

**Sea level variation in Newfoundland and Labrador - glacio-isostatic, climatic and anthropogenic**

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Sea level history throughout Newfoundland and Labrador reflects the complex interaction of glacio-isostatic, climatic, and anthropogenic factors. Understanding of past sea-level variations, and of recent coastal evolution, is critical both to assessment of previous climatic change and to prediction of future change. Subsequent to deglaciation, marine limits were largely controlled by the former position of the Laurentide Inlandsis margin, both in Labrador and Newfoundland. Marine limits locally exceeded 100 m asl in the interior reaches of Labrador fjords, and on the Northern Peninsula. Limits show a gradually declining pattern of elevations along the west and northeast coasts of the island. All areas of the province, including the Avalon and Burin

peninsulas and the south coast, were subjected to postglacial sea levels above the present level. The pattern of limits suggests that isobases trended in a northeasterly-southwesterly orientation across the island. Subsequent isostatic recovery, combined with punctuated additions of meltwater from ablating continental glaciers, resulted in declining sea level through the early Holocene. Sea levels were below the present value along the southeastern and southern coasts during parts of the mid- and late Holocene. In the past 1000 years, transgressions have occurred along extensive segments of the Newfoundland coast. These ongoing changes in sea level are attributed to anthropogenically-driven climate changes, combined with ongoing isostatic adjustments.