

**REPORT OF THE HEAD OF PARK DIRECTION**

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**SUBJECT: LOCAL DEVELOPMENT PLAN: REGIONALLY IMPORTANT  
GEODIVERSITY SITES SUPPLEMENTARY PLANNING GUIDANCE (SPG)**

**Purpose of this Report**

1. This report seeks approval to add an additional site to the above guidance which was adopted in October 2011 and to publish the updated guidance for consultation.

**Background**

2. The Regionally Important Geodiversity Sites are a non-statutory geodiversity designation. The supplementary planning guidance helps to identify whether development has an adverse effect on the main features of interest within a RIGS. It is supplementary to Policy 10 'Local Sites of Nature Conservation or Geological Interest'.
3. Details of the new site are given in Appendix A. A map is awaited which will show the extent of the site.

**Financial considerations**

4. The Authority has funding available to carry out this consultation. It is a requirement to complete a consultation for such documents to be given weight in the Authority's planning decision making.

**Risk considerations**

5. The guidance when adopted will provide an updated position regarding sites to be protected under Policy 10 'Local Sites of Nature Conservation or Geological Interest'.

**Equality considerations**

6. The Public Equality Duty requires the Authority to have due regard to the need to eliminate discrimination, promote equality of opportunity and foster good relation between different communities. This means that, in the formative stages of our policies, procedure, practice or guidelines, the Authority needs to take into account what impact its decisions will have on people who are protected under the Equality Act 2010 (people who share a protected characteristic of age, sex, race, disability, sexual

orientation, gender reassignment, pregnancy and maternity, and religion or belief).

7. The proposal has been screened and an Equalities Impact Assessment is not required.

### **Welsh Language considerations**

8. The publication and consultation exercises will be carried out in accordance with the Welsh Language (Wales) Measure 2011 and the Welsh Language Standards Regulations (No.1) 2015.
9. Assessing impacts on the Welsh language is also an integral part of the Sustainability Appraisal process for Local Development Plan preparation.
10. Policy 10 'Local Sites of Nature Conservation or Geological Interest' of the Local Development has been subject to Appraisal and the attached draft guidance is subservient to that policy.

### **Consultation arrangement**

11. If approved for consultation, the updated Supplementary Planning Guidance will be published for consultation. A consultation period of 8 weeks will then take place, with any responses reported to the Authority for its consideration.

### **RECOMMENDATION**

- A. That Members approve the statement of interest element of attached Appendix A: Rhosyfelin for insertion in an updated Supplementary Planning Guidance on Regional Important Geodiversity Sites.**
- B. That Members give delegated powers to the Head of Park Direction to also include the map formally designating the site prior to carrying out consultation on the update to guidance.**

#### Background papers:

[Pembrokeshire Coast National Park Local Development Plan, September 2010](#)

Local Development Plan Manual – Welsh Government

<http://gov.wales/topics/planning/policy/policy-and-guidance-on-development-plans/ldpmanual/?lang=en>

Current Local Development Plan Supplementary Planning Guidance on Regionally Important Geodiversity Sites

[http://www.pembrokeshirecoast.org.uk/files/files/dev%20plans/AdoptedSPG/RIGS\\_SPG\\_FinalOct11Eng.pdf](http://www.pembrokeshirecoast.org.uk/files/files/dev%20plans/AdoptedSPG/RIGS_SPG_FinalOct11Eng.pdf)

Planning Policy Wales (Edition 8, July 2016):

<http://wales.gov.uk/topics/planning/policy/ppw/?jsessionid=959D17CBE44B4C21C123285AA5AE6E99?lang=en>

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## South West Wales RIGS Group Site Record

General	South West Wales
<b>Site Name:</b> Rhosyfelin	<b>File Number:</b> Pembs.Quat 12
<b>RIGS Number:</b> 564	<b>Surveyed by:</b> B.S.John & J.Downes
<b>Grid Reference:</b> SN117362	<b>Date of visit:</b> 15/10/14
<b>RIGS Category:</b> Scientific	<b>Date Registered:</b>
<b>Earth Science Category:</b> Quaternary	
<b>Unitary Authority:</b> Pembrokeshire County Council	<b>Documentation prepared by:</b> B.S.John & J. Downes
<b>Site Nature:</b> IS Static geomorphological site	<b>Documentation last revised:</b> 09/12/15
<b>1:50,000:</b> Sheet 145 Cardigan & Mynydd Preseli	<b>Photographic record:</b> CD
<b>1:10,000:</b> SN13NW	
<b>Geology 1:50,000:</b> BGS Sheet 210 Fishguard	

**RIGS Statement of Interest:** Craig Rhosyfelin is a craggy outcrop of Ordovician rhyolite in the valley of the Afon Brynberian. The rhyolite belongs to the Fishguard Volcanic Group which outcrops along the northern margin of Mynydd Preseli. This site is of particular interest since the rocks are exposed on a series of fracture planes and rhyolite samples from the rock face have recently been matched to "bluestone" fragments in the "debitage" at Stonehenge (See also Carn Menyn RIGS 555). Rhosyfelin is also significant in that it offers an opportunity to examine some of the geomorphological processes and landforms typical of the Pleistocene period in the area. There are examples of scoured surfaces, frost shattered crags and scree, glacial till, fluvio-glacial gravels and solifluction deposits. With regard to

the rock face, from a geomorphological perspective there is ample evidence that glacial, periglacial and biological processes have all contributed to the widening of joints and the accumulation of rock debris at the foot of the Rhosyfelin crag.

### **Addendum**

Recent archaeological excavations (Parker Pearson et al, 2015), however, have led to the assertion that part of the Craig Rhosyfelin outcrop and some of the stone debris at its base (including a large, roughly rectangular block) are the result of prehistoric quarrying. This suggestion has been strongly refuted by the current authors (John, Elis-Gruffydd & Downes, 2015a, 2015b) who have argued that the features of the site constitute an association of natural geomorphological landforms and Quaternary sediments. Continued research at the site, both geomorphological and archaeological, including the possible application of Terrestrial Cosmogenic Nuclide (surface exposure) dating, may help resolve the relative contributions of natural and anthropogenic processes at the site.

### **Geological setting:**

The rhyolitic crags at Rhosyfelin in the Brynberian valley appear to be an erosional remnant of the main outcrop of the Fishguard Volcanic Group as mapped by the BGS on the 1:50,000 map ( Sheet 210 Fishguard). These rhyolitic lavas are Mid Ordovician in age (Llanvirn stage). They dip steeply northwards ( $75^{\circ}$  according to the BGS) on the north flank of Mynydd Preseli. Field observations at Rhosyfelin reveal deep almost vertical fractures with numerous horizontal cross fractures. The rhyolite is a splintery dark blue rock which weathers to a light grey colour. A considerable amount of rock debris, accumulated at the foot of the steep rock face, has been uncovered during a recent dig by archaeologists.

The geomorphological history of Rhosyfelin is complex since the site has been overridden by the ice of the Irish Sea Glacier on at least two occasions during the last half million years. As on many of the other tors and crags in the area, there are signs of substantial ice smoothing and block removal; it is likely that Craig Rhosyfelin was once higher and more prominent than it is today. Glacial erratics from the north have also been transported into the locality (John, Elis-Gruffydd and Downes, 2015a, 2015b).

Fluvioglacial erosion has occurred at the site on a substantial scale. The main Brynberian river valley is steep sided and has clearly carried great volumes of meltwater. Subglacial meltwater flow is suggested by the small steep channel adjacent to the exposed rock face. It is possible that meltwater has flowed up and over a col under hydrostatic pressure before descending to join the main discharge route again at the end of the rocky spur. It is likely that these features are inherited from the Anglian glacial episode.

Apart from the broken rockfall debris and scree that has accumulated beneath the

rock face on a smoothed and undulating bedrock surface, there is an extensive exposure of Devensian glacial till containing many boulders and smaller clasts of dolerite and other erratics. This has been exposed during the archaeological dig. Near the end of the spur this till grades into a fluvio-glacial deposit of gravels incorporating many dolerite boulders and other rounded stones. Both bedrock and detached rock slabs in this vicinity are heavily abraded. Recent excavations have exposed a clay-rich horizon beneath the fluvio-glacial gravels that may represent a temporary pro-glacial lake on the floor of the valley. There are also periglacial and colluvial slope deposits up to 2m thick, with some internal variation, possibly representing climatic oscillations during the Holocene.

On the valley floor there is a well-developed flood plain where river gravels are currently being reworked during swings by the river. The process of crag diminution by rockfalls is ongoing, with biological processes (root expansion in joints and fissures) currently prominent.

#### **Network context of the site:**

Quaternary and Geomorphological RIGS in S.W. Wales are assigned to one or more of the following networks.

1. Pre-Quaternary landscape evolution.
2. Glacial Geomorphology. This network includes such landforms as moraines, cirques, protalus ramparts and kettleholes, and deposits composed of till, moraine and scree, for example.
3. Periglacial Geomorphology. Sub-networks are landforms and deposits formed in environments around the fringes of glacial terrains. They include pingos, patterned ground, ice wedges and solifluction features.
4. Fluvio-glacial Geomorphology. Sub-networks are landforms that include alluvial fans, patterned ground and meltwater channels, together with their associated deposits.
5. Fluvial Geomorphology. Landforms are terraces, meanders, bars, waterfalls, gorges and palaeochannels, for example, which are associated with a variety of deposits.
6. Holocene Geomorphology. The landforms include raised bogs and screes, whilst the deposits comprise peat and gravel, for example.
7. Coastal Geomorphology. Landforms are diverse, comprising spits, dune fields, beaches and cusps, among several others. Associated deposits include dune sands and shingle.
8. Karst.

This RIGS illustrates Glacial Geomorphology including such deposits as glacial till and ice scoured surfaces (Net 2) Periglacial Geomorphological features such as solifluction deposits (head) and scree (Net. 3). Features of Fluvioglacial Geomorphology (Net. 4) include meltwater channels and possible lacustrine deposits.

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#### **PRACTICAL CONSIDERATIONS:**

**Accessibility:** This site is approached from a minor road leading off from the B4329 about 1 km south west of Crosswell village. Where the road crosses the Afon Brynberian by a ford there is a public footpath which provides access to the site via a gate.

**Safety.** The exposed rocks are sharp and splintery. Strong footwear is recommended.

**Conservation Status:** There are no other known conservation designations in the area covered by this RIGS

**OWNERSHIP/PLANNING CONTROL:**

**Owner:** Huw and Dilys Davies, Rhosfarched Fawr, Brynberian, CRYMYCH, Pems. SA41 3UB

**Planning Authority:** Pembrokeshire Coast National Park.

**Planning status/constraints and opportunities:** There are no known plans to develop or modify the area covered by this RIGS

**CONDITION, USE & MANAGEMENT:**

**Present use:** Recreational use by walkers. The surrounding farmland is used for livestock grazing.

**Site condition:** The site is in a relatively unspoilt condition although archaeological excavations have involved the removal of top soil, scree and fallen slabs on the north-west side of the rock outcrop.. .

**Potential threats:** The site may become well known to the public if the archaeological work attracts much media attention.

**Site Management:** At present, there are no particular site management requirements, but liaison with the landowners should be maintained.

**SITE DEVELOPMENT:**

**Potential use (general):** Although the geomorphology of the area is highly specialised, the significance of the rocks as a possible source of some of the rhyolitic fragments at Stonehenge suggests that a public awareness initiative may be appropriate.

**Potential use (educational):** The rocks are of interest to geologists studying the Lower Palaeozoic igneous rocks of SW Wales, to geomorphologists studying the effects of Pleistocene glacial episodes on the flanks of Preseli, and also to archaeologists interested in the origin of some of the rhyolitic debris at Stonehenge.

**Other comments:** The archaeological dig site has now been infilled and the site is accessible via a public footpath.