STRUIE CHANNELS

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OS Grid Reference: NH672789

Highlights

This site provides a good example of a meltwater channel system formed during the melting of the Late Devensian ice-sheet; such systems are relatively rare in northern Scotland.

Introduction

The site (NH 670790) is located in Strathrory on the south side of a col at*c.* 208 m OD between the Dornoch Firth to the north and the Cromarty Firth to the south. It provides a good example of a glacial meltwater channel system in the northern Highlands. TheStruie Channels were first recorded by Peach *et al*. (1912) and subsequently have been mapped and described by J.S. Smith (1968) and Leftley (1991); otherwise they have attracted little published comment despite the relative scarcity of well-developed meltwater channel systems north of the Great Glen.

Description

The interest comprises a series of subparallel meltwater channels. The largest is up to 33 m deep, 89 m wide and 2.5 km long (Figure 7.10). In plan form, the channels show anastomosing and branching patterns, as well as parallel forms, and locally small cut-off loops lie perched above the main channel (Figure 7.10). According to J.S. Smith (1968), the channels originate at the lowest point of the col, but in fact they begin several hundred metres on the lee side and some 30–40 m above the lowest point. J.S. Smith (1968) also noted that another channel runs south from the next col to the west, and a cross channel extends eastwards from it to link with the Strathrory system. The channels are also associated with glaciofluvial deposits, including an esker at the south end of Loch Sheilan (NH 676780) and gravel terraces to the west in Strathrory, which have been partially quarried (Harris and Peacock, 1969; Mykura *et al*., 1978), revealing glaciolacustrine deposits (Leftley, 1991).

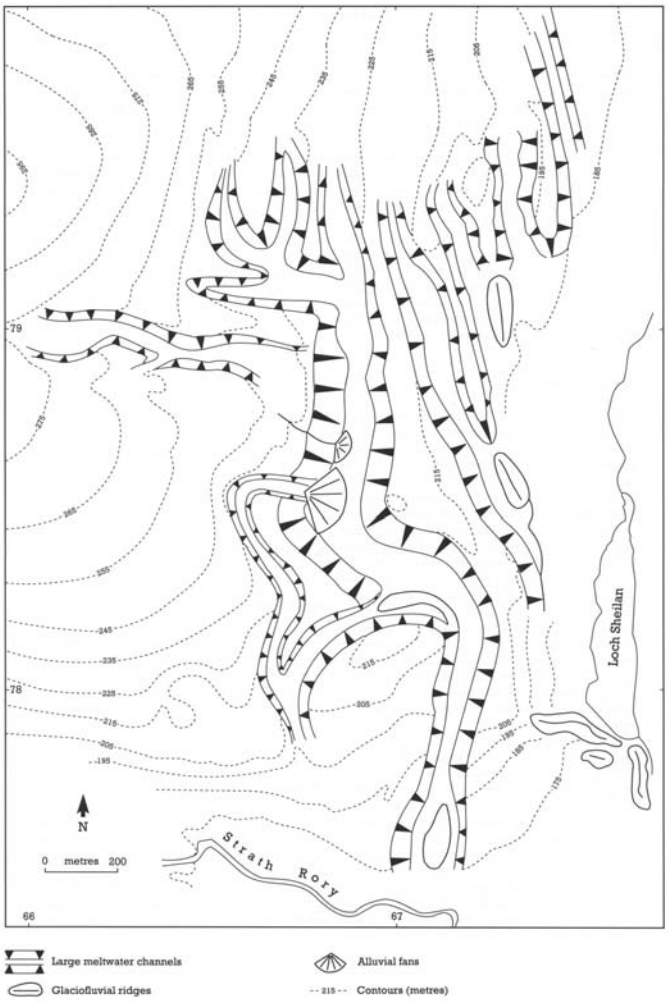

Figure 7.10: Geomorphology of the Struie meltwater channels, Strathrory (from J.S. Smith, 1968; Leftley, 1991).

Interpretation

Peach *et al*. (1912) interpreted the Struie Channels as representing ice-marginal drainage at successive levels along the edge of a wasting glacier which occupied the valley of the Allt Dearg immediately to the north of Strathrory. However, on account of their apparent relationship to the col, J.S. Smith (1968) considered that the channels were of subglacial origin and were associated with his Fortrose stage of deglaciation, when they carried meltwater south from the Dornoch Firth to the Cromarty Firth across the low col into Strathrory and then towards Scotsburn (NH 720763). Leftley (1991) also interpreted the channels as subglacial in origin, formed during a late stage in the deglaciation of the last ice-sheet, when a lobe of ice extended across the col from the north into Strathrory; this occurred penecontemporaneously with the development of a series of ice-dammed lakes in Strathrory.

In their anastomosing forms and location on the lee side of a col, theStruie Channels are similar to the superimposed subglacial forms described byClapperton (1968) from the Cheviots. Such channels are considered to reflect regional hydraulic gradients associated with active ice (*cf.*Sugden and John, 1976; Shreve, 1985a, 1985b). However, in other aspects, particularly their parallel forms, the Struie Channels resemble many of the channel systems described from lowland Scotland (Sissons, 1960, 1961a) and Scandinavia (Mannerfelt, 1945, 1949), which have been interpreted as marginal or submarginal in origin. The Struie site therefore provides an interesting assemblage of meltwater channel features that would benefit from further detailed investigation.

Meltwater channel systems are relatively rare in the northern Highlands of Scotland, but Struie is a particularly good example. It demonstrates many of the typical features of meltwater

channels in Scotland (see Carlops and Rammer Cleugh), including a combination of subglacial and marginal/submarginal characteristics. In the wider context of the Moray Firth area, the Struie Channels complement the interests of the depositional, glaciofluvial landform assemblages at Torvean, Kildrummie Kames and Littlemill.

Conclusions

The Struie channels were eroded by glacial rivers during the melting of the last (Late Devensian) ice-sheet, between approximately 14,000 and 13,000 years ago. They form part of a network of sites showing glacial meltwater landforms formed at this time, and are notable as one of the few well-known examples of a system of meltwater channels in northern Scotland.

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