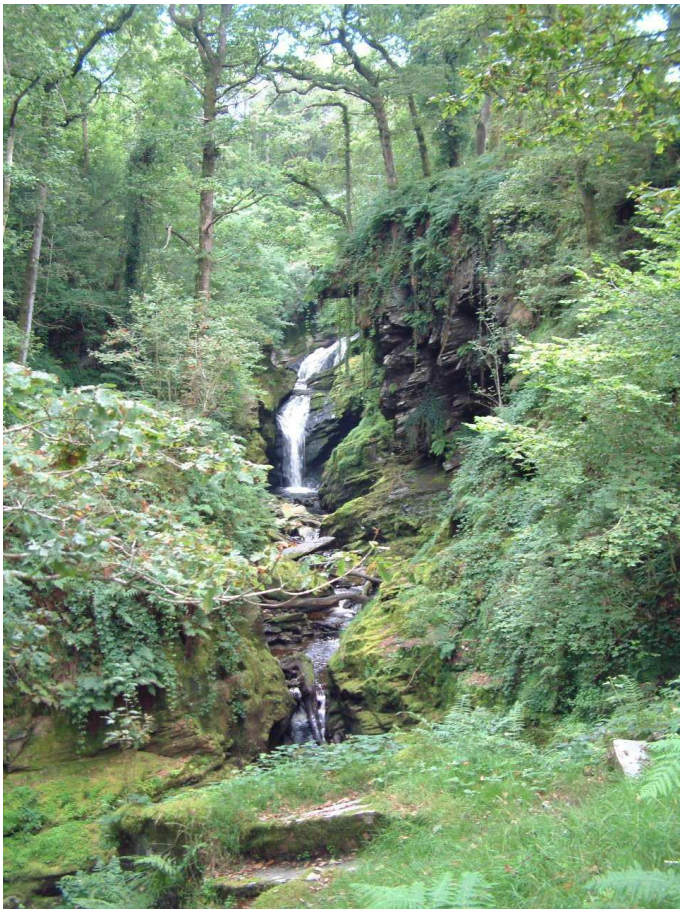
CEUNANT CYNFAL SITE OF SPECIAL SCIENTIFIC INTEREST

Site Area: 36.3 ha



Photograph by Doug Oliver

YOUR SPECIAL SITE AND ITS FUTURE

'Your Special Site and its Future' is part of our commitment to improve the way we work with Site of Special Scientific Interest (SSSI) owners and occupiers. In this Site Management Statement (SMS), we explain what is special about the wildlife and geology on your site, and what care is needed to look after its wildlife and geology into the future.

All SSSI are considered to be of national importance and we recognise the crucial role that owners and occupiers play in their management and protection. We need you to share your views and knowledge of this site with us, to help safeguard it.

We hope that you will find 'Your Special Site and its Future' interesting and helpful. Please contact us if there is anything about the site and its management that you would like to discuss.

What is 'special' about the wildlife and geomorphology at Ceunant Cynfal SSSI?

The recorded features of interest are:

Oak woodland. Ceunant Cynfal SSSI is part of an extensive tract of oak woodland within the Vale of Ffestiniog which occupies the steep hillsides on both sides of the valley. The sessile oak woodlands of southern Snowdonia, form one of the most important areas for woodland conservation in Europe. This type of Atlantic woodland is often described as "temperate rain forest" due to the prevailing damp humid climate and associated abundance of ferns, lichens and luxuriant growth of mosses and liverworts. Ceunant Cynfal is of European importance and as such forms part of the Meirionnydd Oakwoods and Bat sites Special Area of Conservation (SAC).

The oak woodland at Ceunant Cynfal is no exception. The sides of the deep ravine carved out by the Afon Cynfal supports dense oak woodland, and the tree canopy above the ravine is closed and holds the humidity within the site. Most of the woodland consists of larger older trees, but the age structure is varied, ranging from stands of large trees of the same size and stature such as in Coed Ty Isa, to stands of trees with a very mixed aged structure, with veteran trees interspersed with much younger trees, as in the upper section below the railway bridge. Within the ravine, there are many seepages and flushes that are less acidic, resulting in more mixed woodland with ash and hazel intimately mixed in with the oak woodland.

The shrub layer is equally varied, ranging from being almost completely absent as a result of prolonged past grazing, to fairly well developed with hazel and young canopy tree species intermixed. The majority of the woodland is currently ungrazed by any livestock and bramble cover is developing in some locations. Tree regeneration is generally good throughout, and is of locally native species, although there is much Sweet Chestnut regeneration in the lower parts of the site. The quantity of dead wood is low, although wind blow events over the last 20 years has increased the quantity of good quality deadwood in the form of uprooted mature trees.

Mosses and liverworts. There are approximately 150 species of moss and liverwort recorded from Ceunant Cynfal. In addition to the common and abundant species that completely cover boulders, rocks, tree stumps, rotten logs and much of the woodland floor, there are a number of rare and uncommon species often occurring in profusion. These species are very restricted in their distribution in Britain, generally occurring in western mountainous areas where the climate is mild but wet. They are usually restricted to shady north facing woodlands and deep river gorges and stream gullies in North Wales where humidity is enhanced locally. Within Ceunant Cynfal, the humidity is enhanced by the deep nature of the ravine, a fast flowing river with many waterfalls and a dense oak canopy, which holds the humidity in. 7 nationally scarce species have been recorded including *Andreaea rothii*, a moss of acidic rocks and boulders, *Leucobryum juniperoideum*, a cushion forming moss of woodland floors and tree trunks, *Racomitrium affine,* a moss of exposed sites on acid rocks and boulders, *Rhynchostegium alopecuroides,* a moss of fast-flowing rivers and streams, *Anastrophyllum hellerianum*, a liverwort of dead but undecayed timber, *Jamesoniella autumnalis*, a liverwort of rotting timber or humus covered rocks and *Tritomaria exsecta*, a liverwort of rotten wood and humus.

Lichens. Ceunant Cynfal supports an impressive array of lichens, ranging from the crusty patch forming lichens on rocks and trees to quite large leaf like and beard like species on tree trunks and branches. Four nationally scarce species have been recorded. These are *Micarea stipitata*, a crust forming lichen on leached bark or mossy rocks, *Phyllopsora rosei*, which grows amongst mosses on the trunk of old oak trees, *Lopadium disciforme***,** a crustose lichen which prefers mossy, acid-barked trees, especially oak, and *Parmelinopsis horrescens***,** an "old forest" lichen of acidic barked trees, often found on birch. The quality of the lichen flora indicates clean air conditions and a lack of significant large-scale disturbance in the past.

Geomorphological interest. A section of the Afon Cynfal is of geomorphological interest as an integrated river system with two gorge sections separated by a low gradient section of river. Both the gorge sections, of which the section within Ceunant Cynfal SSSI is the lower, are designated SSSI for their geomorphological interest. Within Ceunant Cynfal SSSI the river is confined to a spectacular wooded ravine cutting through Cambrian slates to a depth of up to 45 metres. There are sheer cliffs and several large waterfalls and numerous cascades together with fine river erosional features such as potholes, scours and narrow slots. The river is joined by small tributaries, which display a hanging valley relationship to the main gorge.

Studies made of this and other west flowing rivers in North Wales indicate that the gorges are a response to rejuvenation, the process having occurred at three base levels as suggested by the sudden changes of channel gradient at the head of both gorges sections on the Afon Cynfal. Geomorphologists believe that the deeply eroded slots seen in Ceunant Cynfal SSSI reflect the action of superimposed subglacial melt water during Late Devensian times.

As well as the features listed above, Ceunant Cynfal has other habitats that contribute to the special wildlife interest. These include the river itself, scrub, heathland and bracken. This mixture of habitats, including fallen and standing dead wood is important for birds, insects and other invertebrates. Unless it is specified below, management of this site should aim to look after these habitats as well as the listed features of interest that contribute to the special interest.

What do we want Ceunant Cynfal to look like?

The site, apart from the river gorge itself, is virtually all broadleaved woodland, dominated by oak. Trees should vary in age, size and density with most of the trees and shrubs being of locally native broadleaved species. Sessile or hybrid oak, downy or pendulous birch, ash, rowan, holly, elm, and hazel, create patterns of dappled green as their abundance changes throughout the woodland. Naturally regenerating tree seedlings and saplings should form a landscape of shifting light and shade, where as much as a quarter of the woodland may be open glades or developing young woodland, slowly filling a changing patchwork of temporary glades formed by natural tree fall. Fallen and standing dead trees, as well as live trees with holes, hollows and rotten branches, will then provide special habitats for various mosses, liverworts, fungi, insects, birds and bats. Throughout the woodland there should be ample dead wood.

Patches of heather and bilberry, tussocks of wavy hair grass or purple moor grass and sheets of bluebells add to the woodland floor's variety of colours and textures. In rocky areas, or where the soil is thin and acidic, thick carpets of mosses and liverworts adorn boulders and crag faces, some forming distinctive cushions, others forming multi-textured

mosaics of form and colour. Amongst these mossy mosaics are a number of uncommon species intermingled with patches of the delicate moss-like filmy fern.

Photograph by Doug Oliver

During the breeding season, the spring birdsong includes pied flycatchers, redstart and wood warblers as well as the drumming of resident woodpeckers. As the light fades, bats dart silently through the canopy and feed along the woodland edges and glades.

Geomorphological processes should continue to shape the gorge landscape over the millennia, through natural river erosion processes imposed by the natural and undiminished flow pattern of the river. These processes may be modified by, for example, fallen trees within or across the river causing obstructions to flow and formation of temporary pools. The spectacular erosion features will remain visible and available for study.

What management is needed on Ceunant Cynfal SSSI and why?

Although Ceunant Cynfal is an excellent place for wildlife and the study of river evolution it will only remain so if the necessary management continues. CCW's priority is to continue to work with you to ensure that this management is carried out. We place a great importance on our relationships with owners and occupiers, because without your help it will be impossible to safeguard the special interest on your land. CCW manage part of Ceunant Cynfal as a National Nature Reserve.

What does this mean in practice?

Some management is essential to conserve the special features, while other management actions could damage the some of the special interest within a very short time. Below is a list of those we regard as most important.

Woodland management, which may include tree felling and scrub clearance, can be beneficial if carried out appropriately. It could however cause damage if for example important trees are felled or if mosses, other plants and/or wildlife are damaged or disturbed as a result.

Sheep grazing at moderate levels will help to prevent the woodland ground layer becoming rank and overgrown with tall heather and bilberry, tussocks of grass and by vigorous species such as bramble. Light grazing benefits the mosses, liverworts and lichens, as it prevents them being smothered and shaded out by grass tussocks, heather or bilberry, and helps them to colonise new areas. However too many sheep or too much grazing can prevent natural tree regeneration. Grazing levels must be carefully controlled so that stock have beneficial impacts on the wood, while allowing young trees to regenerate successfully in the long term.

Rhododendron is potentially one of the most damaging factors occurring on this site. The plant often invades woodland and then grows to the exclusion of all else, forming a dense canopy, which casts dense shade onto the woodland floor. Each mature bush can produce millions of tiny wind dispersed seeds, which germinate readily in the moist moss carpets present throughout the gorge woodlands, and which are protected from drying out by the high humidity. Clearance or control is extremely costly. To achieve satisfactory control all plants on the site as well as those on adjacent land have to be removed. Following clearance, a program of continued management is required to ensure that the woodland remains free of rhododendron.

Non-native trees such as sweet chestnut and western hemlock are of concern as they grow well in the conditions in the gorge and may out-compete native trees and become locally dominant in the canopy. This could cause changes to the ground flora, especially the mosses, liverworts and lichens by casting a deeper shade than oak. The conifer, western hemlock, is a particularly aggressive invader in Coed Ty Isaf. While the occasional non-native tree may be tolerated in the woodland, they should not be allowed to increase above manageable levels and seedlings and saplings should be removed to prevent establishment.

Dead wood should wherever possible be left where it falls and standing dead trees should be allowed to decay naturally. The removal of dead and decaying wood would lead to a reduction of the diverse wood decay conditions that many specialised plants and animals of woodland habitats depend upon. Without a continuous supply of dead wood of various sizes at various stages of decay, many of these species may not be present. Movement, cutting and tidying of dead wood should be avoided unless essential for public and livestock safety.

Humidity, particularly the maintenance of a high humidity, is an important factor affecting the biodiversity of the woodland. A reduction in the humidity within the gorge woodlands could result in gradual loss of rare moss, liverwort or lichen species if ambient humidity levels frequently fall below the level required by individual species. The cause of this could be either local loss of tree canopy in humid areas, or a reduction in the flow of the Afon Cynfal down the Cynfal gorge from, for example, a hydroelectric scheme or major water abstraction upstream from the SSSI.

Adventure gorge walking and white water canoeing are recreational activities which are becoming more common in North Wales. Many of the scarce moss and liverwort species grow on rocks and crags in the most humid areas within the gorge, often on accessible ground. They may be at risk of physical damage from increased access by people engaged in these activities.

Accessibility
Students and researchers need access to study the geomorphological processes, which have shaped the present-day gorge section. However, although there is a public right of way along parts of the site, access elsewhere is entirely at the discretion of the landowners.

Civil engineering operations that impinge directly on the gorge landforms and the river channel itself may harm the geomorphological feature. Any proposals would have to be carefully assessed but any physical damage would not be acceptable.

Finally

Our knowledge of the wildlife and river geomorphology in Ceunant Cynfal is far from complete. It is possible that new issues may arise in the future, whilst other issues may disappear. This statement is written with the best information we have now, but may have to change in the future as our understanding improves. Any information you can provide on the wildlife and geomorphology of your site, it management and its conservation would be much appreciated.

If you would like to discuss any aspect of your SSSI, or have any concerns about your SSSI, please contact your local CCW office:

Your local office is;
Cyngor Cefn Gwlad Cymru/Countryside Council for Wales
Victoria Buildings
Meurig Street
Dolgellau
Gwynedd LL40 1LN

Telephone 01341 424 800 Fax 01341 423 739

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