

# **New Mapping of Old Landforms: The Paleogeography of Shell-bearing Raised Marine Deposits in Southeast Alaska and Their Potential Archaeological Significance**

Baichtal, J.F., Geologist, U.S. Forest Service, Tongass National Forest  
[jfbaichtal@fs.fed.us](mailto:jfbaichtal@fs.fed.us)

Carlson, R.J., Department of Archaeology, University of Cambridge  
[rjc75@cam.ac.uk](mailto:rjc75@cam.ac.uk) /Archaeologist, U.S. Forest Service, Tongass National Forest

An extensive literature search and years of field reconnaissance have resulted in a dataset of over 300 shell-bearing raised marine deposits throughout Southeast Alaska. It includes site location, elevation, and description when available, and over 170 radiocarbon dates beginning at 14,380 B.P. Interpretation of this data gives insight on the timing and complexity of isostatic crustal adjustments that resulted from glaciation and deglaciation, eustatic sea level change, and subsequent tectonic uplift. Comparisons with the paleogeographic modeling of the Queen Charlotte Islands/Hecate Strait (QCI/HS) region of British Columbia suggest a similar response to ice loading during the Last Glacial Maximum (LGM) resulting in a forebulge to the west of the ice front adjacent to Prince of Wales Island in the Alexander Archipelago. The Alexander forebulge would have created a much larger land mass than previously modeled, providing a nearly ice-free coastal plain available for plants, animals and human occupation as early as 13,500 B.P. This now submerged landform may have provided a refugium for flora and fauna for re-colonizing the islands after the LGM and an explanation for the absence of archaeological sites prior to 10,000 B.P. The great local variation in the sea level history of the study area induced by crustal displacement and eustatic sea level changes results in sites stranded above and submerged below present sea level.