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Understanding Factors that May Affect Survival and Productivity of Pacific Salmonids

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Abstract : This research aims to understand the factors that may affect the survival and productivity of Pacific salmonids through two components. The first component is lab-based and aims to improve high-performance liquid chromatography to better quantify vitamin deficiencies such as thiamine. The lab work is conducted at the National Oceanic and Atmospheric Administration (NOAA) Ted Stevens Marine Research Institute in Juneau, Alaska. Deficiencies in thiamine have been shown to reduce the survival of salmonids at early life stages. The second component involves the analysis of a 22-year data set of migration timing of juvenile Coho Salmon, Dolly Varden, Steelhead, and returning adult Steelhead at Little Port Walter, Alaska. The statistical analysis quantifies their migration fluctuations and whether they correlate to various environmental conditions such as temperature, salinity, and precipitation.

Keywords : climate change, smolt timing, phenology, migration timing, salmon, time series analysis, ecology, chemistry, fisheries science
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