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Glaciation Style, Paraglacial Reworking and the Geomorphological Record: The Challenges of Reconstructing Younger Dryas Glaciers

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The Younger Dryas witnessed renewed glaciation in Britain, with the readvance of ice masses that had survived the preceding Lateglacial Interstadial as well as the formation of new glaciers. It has been argued that the geomorphological record is both clear and complete enough to enable accurate reconstruction of these former ice masses at maximum extents. Recent investigations in the eastern Lake District in NW England, however, reveal the geomorphological record there to be considerably more complex and incomplete than previously assumed. In this area, which is characterised by an irregular, fault-controlled pattern of valley incision, detailed mapping has provided evidence for extensive summit glacierization during the Younger Dryas, although its fragmentary nature prevents confident reconstructions in former accumulation zones. Similarly, the volume of ice in the surrounding valleys appears to have been much greater than previously thought, although again the clarity and completeness of the landform record is highly variable. The latter most likely reflects differences in glaciation style over space and time, as well as the outcome of paraglacial reworking following ice margin retreat. Overall, this study suggests that the geomorphological record is not sufficiently clear to enable the confident reconstruction of Younger Dryas glaciers in this area, a finding that may also apply to areas with similar topographic attributes elsewhere.