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## Reconstructing the Cordilleran Ice Sheet in northern British Columbia during the Late Pleistocene climate reversals

**Helen Dulfer** and Martin Margold

Charles University, Faculty of Science, Department of Physical Geography and Geoecology, Czechia  
(helendulfer@gmail.com)

The Cordilleran Ice Sheet (CIS) repeatedly covered western Canada during the Pleistocene and attained a volume and area similar to that of the present-day Greenland Ice Sheet. Deglaciation of the CIS following the Last Glacial Maximum (LGM) directly affected atmosphere and ocean circulation, eustatic sea level, and human migration from Asia to North America. It has recently been shown that the rapid climate oscillations at the end of the Pleistocene had a dramatic effect on the CIS. Data on glacial isostatic adjustment and cosmogenic nuclide exposure ages indicate that abrupt warming at the onset of the Bølling-Allerød caused significant thinning of the ice sheet, resulting in a fifty percent reduction in mass, while the Younger Dryas cooling caused the expansion of alpine glaciers across the mountains of western Canada. However, the mountainous subglacial terrain makes it challenging to reconstruct the regional-scale deglaciation dynamics of the ice sheet, and its configuration during this period of rapid change remains poorly constrained.

Here we use the glacial landform record to reconstruct the ice sheet configuration for the central sector of the CIS, over the Cassiar and Omineca Mountains in northern British Columbia, during the Late Pleistocene climate reversals. We present the first regional-scale reconstruction of the CIS following the Bølling-Allerød warming, whereby the ice sheet was reduced to a labyrinth of valley glaciers fed by ice dispersal centres located over the Skeena Mountains in the south and Coast Mountains in the west. Additionally, numerous lateral and terminal late glacial moraines delineate the extent of alpine glaciers, ice caps and ice fields that regrew on mountain peaks above the CIS during the Younger Dryas. Cross-cutting relationships indicate that the valley glaciers of the CIS were slower to respond to the Younger Dryas cooling than the mountain glaciers.