

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

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

POWYS/CEREDIGION

ELENYDD

Dates of Notification: 1954, 1959, 1971, 1978, 1979, 1986 and 1992

National Grid Reference: SN 860660 (approx centre of site)

O.S. Maps: 1:50,000 Sheet number: 147
1:25,000 Sheet number: SN 76, 77, 85, 86, 87, 95, 96 & 97

Site Area: 22,770 ha

Description:

Biological

This is one of the most important areas of hill land in Wales for nature conservation. It is of outstanding interest for its range of breeding birds of upland and woodland. Much of the hill vegetation is also of special interest.

The area is built of rocks of Silurian and Ordovician age, and the landform is typical of the 'slate uplands' of south-central Wales, with plateau separated by steep-sided valleys. The moorland plateau is largely covered by blanket bog vegetation. Purple moor-grass *Molinia caerulea* is the dominant plant of these hills, occurring in valley mires, on hill slopes and on the plateau tops. This dominance is possibly due to management effects of grazing and burning. On the better developed summit blanket bog there is less purple moor-grass and the vegetation may be dominated by hare's-tail cottongrass *Eriophorum vaginatum* or deergrass *Trichophorum cespitosum*, and locally heather *Calluna vulgaris* can be well represented or dominant. Where the water table is high, as on some watershed mires or in shallow depressions on hill slopes, these communities can be rich in bog-moss species *Sphagnum spp.*, and support a range of higher plants including cranberry *Vaccinium oxycoccus*, cross-leaved heath *Erica tetralix*, common cottongrass *Eriophorum angustifolium* and bog asphodel *Narthecium ossifragum*. Bog-rosemary *Andromeda polifolia*, here near the southern end of its range, occurs in several locations. Three particularly interesting localities within the site are the watershed mires at the headwaters of the Rivers Elan and Claerwen, the well developed pool and hummock mire at Cors Lwyd and the eroded, but still actively growing, mire complex at Cors Gôch. These areas support rare plant species.

The acid grasslands on the site tend to have a high representation of purple moor-grass, heath rush *Juncus squarrosus* or mat-grass *Nardus stricta*. Some freely drained areas support bent/fescue *Agrostis/Festuca* grassland and others have dwarf-shrub heath dominated by heather or bilberry *Vaccinium myrtillus*. Hillside and streamside flushes are botanically diverse and some support uncommon species, including two localities for bog orchid *Hammarbya paludosa*.

Crags, scree slopes and stream gorges provide contrasting habitat types that support species that would otherwise be suppressed by grazing, and in areas of high humidity support a spectrum of mosses characteristic of a type confined to the Western Atlantic seaboard. Some of the sessile oak woodlands and mixed woodlands included within the site for ornithological reasons are also of interest for the occurrence of unusual lichens. Mountain lakes within the site support a number of rare species, including water lobelia *Lobelia dortmanna*, and water-courses, together with their riparian vegetation, are of botanical interest. An additional feature of scientific interest is the occurrence of plant species tolerant of heavy metals, which grow on old mine workings.

Elenydd is one of the two most important areas in Wales for upland bird species, the other site being Berwyn. It forms the feeding range for a large part of the British population of red kite, which in winter is dependent on the supplies of sheep carrion to be found on the sheepwalks. The availability of carrion also helps support what is probably the greatest density of ravens in Europe, and also large numbers of buzzard. Other raptors feeding or breeding in the upland areas include peregrine, merlin, hen harrier and short-eared owl. Red grouse breed in heather areas, ring ouzel frequent craggy areas, and the hill slopes support populations of wheatear, whinchat and stonechat. Lakes, reservoirs, rivers and streams provide a habitat for goosander, teal, dipper and common sandpiper. The summit plateau mire communities support important wader populations, with possibly the highest Welsh breeding populations of dunlin and golden plover. Valley mires have good populations of snipe, curlew and lapwing. The woodlands of Elenydd support an outstanding assemblage of breeding bird species. The broadleaved woodland has high populations of breeding summer migrants such as pied flycatcher, redstart and warblers, in addition to the resident species that include woodpeckers, tits, nuthatch and treecreeper. The coniferous woodland contributes additional species, in particular long-eared owl, sparrowhawk, siskin and crossbill. Raptors hunting the open hill breed in both semi-natural and plantation woodland.

Physical

Mass Movement (Cwm Ddu): This locality was produced by a very large rotational slump in the Llandovery Series (Silurian). It is remarkable for its size (500 metres wide, 1 km long and 250 metres in vertical range), its spectacularly cliffed backface and a classic debris tongue stretching out from the slump amphitheatre (cwm) across the low-angle footslope and the narrow floodplain of the Ystwyth. This complete set of features is not as well displayed anywhere else in Great Britain.

Pleistocene/Quaternary: Cwm Ddu and Cwm Tinwen are important features interpreted as nivation cirques. They are exceptional in occurring at much lower altitudes than predicted for true glacial cirques in the area and are believed to have originated through nivation processes during the Devensian. In Cwm Tinwen a large ridge of debris is thought to have formed from the accumulation of frost-shattered material below a large snowpatch. In contrast, the more open, cirque-like basin of Cwm Ddu is floored by terraced superficial deposits. While it has been proposed that this debris accumulated as solifluction deposits beneath an inert mass of neve, recent examination suggests that this explanation is not entirely satisfactory; possibly glacial processes may have been responsible for some of the deposits. The interpretation of the landforms and sediments in Cwm Ddu and Cwm Tinwen, with their bearing on whether these

sites acted as major ice sources during the Devensian, is crucial to the understanding of Late Pleistocene events and processes in the area. The contrasting and exceptional features exhibited by the two sites, and their still controversial origin, makes them important localities for Pleistocene studies.

The bog at the head of the River Elan (Cors Lwyd) is an important palynological site recording detailed evidence for vegetation and environmental changes in central Wales during the Devensian Late-glacial and Holocene. It is the only site so far studied in central Wales with a pollen record extending back to the Devensian Late-glacial. The extensive and detailed nature of the pollen stratigraphic record, together with the location of the site, make the bog an essential site for studies of regional variations in vegetation history in Wales.

Fluvial Geomorphology: The upper Elan is a particularly good example of an upland meandering stream in a low relief floodplain. It shows several contrasting planform types in a relatively confined area. The dominant channel change characteristics are lateral growth, loop expansion and relative stabilisation against a confining northern valley wall and southern terraces. Confined cut banks in the section are being actively eroded and provide the main sources of sediment. Sedimentation occurs locally as point bars and medial bars. The upper Elan is representative of an upland valley meandering channel. It is particularly important for the detailed studies that have been carried out and the contrast it provides with lowland meandering sections altered by human interference.

Mineralogy (Cwm Ystwyth Mine): The extensive workings of this long-established mine display a uniquely interesting association between structure and mineralisation. Two early lodes show lateral zoning and are cut and downthrown by a third, later lode which shows vertical zoning. Minerals found include galena, sphalerite, pyrite, chalcopyrite, quartz and calcite. The importance of this site lies in its structure and in the chronology of its mineralisation, rather than in the occurrence of rare mineral species.

Llandovery (Caban Coch Quarry): This locality shows the type section of the Caban Coch Conglomerate, a distinctive deposit formed as a proximal submarine fan in early Silurian times. The conglomeratic unit is around 100 metres in thickness, with shales in its middle part, and it shows sole marks proving derivation from the south-east. This is an important site for studies of the Llandovery basin and sedimentary environments.

Remarks:

The site includes Nant Irfon National Nature Reserve (141.5 ha), declared in 1962, 1972 and 1983 and owned and managed by the Countryside Council for Wales. A further 12 ha at Bwlchgwaller in the Ystwyth Forest are managed by the Council as a Forest Nature Reserve by agreement with the Forestry Commission. The site also includes the Llanerch-yrfa nature reserve (14 ha) managed by the Brecknock Wildlife Trust on a lease from the owners.

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