



Skookumchuck River Early Action Reach - Monitoring 2019-2024

This assessment provides pre and post physical habitat and biological data for the final restoration activities for the Skookumchuck River downstream of Skookumchuck Dam from approximately river mile 18.6 to 19.6 and 21.6 to 21.7 (the Project Reach). This project is one of five Early Action Reach projects implemented as part of the Chehalis Basin Strategy Aquatic Species Restoration Plan (ASRP). The purpose of the Early Action Reach projects is to demonstrate to stakeholders the restoration techniques and scale of restoration envisioned by the ASRP.

Overview & Issues

- Reduced in-channel structure (e.g., wood).
- Modified sediment delivery transport, and temporary storage.
- Reduced floodplain connectivity and function.
- Reduced riparian condition and function.



Methods & Metrics

- **Status & Trends protocols** (transects, thalweg, shade, etc.).
- Before and after construction surveys.
- **Core indicators:** channel complexity, LWD, substrate, banks, riparian.
- **B-IBI:** Benthic Index of Biotic Integrity, quantitative scoring system to assess stream health (0-100).
- **MTTI:** Macroinvertebrate Temperature Tolerance Index, weighted average site assemblage thermal tolerance.

Habitat & Biological Results

- **B-IBI** scores increased after project implementation.
- **Large wood** (pieces and volume) increased after project implementation.
- **MTTI** increased, indicating a shift toward more heat tolerant macroinvertebrates.
- **Pool percentage** and **average pool depth** was similar for pre and post project.
- **Substrate** coarsened and **embeddedness decreased**, suggesting less fine sediment.



Discussion

- Biological assessments indicate a post-project shift toward **thermally tolerant macroinvertebrate taxa**.
- Most **physical habitat metrics** showed no statistically detectable change within the current monitoring window.
- **Large wood** added in **side channels** was **excluded** from reach-scale LWD metrics.
- Many habitat metrics require **multiple high-flow seasons** to emerge from interannual variability; defensible changes often take **5-10 years** to detect.

