

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

**SITE OF SPECIAL SCIENTIFIC INTEREST CITATION**

**CONWY                      LLANDDULAS LIMESTONE AND GWRYCH CASTLE WOOD**

**Date of Notification:**                      1972, 1983, 1997

**National Grid Reference:**                      SH 907 770, SH 917 773 and SH 915 764

**O.S. Maps:**                                      1:50,000 Sheet number: 116  
1:10,000 Sheet number: SH 87 NE, SH 97 NW

**Site Area:**                                      143.6 ha

**Description:**

Llanddulas Limestone and Gwrych Castle Wood is of special interest for limestone (calcareous) grassland, heath and woodland communities, the first two of which comprise some of the largest examples in Clwyd, as well as its populations of vascular plants; bryophytes; butterflies; moths and a winter roost of lesser horseshoe bat *Rhinolophus hipposideros*.

The site occupies several prominent Carboniferous Limestone escarpments on either side of the valley of the River Dulas some three kilometres west of the town of Abergele and immediately due south of the village of Llanddulas. At its northern extremity, the site is half a kilometre from the Irish Sea coast. It is at an altitude of between 30-205 metres above sea level. Of the three escarpments, Cefn yr Ogof, Pen-y-corddyn-mawr are on the east side of the valley and Craig y Forwyn/Isallt Cliffs are on the west side. Each of these consists of slopes and screes below limestone cliffs, above which are plateaux. Some of the cliffs have in past years been subject to quarrying. Throughout, the bedrock is Carboniferous Limestone with the thinner soils derived from this. Elsewhere soils on the plateau are derived from glacial till or loess. The bedrock contains several natural caves and some disused mine-workings once utilised for lead ore extraction. These workings are in adits, shafts or stopes and associated spoil heaps albeit on a very small scale. The site is free-draining and particularly drought-prone where soils are thinnest. There are no water courses or other aquatic habitats. The combination of a wide variety of aspects, topography and soil conditions has given rise to a complex and interesting range of plant communities within a relatively small area.

Variation exists between each escarpment in the particular plant communities present but the general trend is as follows. The steep slopes below the cliffs are clothed in broad-leaved woodland as for example, at Cefn yr Ogof, Gwrych Castle Wood and Craig y Forwyn. The cliffs and areas immediately above and adjacent to them support calcareous grassland with the steepest slopes above supporting both calcareous grassland and heath and on deeper soils, gorse scrub and bracken. It is this mosaic that is especially attractive to the lepidoptera (butterflies and moths). Some of the plateaux with the deepest soils have in the past been subject to agricultural improvement and are now comparatively species-poor but support in their rockier parts, calcareous grassland of interest.

On the rockiest parts and thinnest soils is the *Festuca ovina* - *Carlina vulgaris* grassland. This is a short turf containing sheep's-fescue *Festuca ovina*, crested hair-grass *Koeleria macrantha*,

meadow oat-grass *Avenula pratensis* and quaking-grass *Briza media* with abundant herbs that include wild thyme, *Thymus polytrichus* (= *T. praecox*), salad burnet *Sanguisorba minor*, carline thistle *Carlina vulgaris*, common rock-rose *Helianthemum nummularium*, and the Nationally Scarce hoary rock-rose *Helianthemum canum*. Bryophytes such as *Weissia controversa* and *Trichostomum brachydontium* are also common.

Where soils are deeper and less rocky and slopes less steep and where sheep and rabbit grazing is maintained, *Festuca ovina* - *Avenula pratensis* grassland is present as the most extensive grassland community present. Grasses and sedges present in this sward are sheep's-fescue, crested hair-grass, quaking grass, common bent *Agrostis capillaris*, spring-sedge *Carex caryophyllea* and glaucous sedge *C. flacca*. Herbs remain prominent with common rock-rose, salad burnet, wild thyme, common birds'-foot-trefoil *Lotus corniculatus*, Lady's bedstraw *Galium verum*, and harebell *Campanula rotundifolia* the most frequent of the many species present. Bryophytes common in this sward and include *Dicranum scoparium*, *Hypnum cupressiforme*, *Pseudoscleropodium purum*, *Rhytidiadelphus triquetrus* and *R. squarrosus*. Where agricultural activity has modified this sward, grasses such as crested dog's-tail *Cynosurus cristatus*, yellow oat-grass *Trisetum flavescens* and perennial rye-grass *Lolium perenne* have increased at the expense of the herbs.

In those parts where grazing has become relaxed, *Bromus erectus* grassland dominates. This occupies some of the plateaux at Craig y Forwyn. It tends to be rank and dominated by upright brome, *B. erectus* with sheep's fescue, red fescue and relatively few herbs such as salad burnet, common rock-rose and bird's foot trefoil. This is the largest area of upright brome grassland in Clwyd. Furthermore, here this species is near the north-western edge of its range in Great Britain.

The calcicolous heath is represented by *Calluna vulgaris* - *Ulex gallii* heath. There are some large stands of this on the west-facing flanks of Cefn yr Ogof. Elsewhere, as for example on the southern side of Pen-y-corddyn-mawr, stands are usually in a mosaic with the *Festuca ovina* - *Avenula pratensis* grassland. This heath is dominated by heather *Calluna vulgaris*, western gorse *Ulex gallii* and bell heather *Erica cinerea*. It exhibits a range of sub-communities, from stands containing few species other than these dominants, through stands where calcifugous species such as tormentil *Potentilla erecta*, and slender St John's-wort *Hypericum pulchrum* are associates, to species-rich stands where calcicolous species such as salad burnet, common rock-rose, wild thyme and glaucous sedge are frequent amongst the dwarf shrubs.

Associated with the grassland and heath are stands of bracken *Pteridium aquilinum* and common gorse *Ulex europaeus*, often where land is least accessible to grazing animals.

The broad-leaved woodland at Craig y Forwyn is on an Ancient Woodland Site whereas that of Gwrych Castle Wood is on an Ancient Replanted Woodland site. The canopy is variable but is dominated by either silver birch *Betula pendula* or ash *Fraxinus excelsior* with oak *Quercus spp.*, sycamore *Acer pseudoplatanus* and beech *Fagus sylvatica*. In Gwrych Castle Wood there is some local dominance of the canopy by scots pine *Pinus sylvestris*. Woodland on the cliff faces has yew *Taxus baccata*, spindle *Euonymus europaeus* and the Nationally Scarce rock whitebeam *Sorbus rupicola*. The shrub layer contains hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, wild privet *Ligustrum vulgare*, spurge-laurel *Daphne laureola*, spindle, yew and abundant ash sapling regeneration.

Species present in the field layer include false brome *Brachypodium sylvaticum*, dog's mercury *Mercurialis perennis*, sanicle *Sanicula europaea*, enchanter's-nightshade *Circaea lutetiana*, hart's-tongue fern *Phyllitis scolopendrium* and mosses such as *Rhytidiadelphus triquetrus*. In sections of open canopy or at the woodland edge where ivy *Hedera helix* (*ssp. hibernica*) dominates, the Nationally Scarce ivy broomrape *Orobanche hederæ* flourishes. On scree slopes the woodland flora is threatened by the spread of invasive species of exotic *Cotoneaster*; including *C. simonsii*, *C. horizontalis*, *C. buxifolius* and *C. integrifolius* (= *C. microphyllus*) the latter of which also threatens the grassland above the cliffs.

Other Nationally Scarce vascular plants present include white horehound *Marrubium vulgare*, wild cabbage *Brassica oleracea*, dwarf mouse-ear *Cerastium pumilum* and spring cinquefoil *Potentilla neumanniana* (*P. tabernaemontani*). Lower plants of note are; the Nationally Scarce bryophytes *Pleurochaete squarrosa*, and *Bryum torquescens*, species of limestone soils and turf, and *Bryum canariense* and *Grimmia orbicularis* both species of limestone rock. The near threatened lichen *Collema fragile*, a species growing on limestone outcrops has been recorded from Craig y Forwyn.

The rich *lepidoptera* fauna includes several populations of the long-established introduction of the Great Orme race of silver-studded blue *Plebejus argus*. Other notable butterflies are pearl-bordered fritillary *Boloria euphrosyne*, silver-washed fritillary *Argynnis paphia*, white-letter hairstreak *Strymonidia w-album*, green hairstreak *Callophrys rubi* and brown argus *Aricia agestis*. Noteworthy moths are the scarce plume moth *Pterophorus spilodactylus* and the cistus forester *Adscita geryon* and the chalk carpet *Scotoperyx bipunctaria*.

The site shelters in several caves and disused mine-workings, Clwyd's fourth largest hibernaculum of lesser horseshoe bat. Annual counts are in excess of 50 bats with a maximum of 78 recorded in the winter of 1994/95. Four other species of bat also hibernate here in very small numbers; Daubenton's bat *Myotis daubentonii* Natterer's bat *M. nattereri*, brown long-eared bat *Plecotus auritus* and pipistrelle *Pipistrellus pipistrellus*. The habitat mosaic of predominantly broad-leaved woodland, and herb-rich grassland and heath, and abundance of invertebrates that these plant communities support, are used by the bats for feeding and as links to other important habitats for breeding and roosting.

### **Remarks**

Gwyrch Castle Wood is managed by the Forestry Commission.

Parts of Cefn yr Ogof and Craig y Forwyn are registered as Common Land. Pen-y-corddyn-mawr is a Scheduled Ancient Monument.

Lesser horseshoe bat is listed in Annex 11a of the EC Directive on the Conservation of Natural Habitats and Wild Flora and Fauna and in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Calcareous Grassland, Calcareous Heath and Broadleaved Woodland have Habitat Statements in the UK Biodiversity Action Plan.

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