



Little Case Creek Fish Passage Monitoring and Evaluation Plan

Project Title: Little Case Fish Passage Project

Organization: Eel River Watershed Improvement Group

Prepared by: Isaac Mikus

Date: 01/04/2022

Monitoring Plan

In the winter following construction, Stillwater Sciences will evaluate both stream crossings for fish passage. Following construction, ERWIG staff will conduct a large wood count along both project sites and measure the length of habitat restored. ERWIG will also confirm that at least 50 native trees were planted. ERWIG staff will establish a permanent photo point at each site and will take pre-project and post project photos. ERWIG will complete the CFPF Fish Passage Barrier Removal Monitoring Worksheet.

Evaluation

Success of the project will be evaluated by a fish passage assessment and by habitat restored in the project reaches. See Table 1 and Table 2 for desired project outcomes and outcome indicators.



TABLE 1. PRIMARY BENEFIT

<i>Desired Outcome</i> Proposed improvements to baseline/pre-implementation conditions	Restore anadromous access to one mile of Little Case Creek
<i>Output Indicators</i> Actions taken to achieve desired outcome	Replacement of two culverted fish passage barriers with bridges
<i>Outcome Indicators</i> Target measurement that indicates the desired outcome has been achieved	Two stream crossings that pass Coho salmon at all life stages and flows
<i>Measurement Tools & Methods</i> Quantitative means of measuring outcome indicators	Fish passage assessment
<i>Baseline Conditions*</i> Pre-project conditions of outcome indicators	Two culverts that are fish passage barriers to juvenile salmonids at all flows and adult salmonids at some flows
<i>Monitoring Frequency</i> Description of how often each outcome indicator will be measured	Once
<i>Monitoring Locations</i>	Measured at the two existing crossing sites on Little Case Creek



TABLE 2. SECONDARY BENEFIT

<i>Desired Outcome</i> Proposed improvements to baseline/pre-implementation conditions	Habitat restoration
<i>Output Indicators</i> Actions taken to achieve desired outcome	Instream placement of 9 LWD structures (logs and logs with rootwads), planting of 50 native trees
<i>Outcome Indicators</i> Target measurement that indicates the desired outcome has been achieved	0.2 acres of improved habitat affecting a 400-foot stream reach, 16 pieces of large wood, and 50 trees planted
<i>Measurement Tools & Methods</i> Quantitative means of measuring Outcome Indicators	Photographic documentation, large wood survey, planted tree count
<i>Baseline Conditions*</i> Pre-project conditions of Outcome Indicators	Habitat for salmonids lacks shelter and velocity refugia. An LWD survey conducted by ERWIG found 0 pieces of LWD within the Culvert #1 project reach and 1 piece of LWD within the Culvert #2 project reach.
<i>Monitoring Frequency</i> Description of how often each Outcome Indicator will be measured	Once
<i>Monitoring Locations</i>	Measured along the restored section of the project sites.



Performance Measures and Metrics

Project Objective	Performance Measure	Monitoring Metrics
Objective 1. Remove two barriers to salmonid migration.	Two culverts will be removed and replaced by bridges which will restore fish passage at all life stages to one mile of habitat.	Fish passage assessment
Objective 2. Improve salmonid habitat by installing fish habitat structures.	Nine fish habitat structures will be built with 16 logs, restoring at least 400 feet and 0.2 acres of stream channel.	Pre and post photos, length of channel restored, habitat structure count.