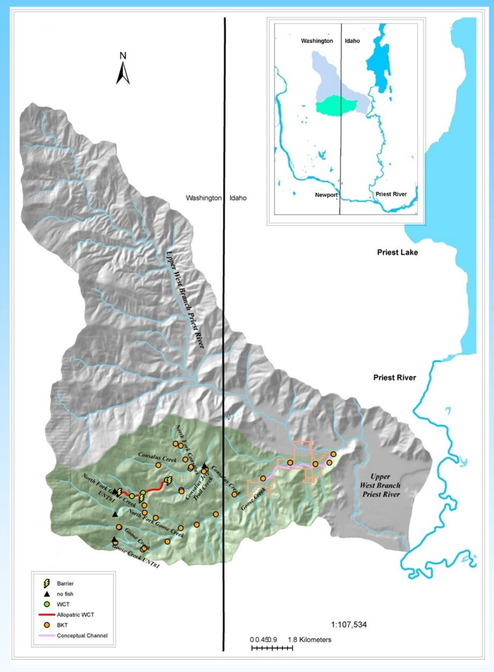
The existing condition of Goose Creek precludes attainment of the project goals. Achieving the project goals may be accomplished by relocating Goose Creek back to its historic elevation and dimensions. Historic aerial photography provides evidence of a gently meandering channel through much of Big Meadows. The flat character of the meadows likely provided the original, expansive floodplain for Goose Creek, and may be utilized to provide that function again if the channel is reconstructed.

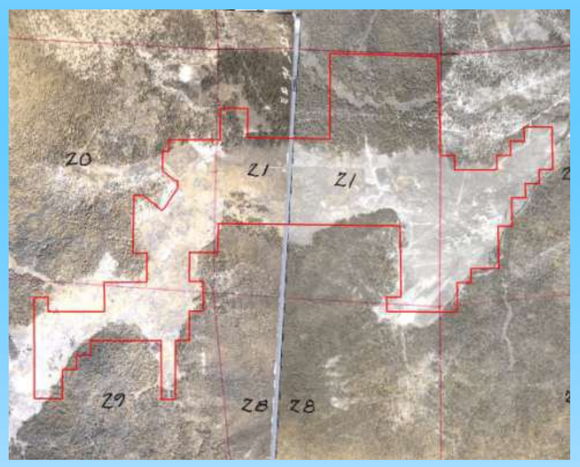
Previous management of the parcels included channelizing and dredging portions of Goose Creek in an effort to drain the meadow and create better growing conditions for hay production and grazing. As a result of these practices, Goose Creek exhibits significantly reduced channel length, lateral and vertical instability, reduced habitat quality, and poor riparian vegetation. The channel is deeply incised and the bed elevation of the creek is very low as compared to the meadow, and therefore acts as a drain for adjacent pastures. Bank heights range from 7-10 feet. Bank erosion is evident by sloughing along much of the channel, which provides additional sediment inputs to the watershed. Overall habitat complexity is poor due to reduced floodplain connectivity, poor riparian vegetation density and simplified plan form.


In 2009 the Tribe conducted fish habitat and population sampling throughout the entire Goose Creek subbasin (19.82 miles). Fish population surveys identified two small isolated westslope cutthroat trout (*Oncorhynchus clarki lewisi)* populations in the headwaters of Goose Creek (1.86 miles). The populations are isolated by natural barriers and no cutthroat trout were sampled in any of the 32 sampling sites downstream of the barriers. Westslope cutthroat trout currently occupy 9.4% of their historic range in the Goose Creek subbasin. These populations are at a high risk of extirpation from stochastic events and genetic bottlenecking due to the limited stream lengths to which they are confined and relatively low number of reproducing adults.




Aerial comparison from 1932 and 2009 imagery of Big Meadows.