Weather or Not, Sometimes It's Hot: Secondary Data Analysis of Northwest Streams

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Temperature is the primary pollutant restricting salmon young from developing and completing their journey to the ocean. High stream temperatures reduce the survival of salmon, reinforcing their decline in population and contributing to the loss of returning fish to local streams. Temperature is often regarded as an indicator of unhealthy aquatic ecosystems that identifies potential issues such as dissolved oxygen and loss of riparian vegetation, that impact fish habitat. Crystal Springs, located in Sellwood-Moreland area, was priorly abundant in salmon preceding the urbanization of Portland, Oregon in the early 1900's. With Portland's expansion, freshwater ecosystems suffered and streams became polluted, contributing to plummets in the water quality of local tributaries. Fortunately, community volunteer work over the past fifteen years has led to advances in water quality and restoration of the stream's riparian zone; however despite these vast improvements, concerns of high temperatures remain. This study compares the past fifteen years of average monthly water temperatures, specifically following the salmon on their primary journey from Crystal Springs to the Pacific Ocean. Significant seasonal variation was found for rainfall, ambient air and water temperatures. Crystal Springs is warmer than other local streams in the springtime. After examination of different salmon breeds and their needs, Coho, Chum, and Pink Salmon would be most adaptive to Crystal Springs due to cooler autumn temperatures. This study serves as a baseline for future restoration of Crystal Springs and its fish habitat.

Awards Won: