



## South Wales RIGS Group Site Record

### RIGS Description

**SECTION A**

General	South Wales
<b>Site Name:</b> Cusop Dingle	<b>File Number:</b> site_214_6
<b>RIGS Number:</b> 682	<b>Surveyed by:</b> Gareth Owen
<b>Grid Reference:</b> SO 2330 4210 – SO 2570 3840	<b>Date of Visit:</b> 14 <sup>th</sup> July 2010
<b>RIGS Category:</b> Scientific	<b>Date Registered:</b>
<b>Earth Science Category:</b> Stratigraphy, palaeo-environment, sedimentology	<b>Owner:</b> Various, all unknown <b>Planning Authority:</b> Powys/ BBNPA/ Herefordshire
<b>Site Nature:</b> A long stream section	<b>Documentation prepared by:</b> Gareth Owen
<b>Unitary Authority:</b> Powys/ BBNPA/ Herefordshire	<b>Documentation last revised:</b> 14 <sup>th</sup> February 2011
<b>OS 1:50,000 Sheet:</b> 160	<b>Photographic Record:</b> Attached
<b>OS 1:25,000 Explorer Sheet:</b> OL13	
<b>BGS 1:50,000 Sheet:</b> E214	
<p><b>RIGS Statement of Interest:</b></p> <p>This site comprises a long stream section along the boundary between England and Wales. Sections exposed along the Dulas Brook and its tributaries, Crigiau Stream and Esgryn Brook, provide one of the two most continuous and representative inland profiles through the late Silurian (Přídolí)–early Devonian (Lochkovian) rock succession in the Welsh Borderland and Black Mountains area. The profile exposes the upper part of the Raglan Mudstone Formation and the lower part of the St Maughans Formation. The former contains the Townsend Tuff Bed and the ‘Psammosteus’ Limestone which are two regionally important stratigraphical marker horizons used to correlate rocks of this age across Wales and the south-west of England (the Anglo-Welsh Basin). The rocks provide evidence for changing environmental conditions within the Anglo-Welsh Basin with a shift from low-lying mudflats created by ephemeral distributary channels, through a depositional hiatus to alluvial plains dominated by perennially charged meandering rivers.</p>	

**Geological setting/context:**

Cusop Dingle is an important component of a network of 25 registered and proposed Non-marine Devonian GCR sites located within the Anglo-Welsh Basin. All the sites have been fully documented in the published GCR volume entitled 'The Old Red Sandstone of Great Britain' (Barclay *et al.*, 2005). The Anglo-Welsh Basin formed on the southern margin of newly amalgamated Laurussian (Old Red Sandstone) continent and the northern margin of the Rheic Ocean, and lay in an external setting relative to the main Caledonian Orogen during late Silurian and early Devonian times. Palaeomagnetic data suggest that the basin lay in sub-tropical latitudes of  $17 \pm 5^\circ\text{S}$  during Lower Devonian times, whilst the abundance of calcrete palaeosols within the basin-fill indicate a warm semi-arid climate with seasonal rainfall. Present-day limits of the Anglo-Welsh Basin are defined by structural elements of the Benton-Llandyfaelog-Welsh Borderland fault systems, although it is likely that the basin formerly had a much greater aerial extent with Lower ORS deposition extending to the Anglesey, Long Mountain and Clun Forest outliers. The subsequent mid-Devonian Acadian inversion event led to erosion of much of this Lower ORS cover, with sediment recycled southwards into the North Devon Basin, prior to the resumption of fluvial, lacustrine and marginal marine sedimentation in the Upper Devonian. The network of non-marine Devonian sites in the Anglo-Welsh Basin includes representatives of all the constituent formations, and illustrates various ORS red-bed facies ranging in age from the late Silurian to early Carboniferous. These sites also demonstrate the wide range of ORS deposits, including those of marginal marine, coastal floodplain, fluvial, alluvial plain, aeolian and lacustrine environments. Within this framework, the rocks exposed at Cusop Dingle provide an important record of environmental changes during late Silurian and early Devonian times. In addition, the sequence at Cusop Dingle includes two regionally important stratigraphical marker horizons in the Lower ORS, the Townsend Tuff Bed and the 'Psammosteus' Limestone, which facilitate correlation with other Lower ORS sequences exposed elsewhere in the Anglo-Welsh Basin.

**References:**

BARCLAY, W J, BROWNE, M A E , MCMILLAN, A A, PICKETT, E A , STONE, P & WILBY, P R. 2005. Geological Conservation Review Series Vol. 31; *The Old Red Sandstone of Great Britain*. JNCC

## SECTION B

### PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

#### Accessibility:

X

Comment: Parts of the section are inaccessible, whereas others are accessible via public road and footpath. Upstream of Brick Cottage is relatively accessible if willing to scramble up the streambed itself.

#### Safety:

X

Comment: At times of low water the main hazard is slippery rocks underfoot and small cliffs. At times of high water the site will be inaccessible.

**Conservation status:** This site has been highlighted as a proposed GCR site, and as such will become a proposed SSSI with successful GCR registration. Designation as RIGS will provide awareness of the importance of this site until such time as SSSI status is achieved.

### OWNERSHIP/PLANNING CONTROL:

**Owner/tenant:** There will be many owners, but none are known.

**Planning Authority:** BBNPA/ Herefordshire Country Council

**Planning status/constraints/opportunities:** Not known.

### CONDITION, USE & MANAGEMENT:

**Present use:** Stream section. Adjacent land is a mixture of grazing, forestry and private gardens.

**Site condition:** Variable – good in places, overgrown in others.

**Potential threats:** Growth of vegetation obscuring the rock exposures further

**Site Management:** Some control of vegetation may be needed in places.

### SITE DEVELOPMENT:

**Potential use (general):** The site is of use for scientific purposes, providing a uniquely complete sequence through the late Silurian – early Devonian of East Wales.

**Potential use (educational):** Poor, due to the difficult access in places and the water hazard.

### Other comments:

## Photographic Record



Photo 1: Dulas Brook cascades over fine sandstones and siltstone of the Raglan Mudstone Fmn (exposure approximately 2m high)



Photo 2: fine sandstones and siltstones forming channel bodies in the Raglan Mudstone Formation exposed in the banks of the Dulas Brook





Photo 3: Townsend Tuff Bed (upper part of sequence above hammer) exposed in banks of dulas brook



Photo 4: Psammosteus limestone forming a scarp and waterfall over which Crigiau Brook flows (cliff ~ 3m high)