Caribou Creek
Diversion Consolidation Project

Kittitas County Conservation District, Washington

Caribou Creek is located in Kittitas County, east of the city of Ellensburg. It is a small stream that passes through agricultural land flowing from the mountains north of the valley south by southwest to the Yakima River. Flows are impacted by irrigation diversions, and range from low flows of less than 5 cfs in the irrigation season to average spring runoff flows ranging from 50 cfs to 75 cfs. Generally, the diversions on Caribou Creek have not been modified for fish passage or intake screening in the past.

This project falls within a 1-mile reach of the creek, located just south of the City of Kittitas, adjacent to the city limits. Four gravity fed irrigation diversions fall within the project limits. A road improvement project proposed by the City passes over Caribou Creek, and required a new bridge, which resulted in elimination of one of the primary diversions.

Project Elements:

- Fish Passage and Protection
- Irrigation Diversion and Supply
- Creek Channel Regrade Design
- Permitting
- Hydrologic Analysis
- Hydraulic Engineering

Due to the impacts to the existing diversion, the Kittitas County Conservation District retained R2 to develop conceptual and final designs that would consolidate the four diversions, layout a new irrigation distribution system, provide upstream fish passage facilities, and provide fish screens for the intake. A stoplog weir was implemented to provide a constant water surface for the diversion intake.

The water distribution system provides a 20 cfs maximum irrigation flow to areas previously serviced by the gravity intakes. The intake for the distribution system was designed within the required agency criteria and guidelines to utilize existing screens and in combination with additional new screens. The screens implemented for this facility are cylindrical type utilizing a water backwash for cleaning. The fish ladder design incorporated a half pool and chute type, consisting of nine steps, passing fish approximately five feet vertically around the diversion. Construction of the facility was completed in the winter of 2008-2009, occurring simultaneously with construction of the City roadways improvements project, and was in operation for the 2009 irrigation season.