COEDWIGOEDD GLAW CELTAIDD CYMRU
CELTIC RAINFORESTS WALES

Conservation Grazing Case Study 4
Coed Garth Gell

NATURA 2000

Life

Conservation Grazing Case Study 4: Coed Garth Gell

Location & background

Coed Garth Gell is an RSPB reserve of around 67ha, situated north of the Mawddach estuary in south Meirionnydd (SH685198). There is a mixture of habitat types within the reserve, the dominant habitat on the lower sections being H91A0 Atlantic oak woodland ("Celtic Rainforest"), with more open areas of heathland above. These woodland areas are designated as part of the Meirionnydd Oakwoods and Bat Sites Special Area of Conservation (SAC), which is particularly important for woodland birds, lesser horseshoe bats, and lower plant assemblages.

There is a history of industrial use (gold mining and ore processing) at Coed Garth Gell. The site was grazed heavily until the 1980s, when it was purchased by the RSPB. In 2014, the Glastir Woodland Management scheme excluded grazing from part of Coed Garth Gell, and this area remains ungrazed.
Surveys have reported a decline in conditions beneficial to lichens; in particular shading, caused by dense regeneration of holly and birch. Shading of the ground flora was also noted, by unchecked growth of bramble and bracken, and there were reductions in the number of recorded territories of woodland birds at the site. For example, pied flycatchers (Ficedula hypoleuca) at Coed Garth Gell had 25 recorded territories in 2006, and only 17 in 2011.

The invasive alien species (IAS) Rhododendron ponticum (Rp) is widespread across the area despite some small-scale removal having been undertaken there. Similarly, some halo thinning and holly removal have taken place in the last 20 years. Whilst eradication works could deal with the Rp, a lack of suitable grazing management was identified as a major factor for ongoing problems with excess regeneration.

Grazing re-Introduction: requirements

A local grazier with Highland cattle was already known to RSPB staff. His location nearby meant that Coed Garth Gell could be added on a TLA (Temporary Land Association) – so in terms of livestock movements

and surrounding regulations, the site is part of his existing farm. The site is let on an annual peppercorn grazing licence; and a support payment is made to the grazier twice a year to cover costs associated with keeping low numbers of animals on difficult sites.

One of the cows also wears a GPS collar to reduce time spent looking for them in the woods. We used a Digitanimal collar, which transmits the whereabouts of the animal to the grazier's mobile phone, and also gives basic information about how it is using the site. Mobile reception is patchy across the site, but Digitanimal records the past 24 hours of movement on the app, so the grazier can work out the animal's likely location using a combination of information about where it was last seen and in which direction it was moving.

These habitats are rare and highly protected, so there is an extensive and thorough scheme for consenting works. These include (but are not necessarily restricted to) consent to undertake works on a Site of Special Scientific Interest (SSSI Consent), and Public Right of Way (PRoW) consents. Furthermore, Habitats Regulations Assessments (HRAs) must be completed for any works being undertaken within the boundaries of a Natura 2000 site, and an assessment of the likely impacts on any European protected species (EPS) must be carried out. In instances where works may impact on the status of an EPS, a licence must be obtained by the relevant statutory agency.

Liaison with neighbours was also key, both in terms of changing site use, and of access across their land. However, this has also been a fantastic opportunity to strengthen relations locally, with a positive response to re-introducing elements of traditional farming and using traditional skills.

Infrastructure

It was decided to repair the historic boundaries at Coed Garth Gell where possible, and a total of 1,242 square metres of dry-stone wall were worked on. Although a much bigger investment, stone walling can be repaired after e.g. storm damage using existing materials, and can be maintained indefinitely, bringing down the calculated cost per year. There is also an inherent value in these features and in supporting traditional crafts. We also added some sections of stock fencing, pedestrian access gates, handling facilities suitable for TB testing, and new bilingual signs (Welsh – English) to introduce the public to the grazing animals on-site.

Figure 1. Interpretation board at Coed Garth Gell

Challenges

The nature and terrain of these reserves means that it can be difficult to source contractors. Access is difficult, and often materials must be carried long distances across steep ground. This often results in higher costs as the additional labour is factored into prices by contractors. The site has a number of footpaths across it, so when installing fencing and gates etc we needed to consider both livestock and people and avoid any pinch points. We also needed Gwynedd Council's permission to install gates across the designated Public Right of Way.

The extensive walling repairs at Coed Garth Gell were undertaken section by section, with access cleared as we proceeded. This meant that we didn't have an accurate assessment of work needed prior to signing the initial contract; instead we worked section-by-section under a framework agreement. This required a lot of management in terms of procurement and financial administration, with a few instances of confusion. Good and frequent communication with the lead contractor was critical.

There were some instances of materials shortage, leading to the specification for fencing being altered according to what was available that would be fit for purpose. This was worsened by the national shutdowns during the Covid 19 pandemic, and the extended lead times as manufacturing re-started.

Monitoring

All project sites were subject to Common Standards Monitoring (CSM), and bird (CBC) and lower plant surveys at the start of the project, and this will be repeated at the end. In addition, we are undertaking fixed-point photography on sites at least twice a year which allows us to build up a more detailed picture of changes over time.

As is generally the case with woodland restoration, it is expected that some features will be slow to react to the management changes. In the short term, observations by the grazier, site warden, and project staff influence immediate decisions within the framework of the planned season, for example, when to move the animals to the next compartment. The grazier and project staff will also regularly check the animals to monitor their condition from a welfare perspective.

The project has also invested in a mobile weighing platform for cattle with the intention of comparing woodland-grazed animals and pasture-grazed animals from the same herd. This will help us monitor the animals directly on site and give objective data on growth rates, but it will also enable comparison with similar livestock grazing different habitats.

Grazing plans

Prior to introducing grazing, various remedial works were carried out which involved general thinning, halo thinning around larger oaks, widening of rides, and holIy cutting. The grazing was seen as a post-works tool for maintenance and fine-tuning.

The total hectarage to be grazed for this site is 38ha, and the plan was for it to be grazed all year round, with the cattle moved seasonally across the different habitat types. SSSI consent was obtained for the site that allowed 0.2 Live Stock Units (LSU), which works out at 7 cattle for the whole site for 12 months.

Broadly the original grazing plan was to rotate the animals around the 4 compartments within the wood as follows:

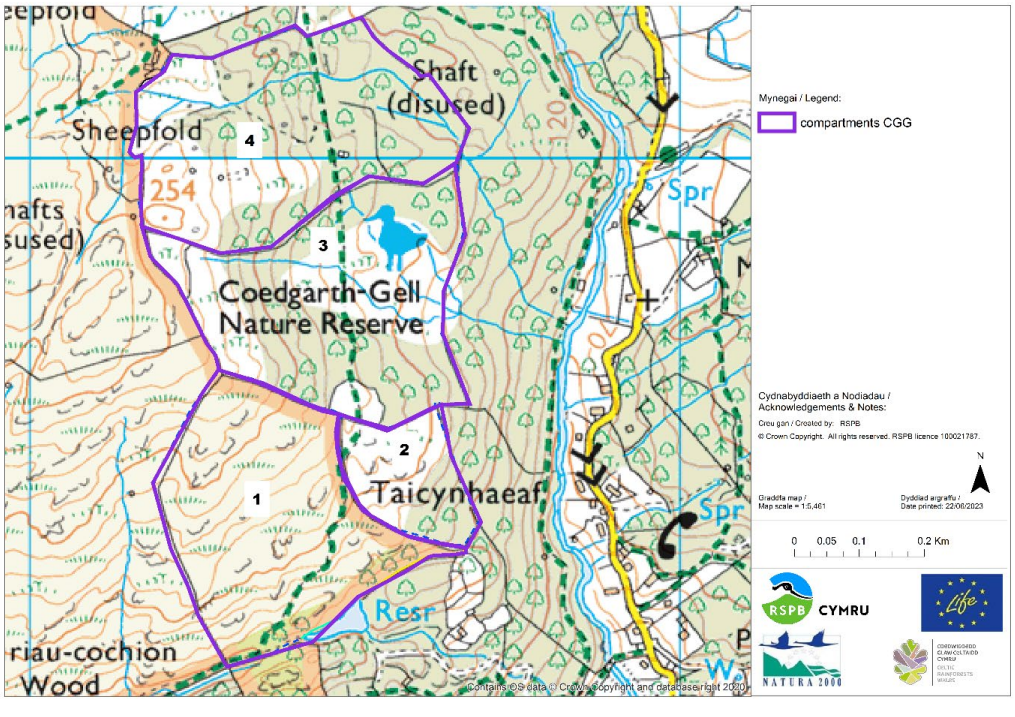
Compartment (compt) 1 has a large area of bracken on the more open ffridd1 sections and was therefore to be grazed in spring so that the cattle could trample the emerging fronds. Woodland sections in this compt also had a thick bramble understorey which could be usefully reduced by grazing.

Compt 2 was to be grazed in winter: this is a woodland compt which contained lots of holly which we anticipated would only be taken in winter. It is small and has no water source so needs to be grazed with Compt 1 or 3 or for a very short time.

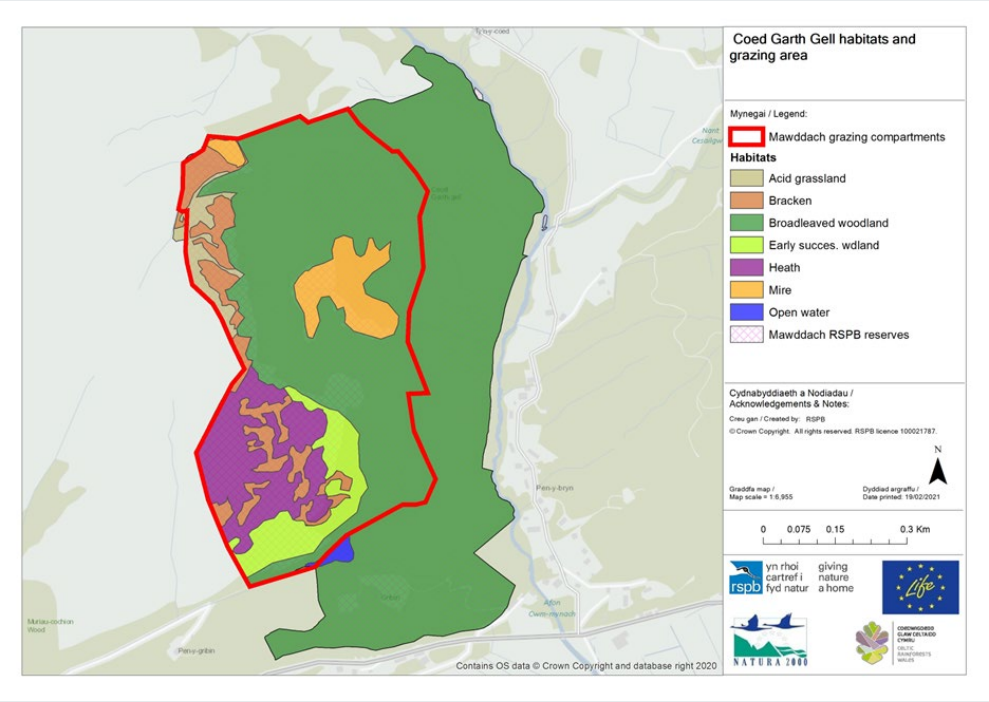
Compt 3 is mire/wet heath with Molinia caerulea (purple moor grass) and was therefore slated for summer grazing. Molinia is more readily eaten in summer; at other times it may be eaten but is not as tasty or nutritious, i.e. other things might be eaten first.

Compt 4 is mainly woodland. As with 2 there was a lot of bramble and holly in this compt making it ideal for autumn/winter grazing. However as there is forage in this section that cattle would eat all year round, eg bramble, regenerating trees which are dense in some areas, and other forest flora, this compt could also be used as an area where the animals could be placed when they weren't needed or couldn't find sufficient forage elsewhere on the site.

See maps below for habitat distribution and compts.



Map 1. Grazing compartments at Coed Garth Gell



Map 2. Habitat distribution at Coed Garth Gell.

Grazing year 1 (2019 - 2020)

Coed Garth Gell was completed in sections, and three highland cattle were introduced to Compt 1 on November 1st 2019 as this was the first completed section. This compt is 11ha of mainly heath, but includes some areas of woodland. In early 2020 Compt 2 was completed and the cattle were given access (an additional 3 ha). Restrictions imposed as a result of the Covid 19 pandemic stopped fencing works after this, which delayed the rotational grazing plan, and meant that the cattle stayed in Compt 1 for much longer than planned. They eventually had to be taken off site due to lack of forage on 27th September 2020, and they had made a big impact during this time, especially on the bramble understory within the wooded areas. Although eventually they began to lose condition and had to be removed, it is interesting to note that the 14ha sustained them through nearly a year's grazing. It is also worth noting that after they were removed they quickly recovered condition, and within a few months were the same as the pasture-fed animals.

Figure 2 (left). Cattle grazing compartment 1 on their first day of grazing.

Figure 3 (right). Same area in June 2023. Bramble has not returned.

Grazing year-2 (2021)

Cattle returned in late 2020, as soon as the next compartments were completed. The very last works were completed in January 2021, and the cattle remained in Compt 3 until September, when they were moved to 2 following the planned grazing rotation. However as the bramble had not grown back in Compt 1, and Compt 2 is too small to be grazed by itself for long, they were given access to 3 after a couple of months.

Grazing year-3 (2022)

In January the cattle were moved to Compt 4, which has bramble and other winter forage. They stayed there until March, but for the rest of this year the grazier moved them between the different compts a number of times. This happened largely because Compt 1 had still not had much bramble regrowth, so they were moved around in search of forage. By June the Molinia had started to regrow, so over the summer their forage needs were being met; but at the same time their impact on the site had been very favourable, and it was felt that the same animals could be used at other sites without having a negative result for Coed Garth Gell. Therefore at the end of August the cattle were removed and taken to RSPB Coed y Parc, which is a few miles away across the Mawddach estuary.

Grazing year-4 (2023)

In 2023 the cattle didn't return to Coed Garth Gell until 15th June. The compartments slated for winter/ spring grazing, i.e. 1,2 and 4, all still contained only small amounts of bramble and other browse so it suited

both cattle welfare and ecological needs to retain the animals on a different RSPB site until the Molinia began to grow back well. As it had been a cold spring, that was not until June, so they were moved back into Compt 3 in mid-June after TB testing.

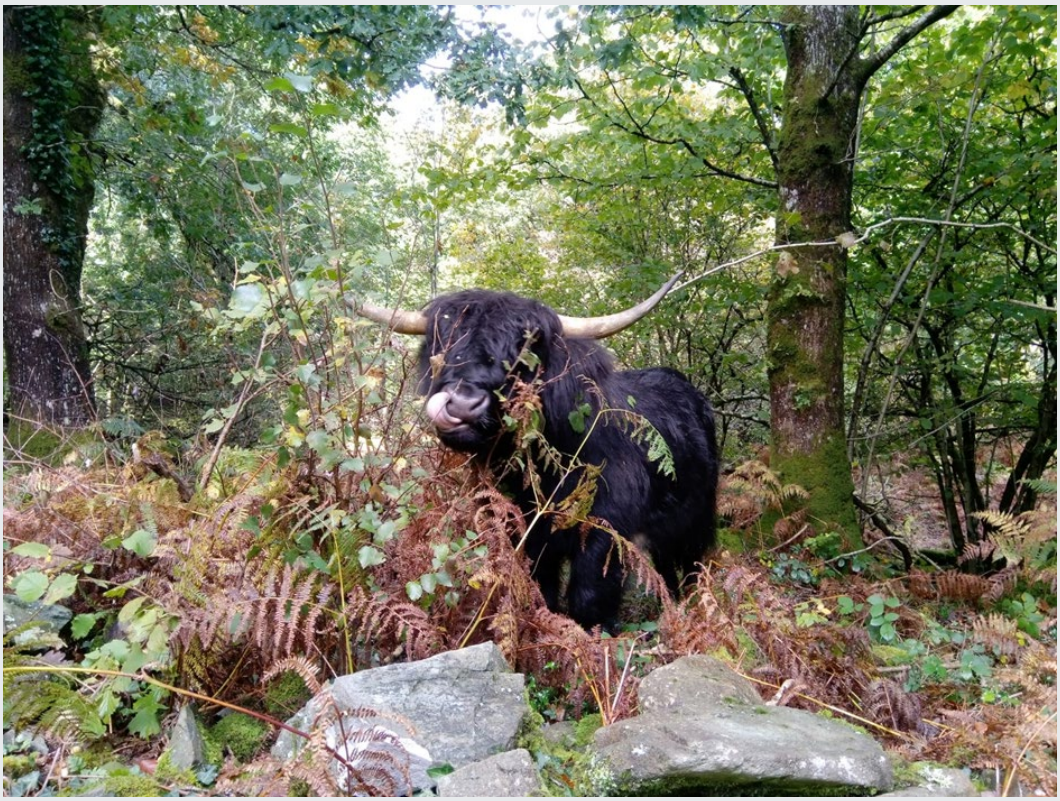


Figure 4. Highland cattle grazing within Coed Garth Gell.

Summary

Cattle breed: Highland cattle seem very happy with rough woodland grazing. They prefer other herbage to grass generally, and enjoy a varied diet. They are also sturdy and agile and have coped well with the terrain. They enjoy the Molinia and put on condition with Molinia grazing.

Grazing levels: Although initial plans suggested that year-round grazing at 0.2 LSU, i.e. 7 cattle, would be needed at Coed Garth Gell, our current assessment is that the site could sustain 3 animals all year round, i.e. a stocking density of around 0.08 LSU/ha/year. It should be noted however that as three of the compts within this site contain areas of Molinia, this helps the cattle to regain condition in the spring and summer. As things stand in summer 2023, we are actually grazing at an even lower density, as three cattle are now grazing this site in conjunction with two other sites (part of both RSPB Coed y Parc and part of RSPB Abergwynant y Waen). This means that they now graze a total of 53 ha which works out as 0.06 LSU.

Several factors are influencing this. Compt 1 was heavily grazed in 2020 as the cattle were kept there longer than planned, so the bramble and other understory scrub was considerably knocked back, and so far has not grown back to previous levels. This has meant that other compartments were in turn grazed slightly more than planned, so that there has been less forage across the whole site than there might have been if

we had been able to properly manage the rotation. Compt 1 was not ready to be grazed again until July 2022, when the Molinia on the ffridd was growing.

At the same time, periods of very low rainfall in spring and summer during this period (2020 – 2023) have helped to inhibit re-growth of forage that had been knocked back by the cattle. It was always understood that stocking levels would need to vary according to climate and weather conditions. However, it was anticipated that the effects of climate change would lead to more vegetation growth locally, so that higher grazing densities would be needed. So far this has not been the case, which is likely due to the periods of low seasonal rainfall experienced during this time.

There are also various advantages to this very low density of grazing which have meant that we have not so far sought to increase cattle numbers. At the outset there were some concerns that allowance would need to be made for sufficient tree regeneration to sustain the woodlands, i.e. that we might need to protect individual saplings, or exclude grazing from certain areas. However given the very low density of animals (which means that each compt has regular periods of zero grazing) this has not been necessary.

Another advantage has been a lack of worms and liver fluke. Although fluke is present locally, the cattle that have been in the woods grazing over such a large area have been free of fluke. This is probably due to the low grazing density, but also the cattle do graze on various plants within the wood, such as the male fern (Dryopteris filix-mas), which are known to have vermicidal qualities.

Finally, it has been useful and convenient to be able to use the same animals to graze the other reserves on the Mawddach, using the same grazier. Although they have had a good impact during this time, it is clear that we will need to increase grazing pressure to a stocking density of at least 0.08 LSU/ha/year if we want to continue to produce the required ecological benefits within Coed Garth Gell.

Appendix I: Photomonitoring results

Coed Garth Gell photopoint compt 1: November 2019 pre-grazing.

November 2020: As well as the reduced bramble undergrowth in the foreground, the bracken in the background to the left has been knocked back.

March 2021: holly has largely disappeared from the foreground after the winter.

November 2021: some regrowth of holly and bracken.

November 2022: holly and bramble have not increased.

May 2023: spring growth of bilberry noticeable in foreground.

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The Celtic Rainforests Wales project has received funding from the LIFE Programme of the European Union.