

**CYFOETH NATURIOL CYMRU
NATURAL RESOURCES WALES**

SITE OF SPECIAL SCIENTIFIC INTEREST: CITATION

POWYS/GWYNEDD

COEDWIG DYFI

Date of Notification:

1985, 1994, 1998, 11 December 2023

National Grid Reference:

SH775097, SH784073, SH799081, SH838077,
SH822115, SH831124

O.S. Map:

1:25,000 Sheet number: OL23, Explorer 215

Site Area:

408.95 ha

Description:

Coedwig Dyfi is of special interest for an assemblage of southern oceanic woodland lichens, an assemblage of upland rainforest lichens, thirteen individual lichen species, an assemblage of Atlantic woodland bryophytes, and its western oceanic 'temperate rainforest' woodland habitat. The thirteen lichen species of special interest in their own right are *Fuscopannaria mediterranea*, *Graphina pauciloculata*, *Leptogium brebissonii*, *Ricasolia (Lobaria) amplissima*, *Lobaria pulmonaria*, *Ricasolia (Lobaria) virens*, *Menegazzia terebrata*, *Micarea hypoviolascens*, *Parmelinopsis horrescens*, *Parmeliella testacea*, *Porina hibernica*, *Pyrenula occidentalis* and *Rinodina isidioides*.

The site stretches across several valleys, from near Ceinws in the west, to Aberangell in the east. It ranges in altitude from 60m to 390m above sea level. The site comprises five discrete parts. In the northwest, one of these parts is around the village of Aberllefenni. This includes Coed Maes-mawr, Coed Ffridd-newydd, Coed Caecenau as well as woodland beside the Afon Dulas, Nant Esgair-neiriau, Nant Cwm Celli, Nant Cwm Gerwyn and Nant Gallt-y-Rhiw. In the southwest, up from Ceinws, the site includes woodland in Cwm Glesrych, Coed Pen-lan, Coed Blaen-Glesrych and Coed Rhyd-y-biswail. The central part of the site includes woodland around Cwm Ceirig, Esgair Llewelyn and Cwm Coeg. The eastern parts of the site include woodland beside the Nant Llwydo, Nant Gwybedyn and Coed Uchaf. In the north, near Aberangell, the site includes woodland beside the Afon Angell and Nant Maes-y-gamfa, as well as Coed Talymiern, Coed y Ffridd and Coed Cwm-du. Lower Palaeozoic sedimentary rocks dominate the bedrock geology of the area, mainly mudstones, siltstones and sandstones that are Late Ordovician to Early Silurian in age. Shallow podzolic soils predominate on the wooded slopes, whilst groundwater gley soils and shallow peat are confined to flush lines and stream sides.

Coedwig Dyfi supports one of the best examples in Wales of a lichen community associated with old-growth southern oceanic woodland. It is the best site for southern oceanic woodland lichens in Montgomeryshire and one of the best in East Gwynedd. This lichen community comprises of at least fifty three species overall, including *Agonimia octospora*, *Anisomeridium ranunculosporum*, *Arthonia vinosa*, *Bacidia biatorina*, *Catinaria atropurpurea*, *Cetrelia olivetorum s. lat.*, *Chaenotheca brunneola*,

Cladonia caespiticia, *Cladonia parasitica*, *Collema subflaccidum*, *Cresponea premnea*, *Lecanora alboflavida*, *Lecanora jamesii*, *Leptogium cyanescens*, *Scytinium* (*Leptogium*) *lichenoides*, *Leptogium teretiusculum*, *Ricasolia* (*Lobaria*) *amplissima*, *Lobaria pulmonaria*, *Ricasolia* (*Lobaria*) *virens*, *Loxospora elatina*, *Micarea alabastrites*, *Micarea cinerea*, *Micarea pycnidiophora*, *Mycobilimbia epixanthoides*, *Mycobilimbia pilularis*, *Mycoporum antecellans*, *Nephroma laevigatum*, *Nephroma parile*, *Opegrapha* (*Thelopsis*) *corticola*, *Pachyphiale carneola*, *Pannaria conoplea*, *Parmeliella parvula*, *Parmeliella triptophylla*, *Pectenaria* (*Degelia*) *atlantica*, *Peltigera collina*, *Peltigera horizontalis*, *Pertusaria multipuncta*, *Phaeographis dendritica*, *Phaeographis inusta*, *Phyllopsora rosei*, *Porina coralloidea*, *Porina hibernica*, *Porina rosei*, *Punctelia reddenda*, *Rinodina isidioides*, *Schismatomma quercicola*, *Stenocybe septata*, *Sticta fuliginosa* s. lat., *Sticta limbata*, *Sticta sylvatica*, *Thelotrema lepadinum*, *Usnea ceratina* and *Usnea florida*. The richness of these lichens persisting at Coedwig Dyfi has been influenced by the combination of its long history of woodland cover and a continuity of relatively clean air. These lichens occur on a range of trees, particularly oak *Quercus* spp., willows *Salix* spp., ash *Fraxinus excelsior* as well as hazel *Corylus avellana*, sycamore *Acer pseudoplatanus*, holly *Ilex aquifolium*, rowan *Sorbus aucuparia*, alder *Alnus glutinosa* and birches *Betula* spp. This lichen community occurs within denser woodland groves as well as on more open-grown trees in well-lit situations, in glades, wood-pasture and scattered within more open vegetation. Willows along forest track edges are of importance for some of these species (e.g., *Sticta* spp.).

Coedwig Dyfi also supports one of the best examples in Wales of a lichen community associated with upland temperate rainforest. It is by far the best site in Montgomeryshire for this type of lichen community and only two other sites in Wales support more species, both in East Gwynedd. This lichen community comprises of at least twenty six species throughout the site, including *Bunodophoron melanocarpum*, *Bryobilimbia sanguineoatra*, *Calicium lenticulare*, *Cetrelia olivetorum* s. lat., *Graphina ruiziana*, *Hypotrachyna laevigata*, *Hypotrachyna sinuosa*, *Hypotrachyna taylorensis*, *Japewiella tavaresiana*, *Lecanora alboflavida*, *Lepraria membranacea*, *Loxospora elatina*, *Micarea alabastrites*, *Micarea doliiformis*, *Micarea stipitata*, *Megalania pulvereana*, *Menegazzia terebrata*, *Mycoblastus caesius*, *Mycoblastus sanguinarius* f. *sanguinarius*, *Ochrolechia tartarea*, *Parmeliella parvula*, *Parmelinopsis horrescens*, *Schismatomma quercicola*, *Sphaerophorus globosus*, *Trapelia corticola* and *Usnea dasopoga*. These lichens are associated with trees growing in high rainfall areas, including birches, alder, oak, willows, rowan, holly, and hazel. Well-lit acidic barked trees such as birch and alder are particularly important. Some occur on large old trunks, whilst others colonise younger and smaller trees and branches.

Thirteen lichen species are of particular importance at Coedwig Dyfi. The site holds the only populations in Montgomeryshire of blobby jelly-skin lichen *Leptogium brebissonii*, parchment lichen *Ricasolia amplissima* and tree flute *Menegazzia terebrata*, species that are rare and vulnerable in Wales. The largest populations in Montgomeryshire of two other rare and vulnerable species, tree lungwort *Lobaria pulmonaria* and green satin lichen *Ricasolia virens*, are also found within Coedwig Dyfi. The site supports the only populations in Montgomeryshire of hairy-spined shield lichen *Parmelinopsis horrescens*, a species that is threatened in Europe, and the near-endemic script lichen *Graphina pauciloculata*. The East Gwynedd part of the site includes two of the three known locations in the world for a dot lichen *Micarea*

hypoviolas, which occurs on damp hard wood of standing dead oak trees. It also supports a shingle lichen *Parmeliella testacea*, which is critically endangered in Wales and at its southernmost location in Britain here. It is one of very few sites in Wales for a pox lichen *Pyrenula occidentalis*, at the south-eastern limits of its British range. East Gwynedd, including Coedwig Dyfi, is also a key area for the conservation of the rare and vulnerable Mediterranean shingle *Fuscopannaria mediterranea* and Irish pimple *Porina hibernica* lichens and a pepper-spore lichen *Rinodina isidioides*, another species that is threatened in Europe. Coedwig Dyfi supports other notable lichens including *Ramonia dictyospora*, *Ramonia chrysophaea* and *Abrothallus welwitschii*, a lichenicolous fungus on *Sticta* spp.

Coedwig Dyfi supports an Atlantic woodland bryophyte assemblage, with a highly restricted global distribution. This community comprises of *Colura calyptrifolia*, *Heterocladium wulfsbergii*, *Lejeunea lamacerina*, *Lejeunea patens*, *Lepidozia cupressina*, *Lepidozia pearsonii*, *Plagiochila bifaria*, *Plagiochila exigua*, *Plagiochila punctata*, *Plagiochila spinulosa*, *Platyhypnidium alopecuroides* and *Scapania gracilis*. Some of these grow on trees, whilst others occur on rock outcrops, decaying wood and on boulders and rock in watercourses. Coedwig Dyfi supports several other notable bryophytes including the scarce woodland species *Tritomaria exsecta*, *Rhytidiadelphus subpinnatus* and *Anastrophyllum hellerianum*.

The temperate rainforest of Coedwig Dyfi is of special interest as a large and diverse example of characteristic western broadleaved woodland habitat. The woodland habitats are strongly influenced by their oceanic climate, with high rainfall and relatively mild equable temperatures. The most extensive areas include Coed Maes-mawr, Coed Esgair-neiriau, Cwm Coeg, Coed Rhyd-y-biswail, Coed Uchaf, Coed Talymiern, Coed Cwm Du, Cwm Glesyrch and Cwm Celli. These are of high value as connected woodland communities, concentrated along river and stream valleys.

Most of the temperate rainforest habitat at Coedwig Dyfi is dominated by sessile oak *Quercus petraea* as the main canopy species, associated frequently with downy birch *Betula pubescens*, rowan *Sorbus aucuparia* and an understorey, where present, of holly *Ilex aquifolium*, hazel *Corylus avellana*, rusty willow *Salix cinerea* subsp. *oleifolia* and hawthorn *Crataegus monogyna*. In some areas, birch trees are of a form known as celtic white birch *Betula pubescens* subsp. *celtiberica*, which is characteristic of temperate rainforests in this part of west Wales. The ground flora of these more acidic woodlands is influenced by various factors. Areas that have not been grazed for some time have a well-developed layer of bilberry *Vaccinium myrtillus* and occasionally heather *Calluna vulgaris*. This habitat covers an extensive area within the site, which it a particularly important example of its type in the Montgomeryshire area. Where the woodland canopy cover is more open, the ground flora can be dominated by heather. Areas where grazing has been more recent or current typically have a more restricted ground flora dominated by grasses, including sweet vernal-grass *Anothoxanthum odoratum*, common bent *Agrostis capillaris* and wavy hair-grass *Deschampsia flexuosa*. Mosses and liverworts strongly characterise the most acidic and rocky oak woodland, forming extensive carpets with *Rhytidiadelphus loreus*, *Thuidium tamariscinum*, *Hypnum jutlandicum* and *Polytrichum formosum* typically most abundant, as well as *Dicranum majus*, *Hylocomium splendens*, *Plagiothecium undulatum*, *Isothecium myosuroides* and *Pleurozium schreberi*.

In the most humid areas, the woodland is further characterised by oceanic bryophytes including *Bazzania trilobata* and *Saccogyna viticulosa*. Large fallen tree trunks and branches are often colonised by bryophytes including *Nowellia curvifolia* and *Dicranodontium denudatum*, and sometimes *Odontoschisma denudatum*. Steep wooded ravines support Wilson's filmy-fern *Hymenophyllum wilsonii* and Tunbridge filmy-fern *Hymenophyllum tunbrigense*. Beech fern *Phegopteris connectilis* occurs in several areas, and oak fern *Gymnocarpium dryopteris* is also present. Wood fescue *Drymochloa sylvatica* and hay-scented buckler-fern *Dryopteris aemula* have been recorded from Cwm Celli.

Where the soil is deeper and slightly less acidic, the oak woodland shrub layer is usually well developed. Ground flora still includes typical oak woodland mosses but has a greater variety of other plants, including wood sorrel *Oxalis acetosella*, common dog violet *Viola riviniana*, large ferns, such as broad buckler *Dryopteris dilatata*, male fern *D. filix-mas*, scaly male fern *D. affinis* agg., bluebell *Hyacinthoides non-scripta* and many more, making this a good example of its type in a Montgomeryshire context. Ivy-leaved bellflower *Wahlenbergia hederacea* occurs on flushed banks and track edges in several areas. Brambles *Rubus fruticosus* agg. and bracken *Pteridium aquilinum* may be dominant in places. Elsewhere the ground flora may be moss dominated, sometimes with the bog moss *Sphagnum quinquefarium*, whilst retaining a good range of characteristic plants including bluebell, hard fern *Blechnum spicant*, lemon-scented fern *Oreopteris limbosperma* and hairy wood-rush *Luzula pilosa*. This type of humid, but not strongly acidic, oak woodland is rare in Montgomeryshire.

In places, more base-rich temperate rainforest occurs, where the canopy becomes more varied and is characterised by more ash *Fraxinus excelsior* and, in places, alder *Alnus glutinosa* and sycamore *Acer pseudoplatanus*. Though not covering large areas it is concentrated alongside rivers, streams and seepages, often forming corridors. Other trees in these areas include rowan, downy birch, hazel, wych elm *Ulmus glabra*, goat willow *Salix caprea*, rusty willow, sessile oak, and blackthorn *Prunus spinosa*. Small-leaved lime *Tilia cordata* is a scarce tree in Welsh woodland, but occurs here in several riverside woodlands, in Cwm Glesyrch, Cwm Celli, Coed Talymiernyn and by the Afon Dulas. The ground flora in the ash woodland areas is rich and varied, including large ferns, wood sorrel *Oxalis acetosella*, sanicle *Sanicula europaea*, wood anemone *Anemone nemorosa*, primrose *Primula vulgaris*, wood avens *Geum urbanum* and less frequently, wood melick *Melica uniflora*, wood millet *Milium effusum*, early purple orchid *Orchis mascula* and broad-leaved helleborine *Epipactis helleborine*. Streamside woodland is also characterised by the presence of upland enchanter's-nightshade *Circaea alpina* x *lutetiana* (*C. x intermedia*), which occurs at Cwm Coeg, Talymiernyn, Coed Rhyd-y-biswail and Ceunant Caecenau. The diversity and extent this ash woodland makes it important in a Montgomeryshire context.

Alder, birch and willows dominate woodland on the dampest soils. Some flushed and streamside areas of woodland support lush vegetation with meadowsweet *Filipendula ulmaria*, common valerian *Valeriana officinalis*, lady fern *Athyrium filix-femina*, angelica *Angelica sylvestris*, tufted hair-grass *Deschampsia caespitosa*, opposite-leaved golden-saxifrage *Chrysosplenium oppositifolium*, and occasionally wild garlic *Allium ursinum*, marsh hawk's-beard *Crepis paludosa*, smooth-stalked sedge *Carex laevigata* and the liverwort *Trichocolea tomentella*. Open wooded habitats on damp

soils are sometimes dominated by purple moor-grass *Molinea caerulea* or rushes *Juncus* spp. with poor-fen forbs.

Structurally, the woodlands are diverse, with a spectrum of openness from the densest groves to open woodland with scattered trees. The grazing of livestock in parts of Coedwig Dyfi has contributed to this structural diversity and helped to maintain the space and light for dependent lichen communities, as well as for more open grown individual trees to grow and age with little competition. Whilst not abundant, the site does support a range of veteran and ancient trees of several different species, including alder, birch, holly, oak, and ash. Many of the oldest trees in Coedwig Dyfi are of particular significance for supporting lichens. Some areas have been grazed as wood-pasture historically but have since been fenced off and natural regeneration has infilled the canopy gaps between the older trees. In denser groves, fallen trees and other natural disturbances have created glades and contributed to the plentiful fallen and standing decaying wood in areas. The impact of deer is very low or absent in most areas of Coedwig Dyfi, so in areas where livestock have little or no access, regeneration of a range of ages and species occurs, as scattered regeneration in gaps, to larger and denser cohorts of young trees in thickets developing on previously clear-felled conifer stands or in areas fenced off from grazing. There are a good range of tree ages, sizes and related microhabitats within the site as a whole.

The woodland habitats are of particular significance for their lichen and bryophyte communities, but they also support an array of other flora, fauna, and fungi. This includes one of the most significant populations of dormouse *Muscardinus avellanarius* in northwest Wales. Birds include wood warbler *Phylloscopus sibilatrix* and pied flycatcher *Ficedula hypoleuca*. Lesser horseshoe bats *Rhinolophus hipposideros* forage and roost in parts of the forest. In the rivers, there are good populations of brown trout *Salmo trutta* and otter *Lutra lutra*. The invertebrate fauna of Coedwig Dyfi includes typical species of old damp woodland like the crane fly *Epiphragma ocellare*, as well as lesser stag beetle *Dorcus parallelipipedus* and silver-washed fritillary butterfly *Argynnis paphia*, both of which are scarce in northwest Wales. The Welsh clearwing moth *Synanthedon scoliaeformis* is known in areas with old birch trees. Myxomycetes include *Lamproderma columbinum*.

Remarks:

The entire site lies within the Dyfi UNESCO Biosphere Reserve and part of the site lies within Eryri National Park.

This site supports vegetation assignable to the following habitat types listed in Annex 1 of the EC Habitats Directive (Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora): 91A0 (Old sessile oak woods with Ilex and Blechnum in the British Isles) and 9180 (Tilio-Acerion forests of slopes, screes and ravines).

The site holds a range of habitats and species listed on section 7 of the Environment (Wales) Act 2016, Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Annex II and Annex IV of the EC Habitats Directive.