



Ecological Appraisal for Berlan Llwyd

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Introduction

This is an ecological appraisal of land at Berlan Llwyd, Llanbradach (Figure 1). The purpose of this report is to inform long term management of the land for biodiversity and other environmental benefits. The owner of the land has constructed a one storey wooden building on site and intends to apply for accreditation under the One Planet scheme.

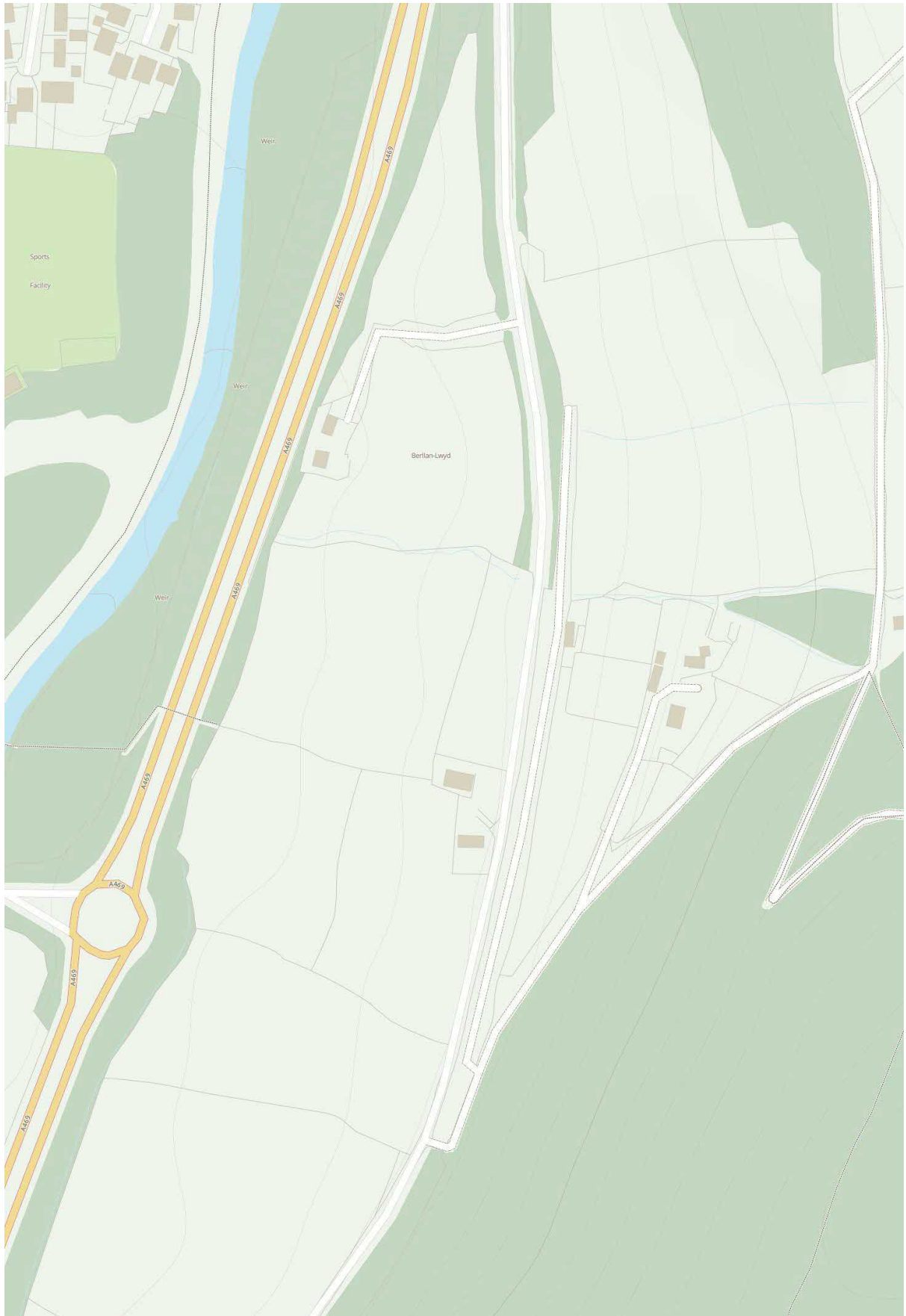


Figure 1: Location plan

Methods

A site visit was conducted on the 29th of August 2022 during which habitats within the site were mapped using Phase 1 Habitat Survey standard (JNCC 1990) and features of interest were identified with target notes.

Data on species, habitats, and protected sites within 2km of the site was obtained from South East Wales Biodiversity Records Centre (SEWBREC). Information from Caerphilly County Borough Council was also used for further detail on locally designated nature sites.

Results

Habitats

The site (Figure 2) consists of two fields separated by a road lined with sycamore *Acer pseudoplatanus* and hornbeam *Carpinus betulus* with occasional oak *Quercus sp.* (photo 1). It slopes down towards the river Rhymney. Both fields appear to be semi-improved neutral grassland with species including Cocksfoot *Dactylis glomerata*, rye grass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, bent *Agrostis sp.*, yarrow *Achillea millefolium*, white clover *Trifolium repens*, sorrel *Rumex acetosa*, bracken *Pteridium aquilinum* and nettle *Urtica dioica*.



Figure 2: Habitat map of the site

Target notes

1. Patch of Himalayan balsam
2. Himalayan balsam along stream
3. Mature oak tree
4. Beehives



Photo 1: Lane through site

The field north of the road contains a small wooden building close to the road and a large mature oak (photo 2) in the centre of the field.

The field on the south side is bordered on the southern edge by a small fast flowing stream with stony substrate lined with mature trees. The invasive plant Himalayan

balsam *Impatiens glandiflora*
is found along the stream and in small patches elsewhere (photo 3).



Photo 2: Mature oak



Photo 3: Small patch of Himalayan balsam

Within 2km of the site SEWBREC hold habitat mapping of 24 habitats, of which the most common is bracken (see Appendix 1). There is no previous habitat mapping of the two fields, but the southern boundary of the site is recorded as semi-natural

broadleaved woodland, which is a priority habitat under the Environment Wales Act. Similar woodland is also recorded immediately north of the site and in more extensive areas nearby.

The record of designated sites includes areas registered as ancient woodland by NRW including the area immediately east of the site beyond Pandy Lane, which is recorded as ancient woodland site of unknown category. This in turn links to areas of semi-natural ancient woodland and restored ancient woodland in Coed Margaret-Shon.

Species

The mature trees mentioned above are of ecological significance both in their own right and as potential bat roosts. The tree lines within and around the site are also likely to be used by bats as commuting routes to move between roosts and from roosts to feeding areas. The closest species record to the site held by SEWBREC (Appendix 1) is of unidentified bats 23m away and there are 132 records of bats within 2km.

[REDACTED]
[REDACTED] Smaller mustelids such as polecat *Mustella putorius*, weasel *M. nivalis* and stoat *M. erminea* were also recorded as were grey squirrels *Sciurus carolinensis* and brown hare *Lepus europaeus*. Records of otters *Lutra lutra* along the river Rhymney were made some distance from the site but otters are known to travel considerable distances and to follow smaller streams like the one on site, particularly when breeding.

Although not included in the species records the protected species dormice *Muscardinius avellanarius* are mentioned in the site descriptions of the three nearest designated sites and may be present in suitable habitat along the tree lines.

Observations on site show that rabbits *Oryctolagus cuniculus* are present.

Reptile and amphibian records are mostly located on the other side of the river Rhymney or over 700m from the site. The grassland habitat is considered suitable for common reptiles and for amphibians when on land.

There are 570 bird records in the local area covering a wide range of species and the trees and shrubs around the site are suitable for nesting.

Invertebrate records in the area mainly cover bees, butterflies and dragonflies and damselflies but a diverse assemblage of ladybirds has been reported by the landowner, who also has beehives in the north field.

Sites

Within 2km there are ten Sites of Importance for Nature Conservation (SINCs) designated as important in the local area (Appendices 2-4). The nearest are the river

Rhymney 36m west of the site Mynydd Dimlaith 146m southeast at Mynydd Bach Slopes 232m northeast. The latter two sites support a range of woodland and grassland habitats and are considered likely to support a high diversity of plant, fungi, and animal species.

There is one Site of Special Scientific Interest (SSSI) within 2km 1771m to the southwest on the other side of the valley.

Evaluation

Due to the position of the site between multiple SINC's it is considered of local ecological value, with potential to achieve county ecological value with appropriate management.

Recommendations

The owners of the land have expressed interest in managing the site for wildlife and the following recommendations will contribute to that.

Himalayan balsam within the site will need to be controlled to prevent further spread. This can be achieved by cutting or pulling up the plants before they set seed – around June. Although it is likely to require multiple attempts before the existing seed bank in the soil is exhausted. As an alternative cattle grazing has been found to be effective in limiting the spread of Himalayan balsam (Himalayan Balsam Wales 2022) but this would limit the potential for natural regeneration (see below).

All existing trees within and around the site must be preserved due to their high biodiversity value.

The planting of additional trees and hedgerows within the site would provide suitable habitat for a range of species including birds, bats, and dormice. It is understood that the use of hedges to screen the building has already been considered and further planting would be beneficial if the following recommendations are followed. New hedges and tree lines should be planted to connect with existing ones to provide habitat corridors through the site. Plants chosen must be native to Wales and ideally from a nursery specialising in local provenance trees from southeast Wales.

It is planned that the existing building will be roofed with sedum and this and the area immediately around the building provide an opportunity for the planting of wildflowers that will provide a visual benefit as well as a food source for the bees being kept on site and native insects

A pond provides one of the easiest and most rapid ways to both benefit biodiversity and to use natural habitats to fix carbon dioxide (Anderson 2022). Due to the sloping nature of the site the precise location of the pond will need to be decided based on drainage and the need to avoid flooding of properties further downhill. To increase habitat diversity, it is recommended that at least two ponds are dug and that the depth within these is varied with a maximum of around 1m and wide shallow margins, which are favoured by many

amphibians. Clay lining is preferred over artificial pond liners as it is more robust and avoids the risk of plastic pollution as a liner decays.

Ponds should be left at least 12 months to allow pond plants from the local area to colonise and only if they are unvegetated in the second spring after construction should planting with suitable plants native to Wales be considered.

The site has potential to allow natural regeneration of woodland, sometimes referred to as rewilding. This can be achieved by leaving areas without cutting or grazing for an extended period of time – several decades for a mature woodland, centuries to match the diversity of the nearby ancient woodland. This approach will need to be balanced with access to the site by the owners, the existing biodiversity value of the grassland and the need to control the Himalayan balsam. For this reason, it is suggested that the hedges mentioned above are used to divide off areas of the site that are to be left for natural regeneration while maintaining low intensity cattle grazing in others.

References

Anderson, Penny (2022) Carbon and ecosystems: restoration and creation to capture carbon, online at, cieem.net/wp-content/uploads/2021/05/Carbon-and-habitats-paper-v3.pdf accessed 13/9/22

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