

# PROJECTIONS OF RELATIVE SEA-LEVEL CHANGE IN THE CANADIAN ARCTIC

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Projections of relative sea-level rise in the 21st century are given for communities in the Canadian Arctic. Vertical crustal motion and gravitationally-driven redistribution of meltwater (sea-level fingerprinting) in the oceans lead to local projections of sea-level change that are substantially different than projections of the change to mean global sea level. The redistribution of meltwater in the oceans is non-uniform because of the changing gravitational pull of ice caps and ice sheets. It acts to reduce the amount of projected sea-level rise in the Arctic. The vertical land motion arising from postglacial rebound (PGR) is also determined and incorporated into projections of local relative sea-level change. Owing to the large rates of crustal uplift from PGR across a large region of central Arctic Canada, some communities are projected to experience relative sea-level fall despite projections of global sea-level rise. Where uplift rates are smaller, such as eastern Baffin Island and the western Canadian Arctic