

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

POWYS

CARN GAFALLT

Date of Notification: 1994

National Grid Reference: SN950645

O.S. Maps: 1:50,000 Sheet number: 147
1:25,000 Sheet number: SN 86/96

Site Area: 385 ha

Description:

Carn Gafallt is an excellent example of a predominantly upland site supporting a diverse range of habitat types. These include nationally important examples of semi-natural broadleaved woodland, above which is situated one of the largest expanses of heather moorland in Brecknock. The area is not only important for its plant communities, but also supports notable populations of birds, invertebrates and lower plants.

The site is situated in a triangle of land rising up from the valleys formed by the rivers Wye and Elan and the Dulas Brook, 3 km south-west of Rhayader. Most of the land lies above 300 m, rising to 466 m at its highest point. The solid geology of the area consists of Llandovery rocks of Silurian age, although the picture is complicated in the south-eastern corner by the presence of Ashgill rocks of Ordovician age. Both are sedimentary rocks which give rise to nutrient-deficient, acid soils.

A discontinuous belt of sessile oakwood lies around the often steep north-western, western and southern flanks of Carn Gafallt. The most widespread community present is characterised by a canopy of sessile oak *Quercus petraea* and downy birch *Betula pubescens*, with a sparse shrub layer and a well developed ground layer comprising mosses such as *Dicranum majus*, *Rhytidiadelphus loreus*, *Polytrichum formosum*, *Pleurozium schreberi* and *Plagiothecium undulatum*. The field layer is variously dominated by grasses, bracken or ericoid sub-shrubs such as bilberry *Vaccinium myrtillus*. The latter is relatively common especially in areas not affected by heavy grazing. One of the three sub-communities present is characterised by a consistently rich bryophyte flora which has developed on hard grit boulder screes. The shaded rocks and scree below the woodland canopy provide a refuge for a number of Atlantic, sub-Atlantic and Western British mosses and liverworts, including *Bazzania trilobata*, *Douinia ovata*, *Lepidozia cupressina*, *Oxystegus tenuirostris*, *Plagiochila spinulosa*, *Scapania gracilis* and the nationally scarce *Harpanthus scutatus* and *Plagiothecium laetum*. The rocks also support the nationally scarce lichens *Trapeliopsis glaucolepidea* and *Verrucaria rheitrophila*.

The mature trees support a great variety of epiphytic lower plants. The lichens characteristic of damp acidic bark include frequent *Hypogymnia physodes*, *Parmelia saxatilis* and *Platismatia glauca*, along with several other typical eu-oceanic species such as *Mycoblastus sanguinaris*, *Ochrolechia tartarea*, *Sphaerophorus globosus* and the nationally scarce *Trapelia corticola*.

Lichens typical of less acidic bark include a good selection of ancient woodland species such as *Arthonia vinosa*, *Lobaria pulmonaria*, *L. virens*, *Pachyphiale carneola*, *Parmelia caperata*, *Parmeliella triptophylla*, *Sticta limbata*, *Thelotrema lepadinum* and the nationally scarce *Gyalideopsis muscicola* and *Chromatochlamys muscorum*. Mosses found on less acidic bark include the sub-Atlantic *Hypnum cupressiforme* var. *resupinatum*. Lichens present on dry bark include *Cliostomum griffithii*, *Calicium viride* and the nationally scarce *Bactrospora corticola* and *Chrysothrix chrysophthalma*. Dead wood provides another important habitat for lower plants; species here include the Western British liverwort *Nowellia curvifolia* and the nationally scarce lichens *Hypocenomyce caradocensis* and *Micarea adnata*.

The many ancient oaks also host a dead wood beetle fauna of great interest. Species known from the site include the longhorn beetle *Pyrrhidium sanguineum*, a nationally rare species confined to the Welsh borders, the cardinal beetle *Schizotus pectinicornis* and the canopy-hunting ground beetle *Calosoma inquisitor*. All these are to some extent associated with undisturbed ancient woodland and abundant dead wood microhabitats. Outside of Dinefwr Deer Park, the Carn Gafallt woodlands are probably the most important site for dead wood Coleoptera in mid-Wales.

Areas of mixed broadleaved woodland are also included in the site, lying on gentler slopes on the south side of the Dulas, where the rock is richer in bases, and numerous flushes occur. Patches are dominated by oak, ash *Fraxinus excelsior*, alder *Alnus glutinosa* and downy birch, with a plentiful shrub layer of hazel *Corylus avellana* and hawthorn *Crataegus monogyna*. Parts of the woodland floor are again boulder-strewn and this niche (with the flushes) has produced a rich species diversity. Plants in the boulder scree include lords-and-ladies *Arum maculatum*, enchanter's-nightshade *Circaea lutetiana*, climbing corydalis *Corydalis claviculata* and three-nerved sandwort *Moehringia trinervia*. The series of peaty flushes within these woodland support plants such as marsh St. John's-wort *Hypericum elodes*, bogbean *Menyanthes trifoliata*, common butterwort *Pinguicula vulgaris* and white beak-sedge *Rhynchospora alba*. Other woodland communities present include small stands of damp alder-ash-yellow pimpernel *Lysimachia nemorum* woodland and ash-rowan *Sorbus aucuparia*-dog's mercury *Mercurialis perennis* woodland, both of which occur near the base of slopes at the eastern end of the common.

Approximately half of the open moorland area is covered in dense stands of heather *Calluna vulgaris*, which occurs mainly as heather-bilberry *Vaccinium myrtillus* heath. This community is characterised by a dominance of heather together with frequent bilberry, wavy hair-grass *Deschampsia flexuosa* and the bryophytes *Hypnum jutlandicum*, *Dicranum scoparium* and *Pleurozium schreberi*. Crowberry *Empetrum nigrum* can also be abundant. Two sub-communities are present, with the heather sub-community occurring most frequently on the flat summit areas of the common and the cowberry *Vaccinium vitis-idaea*-lichen *Cladonia impexa* sub-community on many of the slopes with eastern, northern or western aspects. The other main heather-dominated community is heather-western gorse *Ulex gallii* heath, which occurs on south facing dry slopes. Here western gorse and bell heather *Erica cinerea* are scattered amongst the heather with small amounts of bilberry. Both of these main communities occur as extensive pure stands and as mosaics with other upland vegetation types, such as bilberry-wavy hair-grass heath and the bracken *Pteridium aquilinum*-heath bedstraw *Galium saxatile* community. The second most extensive habitat on the open common is dominated by bracken, where it occurs as pure stands or as a mosaic with other upland or heath communities. Closely associated with the bracken are small areas of freely drained bent/fescue *Agrostis/Festuca* grassland.

On the undulating open hill land of Carn Gafallt, where drainage is impeded, there are some relatively small areas of deep peat which support several blanket mire and bog communities. The most widespread vegetation here is characterised by an abundance of hare's-tail

cottongrass *Eriophorum vaginatum* with heather, common cottongrass *Eriophorum angustifolium* and cross-leaved heath *Erica tetralix*. The ericoids, bilberry and crowberry are also prominent. The regionally rare lesser twayblade *Listera cordata* is associated with the well-developed stands of heather within this community. In wetter areas, the vegetation is characterised by an abundance of bog moss *Sphagnum* species and corresponds to the cross-leaved heath - *Sphagnum papillosum* blanket mire community. This occurs near the common's summit where there is a mosaic of bog communities including, in the wetter areas, small *Sphagnum cuspidatum* / *S. recurvum* bog pools.

Several areas of flushed vegetation occur on slopes and associated with the main blanket mire and bog communities. Much of this vegetation has an extremely variable species composition, but is typified by the presence of small sedges amongst a carpet of the mosses *Polytrichum commune* and *Sphagnum recurvum*. Other associated species include purple moor-grass *Molinia caerulea*, round-leaved sundew *Drosera rotundifolia*, common cottongrass, soft-rush *Juncus effusus* and sharp-flowered rush *J. acutiflorus*. The nationally scarce bog orchid *Hammarbya paludosa* has been recorded from the shorter flush vegetation.

Carn Gafallt is of high ornithological interest, primarily for its assemblage of woodland birds, including pied flycatcher, redstart, tree pipit, wood warbler and hawfinch. The open moorland and wooded edges support populations of species such as red grouse, buzzard, raven and peregrine, with areas of bracken and heath providing valuable habitat for small passerines such as whinchat and stonechat.

Remarks:

A large area of the site is registered as common land and is owned by the Royal Society for the Protection of Birds.

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