

Crathes Warren Field: Geomorphic setting

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Warren Field, east of Crathes Castle, is a flat terrace surface at *c.* 55 m OD formed in an unknown thickness of sands and gravels (Figure 1). The terrace is very probably of fluvioglacial origin, though higher and older than those mapped by Brown (1992). To the east, the deeply incised narrow gorge of the Coy Burn, 10-15 m below the terrace surface, receives water draining the Loch of Park, 4 km to the north east of Warren Field.

Figure 1. Location of Warren Field and a vertical aerial photograph of the field showing geomorphic features

The aerial photograph (Figure 1) is orientated to the map. It shows two sets of geomorphic features marked by dark, slightly damper channels on the otherwise very well-drained terrace surface. These features are not all identifiable morphologically. The first set of channels (marked a to c on Figure 2) are generally longer east-west trending channels. The two parallel channels at extreme left seem to split to leave a very low ridge of pale sand, and the ridge is possibly a mid-channel bar. This ridge, not distinguishable topographically today, was the locus for the early Mesolithic pit alignment. The channels marked d to f in Figure 2 are parallel, more deeply entrenched in the terrace surface, and flow from north to south, widening slightly downslope. Channel c in the middle of the field seems to lead to channel f, suggesting that water flowed for a time contemporaneously in both sets of channels but it is thought that channel c is intercepted by channel f, making channel f later, and channels a-c are thought to predate channels d-f.

There is no direct dating of the channels: no channel examined contained organic matter that could be ¹⁴C dated. Archaeological features tend to be formed, or are more easily seen, on what are now drier patches of sand, but it is not thought that these features needed to avoid flowing water when they were made. None of the channels is thought to have been active when the archaeological features were made. Channels a-c are aligned with the general trend of glacial meltwater channels along Deeside (Brown 1992), and do not accord with the current southerly slope to the River Dee (Figure 1). Channels a-c are likely to be of Late Devensian age, formed during deglaciation (Brown 1993). Channels d-f cut into the terrace surface and flow to the incised Coy Burn (Figure 1). They are likely to have been active when the Coy Burn was downcutting. This period is not known with precision, but since the Coy Burn has an alluvial fan at its outlet leading to one of three fluvioglacial terraces of the Dee at Milton (Brown 1992), it is likely that these channels are also of Late Devensian age.

It is likely that the terrace surface was more topographically differentiated in the early Holocene period because much soil redistribution and surface smoothing has occurred in recent centuries. The early Mesolithic pit alignment follows closely the line of the probable sand bar between channels a and b, and it may be that in the early Mesolithic period this ridge was still topographically distinctive between two shallow but dry channels. The Coy Burn had become a major entrenched gorge to the east. This

setting has implications for the function of the early Mesolithic pit alignment, firstly because wild animals, if driven, are more likely to have run from west to east because the gorge of the Coy Burn slowed movement in the opposite direction, and secondly because driven animals might more effectively be caught in the gorge of the Coy Burn itself, rendering animal traps redundant. By the early Neolithic period when the timber 'hall' was constructed, channel c may still have been visible as a shallow dry channel. This seems to curl round the site of the 'hall', and may have been used to demarcate the site.

References

- Brown, I.M. (1992) *Deglaciation of the Dee Valley, N.E. Scotland*. Unpublished PhD thesis, University of Aberdeen.
- Brown, I.M. (1993) Pattern of deglaciation of the last (Late Devensian) Scottish ice sheet: evidence from ice-marginal deposits in the Dee valley, northeast Scotland. *Journal of Quaternary Science* **8**, 235-250.

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Crathes Warren Field: Intervisibility analyses

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The proximity of the early Neolithic timber 'hall' at Warren Field to the broadly contemporary 'hall' at Balbridie across the River Dee (Figure 1) raises questions about how these two monuments were articulated, and in particular whether the 'hall' at Balbridie could be seen from that at Warren Field.

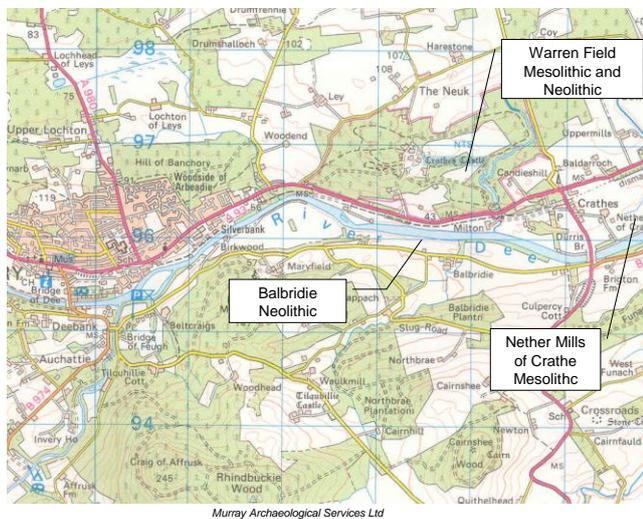


Figure 1. Locations of the early Neolithic timber 'halls' at Warren Field, Crathes and Balbridie

This was tested using [intervisibility-viewshed](#) analysis [through ArcView 3.2 in ArcGIS 9.2](#) using the Ordnance Survey Landform Profile Digital Terrain Model (DTM) (Winterbottom & Long 2006). No attempt was made to identify what could be seen from Warren Field, only whether Balbridie could be seen, and so the reconstruction was limited to a 2.0 km range. The model used a DTM with a 10.0 m [altitudinal](#)-resolution and assumed a figure of 1.6 m height stood at the Warren Field 'hall'. No vegetation was initially assumed to have been present. The initial model also assumes that the figure needed to see the ground at Balbridie, e.g that the 'hall' at Balbridie had no height. The results of this initial run (Figure 2) show that, even with no vegetation in the way, Balbridie cannot be seen from Warren Field. The north-facing slopes of the south bank of the River Dee can be seen, but the site of the 'hall' at Balbridie is below the southern shoulder of the flat fluvioglacial terrace at Warren Field. For Balbridie to be visible the 'hall' at Warren Field would need to have been built some 3-400 m to the south west, which would have presented no difficulties.

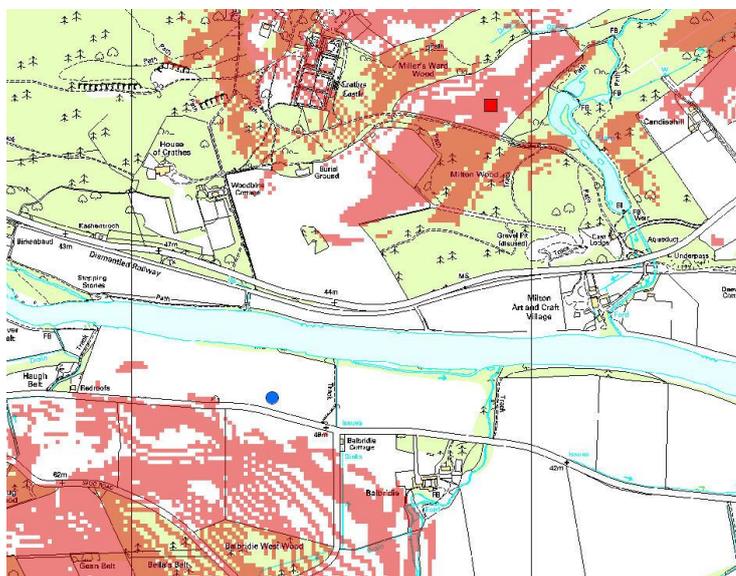


Figure 2. GIS analysis of the view from Warren Field (red square) to Balbridie (blue dot). Areas shaded in red can be seen from Warren Field assuming that no vegetation grew. Areas unshaded cannot be seen from Warren Field under these conditions

Reference

Winterbottom, S.J. & Long, D. (2006) From abstract digital models to rich virtual environments: landscape contexts in Kilmartin Glen, Scotland. *Journal of Archaeological Science* **33**, 1356-1367.