



South Wales RIGS Group Site Record

RIGS Description

SECTION A

General	South Wales
Site Name: Usk Glacier Terminal Moraine	File Number: AH_23 / AH_24
RIGS Number: 734	Surveyed by: AJ Humpage
Grid Reference: SO 34620 02930	Date of Visit: 1 September 2011
RIGS Category: Scientific , Educational	Date Registered: Unknown
Earth Science Category: Geomorphological	
Site Nature: Roadside	Documentation prepared by: AJH
Unitary Authority: Monmouthshire CC	Documentation last revised: 3 October 2011
OS 1:50,000 Sheet: 171	Photographic Record: See images attached to this report
OS 1:25,000 Explorer Sheet: 152	
BGS 1:50,000 : Sheet 232 (Abergavenny)	

RIGS Statement of Interest: This site forms part of a network of important scientific sites within the South Wales RIGS area associated with ice front still stand and re-advance in glaciated valleys and post-glacial fluvial development.

At least two ridge crests make up this feature which rises 50 - 60m above the surrounding area. The outermost moraine ridge terminates runs from Little Mill to Rhadyr, a little above Usk, although it is less distinct at its eastern end, and this marks the maximum limit reached by Late Devensian advance down the Usk valley. Sections indicate at least the upper parts of the ridge are dominated by reddish silty sandy till with some evidence of reworked glacio-fluvial deposits

Meltwater drainage from the ice margin at its maximum extent was complex and the outermost moraine ridge is fronted by a flat-floored marginal sandur trough, 500 m wide by 4 km long, underlain by gravel, running east from Little Mill, which collected drainage from exit tunnels in the ice and directed it eastwards to join a similar, but more direct sandur channel draining the eastern side of the ice-margin north of Rhadyr. On the west a similar sandur trough passes south from Little Mill towards Pontypool. As the ice-margin retreated from its maximum the ice-marginal sandur trough was abandoned, complex meltwater channel systems began to cut through the ridge, as illustrated at Rumble Street, before meltwater drainage was concentrated on the eastern side of the valley now occupied by the modern River Usk.

Geological setting/context:

This locality has long been recognised as the limit of the Last Glacial Maximum (LGM) in this part of the Welsh borderland and has been repeatedly incorporated, together with the neighbouring Wye valley moraine west of Hereford (Luckman 1970, Richards 2005)), into maps of the limits of the Late Devensian glaciation in the UK (Charlesworth 1929; Bowen 1973, 1981; Campbell and Bowen 1989, Thomas, 1997, Lewis & Thomas, 2005). The area was geologically surveyed between 1968 and 1982 (BGS 1990, Barclay 1989) and whilst extensive till deposits were recorded, relatively little additional data was recorded. Except for the work of Crimes et al. (1992) and Thomas (1997) and the excellent geomorphological, but regrettably unpublished, maps of Humpage (1992) and Williams (1968), very little other work has been undertaken in the area.

At the maximum of the Late Devensian glaciation the Usk valley acted as a major drainage outlet for ice flowing from the southeast margin of the Welsh ice-cap. The source area of ice was predominantly the eastern Brecon Beacons, together with some contribution from the Black Mountains and Central Wales. At its maximum the outlet glacier was probably no more than 10 km in length as the ice gradient and the low amplitude of relief of the main valley system would have merged it rapidly into the ice-cap. At its maximum extent it left the narrow confinement of the valley above Abergavenny and spread outwards as a piedmont lobe to terminate just short of Usk. At this time it was probably coeval on its eastern side with a series of small glaciers that drained the valleys of the adjacent Black Mountains and these glaciers may, in turn, have been coeval with the western margin of the Wye glacier termination northwest of Hereford (Luckman 1970, Richards, 2005). Retreat from the maximum was probably rapid and is marked by at least six major stages between Usk and Talybont alone, each representing either a temporary still-stand or a minor snout oscillation, that were responsible for generation of the distinctive suite of inter-related sediment-landform assemblages seen throughout the valley. Although no radiometric dates are available for this part of the Devensian margin it is likely that the Usk glacier probably achieved its maximum c. 20-22 ka and had retreated and disappeared, along with much of the Welsh ice-cap, by c.16 ka.

References:

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- Williams, G.J. (1968). *Contributions to the Pleistocene geomorphology of the middle and lower Usk*, unpublished PhD thesis, University of Wales.

SECTION B

PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green			
Accessibility:			
Comment: Private property and public roads			
Safety:			
Comment: Beware of fast moving traffic on main road and along narrow lanes			
Conservation status: There are no known designations of this location.			

OWNERSHIP/PLANNING CONTROL: Owner/tenant: Unknown - Various Planning Authority: Monmouthshire County Council Planning status/constraints/opportunities: There are no known planning constraints or opportunities.
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CONDITION, USE & MANAGEMENT: Present use: Mainly pastureland grazing and domestic properties Site condition: Generally good, Potential threats: Ongoing development. Site Management:
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SITE DEVELOPMENT: Potential use (general): Potential use (educational): Important site showing the maximum extent of the Late Devensian glaciation in SE Wales.
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Other comments:

Photographic Record



View of the non-ice contact face of the Usk Terminal Moraine, looking NE from Little Mill village



Outwash channels and alluvial fans are evident from the front of the moraine, onto glacio-fluvial sheet deposit surface in foreground.



The moraine forms a distinct landscape feature extending eastwards from Little Mill towards Monkswood.



View south along dry outwash channel system of Rumble Street.



View northwards along dry outwash channel system of Rumble Street



Section of exposed till and sand and gravel in the channel margins of Rumble Street.



Sandy till dominates on channel margins, but lenses of reworked sand and gravel are visible.