

Gorge Bypass Survey

Crews from North Cascade National Park Service (NPS), Washington Department of Fish Wildlife (WDFW), Seattle City Light (SCL), and Upper Skagit Indian Tribe (USIT) met at the SCL Newhalem project center to be trained in lock out/tag out procedures. In addition co-manager biologists were unfamiliar with the section above the Gorge Powerhouse and below the Gorge Dam and needed to evaluate the habitat in order to begin discussions for potential future monitoring plans focused on salmonid use of the George Bypass reach or the historic Skagit River channel. This effort was set up in response to observations made from NPS and SCL biologists who had observed steelhead above the presumed historic barrier on April 25, 2016.

The Gorge Bypass was surveyed on May 9, 2016 by Hugh Anthony (NPS), Andrew Fowler (WDFW), Ed Conner (SCL), Jon-Paul Shannahan, Mike Bartlett, and Gabe McGuire (USIT). The survey began at the bridge to the Gorge Powerhouse at approximately 11:15 and concluded at 14:30 just downstream of the Highway 20 tunnel. Three snorkelers surveyed the Bypass Reach while the other surveyors recorded data.

Four live steelhead and four steelhead redds were observed in the survey reach (Figure 1). Coordinates for live steelhead and steelhead redds are displayed on the accompanying figure. Old dewatered redds were observed on the left bank a few hundred meters upstream of the Gorge Powerhouse. Numerous coho fry were found throughout the lower portion of the Gorge Bypass reach until the first major cascade complex was encountered approximately 0.5 miles (800 meters) upstream of the powerhouse. The first juvenile *O. mykiss* (~ 6") was observed upstream of the cascade; fry observations above the cascade were sparse. The next observation of juvenile *O. mykiss* occurred downstream and within pools associated with the presumed historical anadromous barrier (n=7; 5"-7"). Five additional juvenile *O. mykiss* in the same size range were observed above the presumed barrier. Fry (n=20) were observed above the presumed barrier, but were not identified to species.

This sampling effort should be considered reconnaissance for future surveys. Snorkeling was an efficient method to identify steelhead and other salmonids in the lower portion of the Gorge Bypass reach. As we moved up the system, the habitat changed to large deep pool habitats where snorkeling was inefficient at identifying the salmonid use in the reach. In future surveys additional methods should be considered for surveying deep pool habitats.

Gorge Bypass Channel

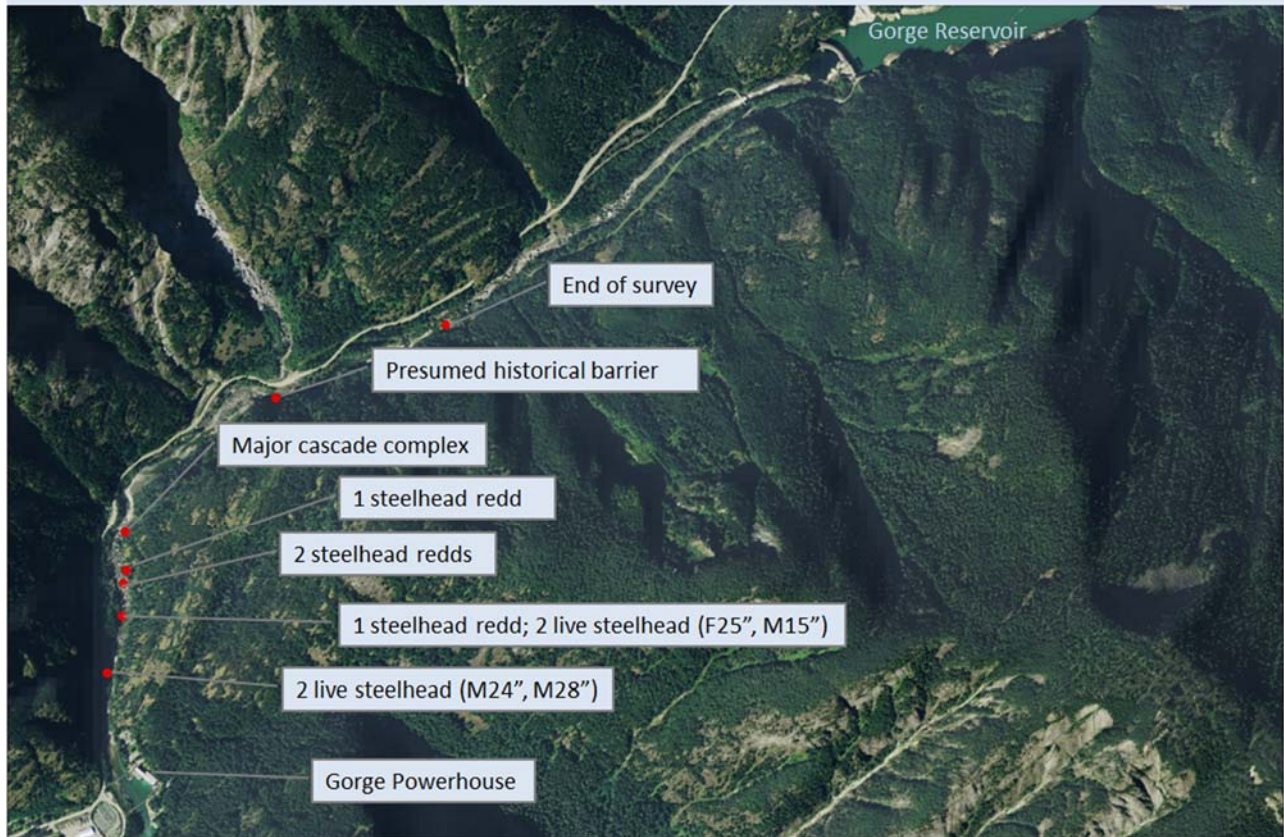


Figure 1. Survey map of the Gorge Bypass conducted on May 9, 2016. Red points are actual coordinates collected in the field.