

Export of Invertebrate Drift From Fishless Headwater Streams in the Lower Klamath River Basin

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Fishless headwater streams are important components of a river network, serving as a source of sediments, water, woody debris, nutrients, and invertebrates to downstream waters. However, the contribution of invertebrate subsidies from fishless headwater streams is rarely recognized in riparian zone management of headwater forests. A greater understanding of how these subsidies are used by fish and contribute to biological production in downstream reaches is needed to enhance management practices for aquatic conservation. To address this issue, we are assessing the role of fishless headwater streams as donors of downstream food supplies for coastal cutthroat trout (*Oncorhynchus clarki*) in headwater systems of the Lower Klamath River.

From June 2015 through April 2016 we sampled invertebrate drift from six fishless headwaters located in the sub-basins of Tectah Creek, Ah Pah Creek, and Tarup Creek. Additionally, we collected drift samples and trout diet samples from adjacent fish-bearing stream reaches.

Our objectives are to 1.) quantify the magnitude, taxonomic composition, energy content and seasonal variation of invertebrate drift exports from fishless headwaters of the Lower Klamath River, 2.) evaluate the distance travelled by drifting invertebrates in fishless headwaters at seasonal base flows, and 3.) assess the use of invertebrate prey subsidies by fish and their potential contribution to fish growth.

At present, four rounds of field sampling have been completed (summer, fall, winter, and spring) and preliminary laboratory analysis is underway. We are currently evaluating the export of invertebrate drift from these sites and will make comparisons to drift samples and trout diet samples collected from downstream reaches to ascertain the role fishless headwaters play in stream food webs and their importance to salmonids. We expect laboratory and data analysis to be completed by the end of the 2016 Fall semester.