

The Genesis of Fjords on the south coast of Newfoundland - New Possibilities

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Many fjords are the result of glacial modification of pre-existing ancient fluvial valley systems. Although we lack sufficient hard data, the fjords on the south coast of Newfoundland west of Fortune Bay appear to have a somewhat different genetic history. A number of different observations provide a basis for this interpretation. (1) There is a broad zone of bare rock that is at least 30 km wide parallel to the south coast that extends westwards to Port- aux-Basques. (2) The walls of the fjords are

oversteepened (overhang). (3) Most of these fjords have an extremely deep depression near their mouth.

These three major observations provide the basis for a more comprehensive interpretation of fjord genesis than simply glacial erosion. It is suggested that the absence of surficial sediment from the near-coastal zone of the south coast is the result of erosion by subglacial sheet flow subsequent to glacial modification of the pre-existing morphology. This high pressure water

was channelized where it intersected major subglacial river valleys. The oversteepening of fjord walls and the excavation of deep depressions near fjord mouths were accomplished by sediment-laden high pressure water in a process similar to sand

blasting.

This hypothesis has significant implications to the interpretation of glacier mechanics and the glacial history of southern Newfoundland.