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Reconstruction of palaeo-environments of the northeastern Pacific Ocean during the Late Holocene based on multi-proxy analyses of marine sediments preserved in the coastal fjords of British Columbia, Canada.

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The west coast of Canada (British Columbia) is one of the major fjord coastlines of the world hosting about 150 fjords which are locally known as inlets. Due to unique oceanographic conditions and shallow sills at the mouth of a few unique inlets, anoxic bottom waters exist which allow the preservation of annually laminated sediments. Studies of these annually laminated sediment archives over the past decade, including two international drill ship investigations, have characterized the deglacial, sea level, palaeo-environmental and palaeo-seismic history of the British Columbia coastal area. These coastal depositional archives have also advanced our knowledge of the cyclical nature of the northeast Pacific ocean and climate system, as well as given evidence of infrequent, yet significant abrupt environmental changes which characterize it. Recently, the refinement of techniques to identify environmental proxies preserved in laminated sediments, using micro-paleontological, physical properties and geocrhonological analsyes, has allowed us to apply these same techniques to unlaminated marine sediments preserved in oxygenated fjord environments. These developments are greatly expanding the potential target study sites along the B.C. coast, thereby improving our regional understanding of the palaeo-environments of the northeast Pacific Ocean.