

**CYNGOR CEFN GWLAD CYMRU  
COUNTRYSIDE COUNCIL FOR WALES**

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

**VALE OF GLAMORGAN**

**SOUTHERNDOWN COAST**

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| <b><u>Date of Notification:</u></b>    | 1965, 1983, 1998   |
| <b><u>National Grid Reference:</u></b> | SS 866755 to SS 897717   |
| <b><u>O.S. Maps:</u></b>               | 1:50,000 Sheet number: 170<br>1:10,000 Sheet number: SS 87 NE & SE |
| <b><u>Site Area:</u></b>               | 153.5 ha   |

**Description:**

This 5km stretch of coastline lies to the south east of Ogmores-by-Sea, on the northern shore of the Bristol Channel. It is of special interest for its rock exposures, and for the vegetation of the cliff-tops and valleys which includes species-rich neutral, calcareous and maritime grassland, scrub and woodland and supports several rare plant species.

**GEOLOGY**

Permian-Triassic

The stretch of coastline between the mouth of the Ogmores River and Bwlch Kate Anthony provides excellent three dimensional sections through Triassic alluvial fan deposits, formed by both stream and mudflow processes on the palaeoslope of a Carboniferous Limestone landmass. Particle size in the deposits varies markedly between clay grade and boulders approaching three metres in diameter. The fan deposits are channelled into the underlying Carboniferous Limestone. This is an important site for the study of Triassic sediments, palaeoenvironments and geography.

Mineralogy of Wales

Coastal sections between Ogmores-by-Sea and Southerndown expose mineralisation developed along the unconformity between Mesozoic rocks and underlying Carboniferous Limestone.

Between Bwlch y Ballring and Bwlch y Gro an outlier of Triassic breccia unconformably overlies the Carboniferous Limestone and penetrates locally into the limestone along its bedding planes; thus indicating that the planes were enlarged by solution before the breccia was deposited. Near the unconformity, the Triassic rocks are cut by calcite veins containing flecks of galena and concretionary swellings of platy barytes.

Along the coast between Pant y Slade and Fairy Cave, the unconformity on the Carboniferous Limestone lies on a wave-cut platform overlain by Lower Jurassic (Lias) breccias which form on the cliff face on the landward side. The basal breccia is pervasively mineralised with calcite, baryte and disseminated coarse galena, with at least three generations of mineralisation are

distinguishable. The mineralisation is syngenetic in character and is the result of a fumarolic system extruding on the Liassic sea floor.

Similar mineralisation, but in the form of epigenetic veins, can be seen in the underlying Carboniferous Limestone at Pant y Slade. The veins pass upwards into solution fissures filled with mineralised Liassic breccias, but do not cut through the unconformity as such. Concentrations of mineralisation in the basal Liassic breccia, however, correspond with an upward projection of the veins and fissures, suggesting that solution fractures in the Carboniferous Limestone, as well as becoming infilled with Lias debris, acted as conduits for mineralising fluids.

This part of the site is of the highest scientific value in demonstrating epigenetic expressions of an early Jurassic mineralising event in the Carboniferous and Triassic rocks, and syngenetic aspects in the strata of early Jurassic age.

### Hettangian Pliensbachian

The length of cliff-line and foreshore south east of Black Rocks is one of the most classic British examples of lateral facies changes in ancient sediments. The site shows better than any other the lateral and vertical changes of facies from a marginal (“littoral”) setting to an offshore environment in rocks of Early Jurassic age. The fine coastal sections of the site make it possible to see unrivalled examples of the Liassic marginal Sutton Stone and Southerndown Beds and the offshore Blue Lias in relation to the eroded Carboniferous Limestone “island” which formed a topographic high here during Early Jurassic times. A key locality for demonstrating the diachronous relationships of facies by means of faunal evidence.

### **BIOLOGY**

A range of grassland types occur along this stretch of coast, their distribution being related to aspect and soil depth. Calcicolous grassland has developed on steep, south-facing slopes where the soil is thin. Typical species include quaking-grass *Briza media*, sheep's-fescue *Festuca ovina*, crested hair-grass *Koeleria macrantha*, glaucous sedge *Carex flacca*, lady's-bedstraw *Galium verum*, common rock-rose *Helianthemum nummularium*, salad burnet *Sanquisorba minor* and wild thyme *Thymus polytrichus*.

Species-rich neutral grassland is most frequent on north-facing slopes and where the soil is deeper. Most of this grassland is still influenced by the calcareous nature of the soils, as indicated by the presence of such species as false brome *Brachypodium sylvaticum*, glaucous sedge, crested hair-grass, lady's bedstraw and salad burnet. Other characteristic species include bird's-foot trefoil *Lotus corniculatus*, cowslip *Primula veris* and common dog-violet *Viola riviniana*. Some areas of more agriculturally modified neutral grassland also occur within the site, mainly on the shallower slopes but often in close association with less improved grassland types.

Both the calcareous and neutral grassland grade into maritime grassland in those areas most exposed to salt spray. This is typified by the presence of such species as red fescue *Festuca rubra* subsp. *juncea*, sea carrot *Daucus carota* subsp. *gummifer* and buck's-horn plantain *Plantago coronopus*. Some of the maritime grassland also includes species such as common rockrose, lady's bedstraw and salad burnet which are characteristic of calcareous substrates. Cwm Mawr provides a very good example of an unusually complete coastal transition from grassland to

wind-pruned scrub and woodland. Much of the scrub is dominated by blackthorn and the woodland by ash and sycamore. At the mouth of Cwm Mawr is a shallow stream with extensive tufa deposits supporting a wetland community dominated by yellow iris *Iris pseudacorus*, water horsetail *Equisetum fluviatile* and fool's water-cress *Apium nodiflorum*.

The nationally rare tuberous thistle *Cirsium tuberosum*, purple gromwell *Lithospermum purpurocaeruleum* and shore dock *Rumex rupestris* occur in the southern part of the site. Nationally scarce species include maidenhair fern *Adiantum capillus-veneris*, wild cabbage *Brassica oleracea*, sea stork's bill *Erodium maritimum* and stinking hellebore *Helleborus foetidus*.

**Remarks:**

*Rumex rupestris* is listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).

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