



South Wales RIGS Group Site Record RIGS Description

SECTION A

General	South Wales
Site Name: The Bryn	File Number: AH_60
RIGS Number: 745	Surveyed by: AJ Humpage
Grid Reference: SO 31279 10966 to 34768 09134	Date of Visit: 18 June 2011
RIGS Category: Scientific	Date Registered: Unknown
Earth Science Category: Geomorphological	
Site Nature: Farmland and floodplain	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 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 and transition to Interglacial climate.</p> <p>This site, which includes both banks of the River Usk records ice down wasting in situ, the development of outwash systems and the subsequent development and migration of post-glacial fluvial systems. It may also record the increasing influence of human activity upon natural systems, with influxes of sediment possibly associated with land clearance, which has been mapped in detail (BGS 1990)</p> <p>At Llangottock Nigh Usk is developed a large morainic ridge form at the centre of which is a kettle hole which may delimit an ice stillstand or minor re-advance. Eastwards, extends a spread of clearly define outwash sand and gravels, some 8m above modern river level. These have been dissected by a series of post-glacial fluvial terraces, the lowest of which is the modern alluvial floodplain. This is still subject to significant channel alteration and abandoned channels and meander loops can be observed in this area as the river seeks a new equilibrium.</p> <p>The riverbank section at [SO 337 098] reveals organic peaty material in a probable former meander loop have been dated to c. cal. 4840BC - 5060BC (SUERC-13580 (GU-15172) and this may accord with increasing human influence as recorded elsewhere in the Usk catchment (Jones <i>et al.</i> 1985) as woodland clearance releases sediment.</p>	

Geological setting/context:

Around the small village of Llangatwg Dyffryn Wysg, in a linear strip along the north bank of the River Usk between Usk and Abergavenny, is an area of extensive kame-moraine topography. East of the Sewage Works, at The Bryn [SO 335 099 to SO 338 097], a river-bank cut on the outside of a large meander bend displays a 400m section that truncates a small kame mound and remnant sandur surface and both the main terraces of the Usk.

Beneath a mound at the western end of the section is up to 8m of coarse, dirty, sub to well-rounded, pebble to cobble gravels arranged in very crude sub-horizontal sets, occasionally separated by thin and impersistent red sands. Provenance is wholly local and dominated by Devonian rock types from the upper part of the Usk basin, together with a small proportion of Carboniferous Limestone clasts derived from outcrops to the northwest. A number of clasts are frost-shattered, a feature recognised elsewhere in the Usk Valley by Williams (1968) and Humpage (1992). These deposits are characteristic of Late Devensian sandur or ice-marginal deposits found elsewhere in the area.

Eastwards in the section the gravels pass rapidly beneath the deposits of a distinct terrace at some 5-6m above current river level that abuts against the eastern side of the mound. The deposits lying beneath this Upper Terrace are dominantly fine-grained in their upper part and comprise up to 5m of faintly laminated red silts and fine sands. At the base of the sections, however, at the water level, is a discontinuous outcrop of grey, partially laminated, organic clay, with small scattered plant debris, up to a metre in thickness (December 1996). Further to the east these organic deposits form a shallow trough, about 10m wide, striking into the section. In the centre of the trough, at and below the waterline, is a 40cm grey-black peat horizon containing scattered and often decomposed timber fragments. When first observed in July 1991 (Humpage 1992) the upper surface of the peat formed a bench or platform in the section and resting on and partially embedded in its surface was an *in situ* tree-trunk (species unknown) measuring 1.8m long by 40cm in diameter (now swept away). Above the peat horizon is up to 75cm of grey organic clay succeeded by 35cm of red silts and fine sands and a further thin organic clay. No detailed work or sampling has been undertaken at this site but a preliminary interpretation is that the organic deposits were formed in a meander cut-off at some stage during probably Late Holocene meander-belt migration and terrace development.

Further to the east the organic deposits are seen underlain by gravels, the upper part of which at one point is partially cemented. These gravels differ from those underlying the kame mound to the west in showing rapid vertical and lateral variation from large cobble to small pebble gravel and a well-sorted, sometimes open-work texture. Further east the Upper Terrace (T3) is erosionally truncated by the Lower Terrace (T2) but no deposits appear associated with it. This terrace occurs at a height of some 2m above the river water level.

References:

British Geological Survey (1990). *Abergavenny. England and Wales Sheet 232. Solid and Drift Geology. 1:50,000*. British Geological Survey, Keyworth, Nottingham.

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

Humpage, A.J. (1992). *The Late Quaternary Glacial History of part of the Middle and Lower Usk Valley*. Unpublished BSc. Thesis. University of Liverpool.

Humpage, A.J. and Thomas, G.S.P. (2007). Holocene River Terraces, The Bryn. 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.

Jones, R., Benson-Evans, K. and Chambers, F.M. (1985). Human Influences upon Sedimentation in Llangorse Lake, Wales. *Earth Surface Processes and Landforms*. 10, 1377 – 1382.

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.

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

Safety:



Comment:

Conservation status:

Site is within Brecon Beacons National Park

Part of the site is scheduled as Penpergwm Pond SSSI and the river channel and banks as part of the River Usk SSSI.

OWNERSHIP/PLANNING CONTROL:

Owner/tenant: Unknown / various

Planning Authority: Brecon Beacons National Park Authority

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

CONDITION, USE & MANAGEMENT:

Present use: Farmland plus village of The Bryn

Site condition: Generally good

Potential threats: Continuing development within the village. River bank erosion. Changes to A44 main road.

Site Management:

SITE DEVELOPMENT:

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

Potential use (educational): Good site to view and relate late glacial down wasting, outwash and Holocene river terrace and floodplain development .

Other comments:

Photographic Record



Eight metre high section in glacio-fluvial sheet (sandur) deposits east of The Bryn. Note flat terrace top.



Some large boulders are in place to reduce scour of riverbank



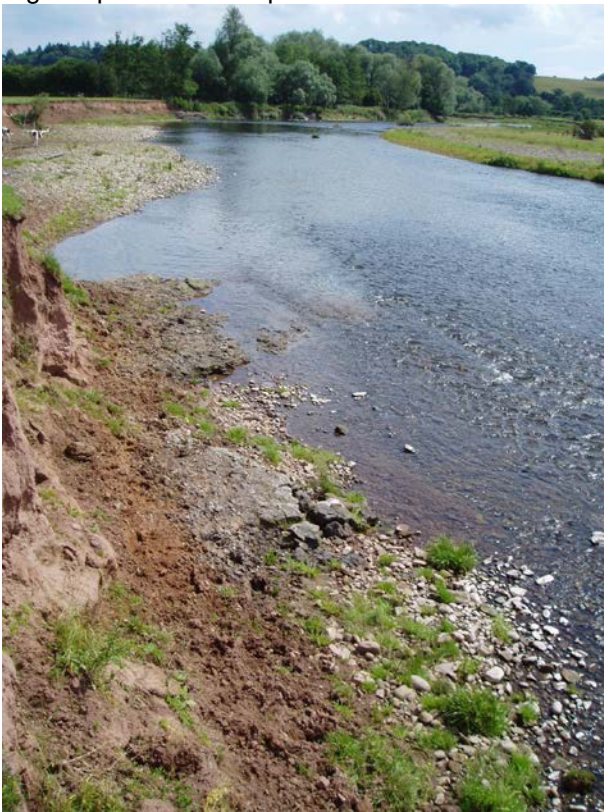
Aggrading floodplain deposits inside meander loop – view looking south-east



Eight metre high section in glacio-fluvial sheet (sandur) deposits east of The Bryn.



View south-east showing eroding river bank of lowest Holocene river terrace. Cows are stood on organic peat and mud platform.



View down stream showing organic peat layer being eroded on river bank in middle foreground



Organic peat layer being eroded on river bank, view looking upstream



Abandoned river channel east of The Bryn – view looking north



Abandoned river channel east of The Bryn – view looking north – present channel beyond trees on right.