A 7500-Year Paleolimnological Record of Environmental Change and Salmon Abundance in the Oregon Coast Range
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Pacific salmon (Oncohynchus) abundance has declined significantly over the last century. The lack of a long-term context of salmon abundance hinders restoration efforts. A ca. 6000-year record of coho salmon abundance in the Oregon Coast Range was developed using paleolimnological techniques ($\delta^{15}$N and complimentary proxies) at Woahink Lake and compared to a control lake (Triangle Lake) that is inaccessible to salmon. Proxies of salmon abundance declined over the record, consistent with a reduction in coastal upwelling and marine forage caused by increasing Pacific sea-surface temperatures. The record suggests that salmon abundance was anomalously high at the time of early Euro-American settlement. The resolution of this study is limited by low sedimentation rates and additional factors influencing $\delta^{15}$N concentrations. Visual stratigraphy, magnetic susceptibility, loss-on-ignition, organic carbon and nitrogen, bulk density, biogenic silica, $\delta^{15}$N, $\delta^{13}$C, and pollen were used to reconstruct vegetation, earthquake disturbances, and the dune-barrage origin of the lake.