



South Wales RIGS Group Site Record

RIGS Description

SECTION A

General	South Wales
Site Name: Stanton Fluvio-glacial Terrace	File Number: AH_29
RIGS Number: 738	Surveyed by: AJ Humpage
Grid Reference: SO 31130 21560 to 32420 20890	Date of Visit: 9 February 2011
RIGS Category: Scientific	Date Registered: Unknown
Earth Science Category: Geomorphological, Sedimentological	
Site Nature: Mainly arable farmland	Documentation prepared by: AJH
Unitary Authority: Monmouthshire CC	Documentation last revised: 19 August 2011
OS 1:50,000 Sheet: 161	Photographic Record: See images attached to this report
OS 1:25,000 Explorer Sheet: OL 13	
BGS 1:50,000 Sheet: 214 (Talgarth) and 232 (Abergavenny)	
<p>RIGS Statement of Interest: This site forms part of a network of important scientific sites within the South Wales RIGS area associated with the maximum limit of the last (Devensian) Ice Age.</p> <p>The Stanton Glaciofluvial Terrace and adjacent Llanvihangel Moraine SSSI has long been an integral component of the controversy over the glaciation of the Black Mountains. The form of the moraine, with its crest line appearing to be convex to the south had implied ice advancing southwards down the Afon Honddu valley and it was on this basis that it was designated as a SSSI in 1976. However, recent work (Thomas and Humpage 2007) and (Humpage in prep) has cast doubt on this assumption on two counts. Firstly, the ability of the Honddu valley to support a 15km long valley glacier during the late Devensian Dimlington Stadial without an apparent significant ice accumulation zone or input from the Wye glacier to the north has been questioned (S. Carr pers comm), particularly when this area was extremely marginal to the Devensian ice limit. Secondly, the increasing evidence that indicate that the Moraine is dominated by southerly derived material including boulders of Millstone Grit (Marros Group) and limestone. It is thus now considered that the Llanvihangel Moraine represents the maximum northerly extent of the Usk Valley Glacier flowing northwards up the valley of the Gavenny and blocking the Honddu valley, forcing the subsequent river to flow northwards towards the River Monnow.</p> <p>Extensive outwash, probably derived from annual snow melt, flowing down the Honddu valley from the non-glaciated Black Mountains eroded the northern part of the moraine resulting in the arcuate form seen today.</p> <p>Designation of the Stanton Fluvio-glacial Terrace as a RIGS completes the story of the formation of the scheduled landform and places it in its proper context in terms of the Late Glacial Interglacial Transition landscape evolution.</p>	

Geological setting/context:

The glacial history of the Black Mountains is not well understood, as although extensive glacial deposits have been mapped in the dip-slope valleys of the Honddu, Grwyne Fawr and Grwyne Fechan (BGS 2004), there is no evidence of mid-Wales ice incursion over the northern escarpment of the Black Mountains. This is unlike other valleys to the west and east, such as the Rhiangoll (Howard 1903-04), and the Golden Valley (Dwerryhouse and Miller 1930) where Silurian erratics derived from the Builth Wells-Aberedw area were recorded. M'Caw (1936) suggested that mid-Wales ice did breach the northern escarpment of the Black Mountains escarpment at Gospel Pass [SO 235 351] at the head of the Honddu valley at an elevation of 542m OD, although this is much higher than the proven southwards penetration through the cols at Pungenffordd (320m OD) in the Rhiangoll and The Bage (176m OD) in the Golden Valley. However, to date no erratics of mid-Wales origin have been identified in the Honddu valley. Elsewhere, a glacial diamict containing occasional striated clasts is recorded above the Hermitage in the Grwyne Fechan [SO 228 252], but the clasts are all derived from the local Devonian rocks which form the Black Mountains (Lewis and Thomas 2005), and recent inspection (see RIGS report AH_04) suggests that much of the material at this site is derived from mass movement processes.

Recent geomorphological re-investigation of the moraine and a radiocarbon dating programme (Humpage in prep) has highlighted the significance of this area in the context of lowland valley glacier dynamics, however, it is acknowledged further research is required.

The Stanton terrace itself is a flat surface at between 145m OD to 130m OD gently falling towards the east. It is composed of sand and gravel with clasts typically cobble grade although larger boulders can be seen, usually along field boundaries after they have been ploughed up. The clasts are largely derived from the surrounding Old Red Sandstone bedrock, although re-working of morainic material provides other clasts. The Terrace is about 5m above modern river level, the Afon Honddu flowing in a narrow post-glacial Holocene alluvial floodplain, although in places it undercuts the Terrace and sections are visible (e.g. [331 190 221510]).

Between Stanton Manor Farm and Lower Stanton, the terrace deposits are more clay-rich, perhaps indicating the presence of an ephemeral lake impounded by a ice front oscillation or infilled kettle basin formed by stagnant ice eroded out of the moraine. Further glacio-lacustrine or fine grained fan or fan delta deposits are found in Stanton village issuing from the tributary valley north of Bryn Arw Hill.

The Terrace is constrained to the north by the bedrock of Llwygy Hill, and to the south by the Llanvihangel Moraine. Initially, the moraine may have entirely occupied this space, and thus impounded any water flowing down the Honddu valley. However, as the ice front began to retreat, the outwash, unable to flow southwards towards the Usk, flowed north-eastwards through the Pandy gap, and in doing so, undercut the Llanvihangel Moraine to create the arcuate form visible in this ridge today.

References:

British Geological Survey (2004). *Talgarth. England and Wales Sheet 214. Solid and Drift Geology. 1:50,000*. British Geological Survey, Keyworth, Nottingham.

Dwerryhouse, A.R. and Miller, A.A. (1930). Glaciation of the Clun Forest, Radnor Forest and some adjoining districts. *Quarterly Journal of the Geological Society of London*. 86, 96-129

Howard, F.T. (1903-04). Notes on glacial action in Brecknockshire and adjoining districts. *Transactions of the Cardiff Naturalists Society*. 5.

Humpage, A.J. (in prep). *Geological Assessment of Llanvihangel Crucorney Moraine SSSI*. BGS Commissioned Report.

Lewis, C.A. (1970) The Upper Wye and Usk Regions. In: CA Lewis (Ed). *The Glaciations of Wales and Adjacent Regions*. Longman, London.

Lewis, C.A. and Thomas, G.S.P. (2005) The Upper Wye and Usk Regions. In: CA Lewis and A.E. Richards (Eds). *The Glaciations of Wales and Adjacent Regions*. Logaston Press, Logaston, Herefordshire.

M'Caw, L.S. (1936). *The Black Mountains: A Physical, Agricultural and Geographical Survey 1932 – 1936*. Unpublished MA Thesis. Manchester University.

Thomas, G.S.P. and Humpage, A.J. (2007). Llanvihangel Crucorney,. In: S.J. Carr, C.G. Coleman, A.J. Humpage and R.A. Shakesby (Eds). *Quaternary of the Brecon Beacons: Field Guide*. Quaternary Research Association, London.

SECTION B

PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

Accessibility:



Comment: Accessible where crossed by public rights of way allowing features to be viewed. Otherwise, permission will be required.

Safety:



Comment: Open farmland.

Conservation status:

There are no known conservation designations on this RIGS.

OWNERSHIP/PLANNING CONTROL:

Owner/tenant: Unknown / various

Planning Authority: Monmouthshire County Council

Planning status/constraints/opportunities: There are no known planning constraints or opportunities

CONDITION, USE & MANAGEMENT:

Present use: Farmland

Site condition: Mainly open pastureland

Potential threats: None known at present

Site Management:

SITE DEVELOPMENT:

Potential use (general): detailed scientific research and geomorphological mapping, would benefit this site

Potential use (educational): Good site to view and explain glacial deposition and landform modification. A panel adjacent to the church looking west would aid interpretation.

Other comments:

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Photographic Record



Stanton Glaciofluvial Terrace in foreground with ridge of Llanvihangel Moraine beyond and Ysgrwyd Fawr in the background. View looking south-east from minor road.



Looking east across the terrace towards the Llanvihangel Moraine ridge and Llanvihangel Crucorney village church