

**PROPOSED POULTRY UNIT
WOODLAND AND LANDSCAPE REPORT**

**Land at
CAE MAWR
ANGLESEY**

Report for Roger Parry and Partners
February 2019



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1 INTRODUCTION

1.1 BACKGROUND

Arbor Vitae were commissioned to carry out a Phase One Habitat Survey, including a Protected Species assessment, of land at Cae Mawr near Llanerch-y-medd, Anglesey. This land will be the subject of a planning application for the construction of a two free range egg-laying poultry buildings and associated infrastructure.

A field survey was carried out on 4 July 2018 and a report was presented in September 2018.

Comments on the planning application were presented by Isle of Anglesey Council including a paper from the Ecological and Environmental Advisor, Dave Cowley ecologist.

This made the following points:

- Further assessment needed on potential impact of ammonia of the adjacent ancient woodland
- Clarification required on hedgerow loss and replacement, including planting specifications
- Clarification required on new woodland planting, including planting specifications
- Further assessment of AW in relation to proposed management plan
- External lighting to be minimal and bat-friendly
- Location plans needed for planting and nest boxes

A subsequent telephone conversation was held with Mr Cowley by the author of the habitat survey report on 29 November 2019. It was agreed that more details on the woodland survey would be provided, along with further assessment of the potential impact of increase ammonia. It was agreed to provide further consideration on future management of the woodland.

A more detailed description of the woodland is provided below (Section 2), including an assessment of the potential impact of ammonia. and proposals for management. Details on ammonia mitigation and landscape enhancements are provided in Section 3.



2 WOODLAND DESCRIPTION AND ASSESSMENT

2.1 WOODLAND DESCRIPTION

Cae Mawr woodland extends to approximately 1.2 ha (2.9 acres) and lies between the road and the farmstead. This area is itself divided by the access track to the house and farm buildings. Part of the woodland area adjacent to the access drive comprises a mown grass area. The actual wooded area therefore is restricted to approximately 2.0 acres.

The wood is primarily dominated by mature, broad-leaved trees. The canopy is more or less closed and dominated by sycamore (80 per cent of canopy) with occasional beech and horse chestnut. Ash forms the only native component of the canopy and occupies approximately 10% of the canopy. This is mainly restricted to areas near the stream. Other introduced non-native species include Wellingtonia, monkey puzzle, common lime and Douglas fir. The woodland has the appearance of having been planted as an amenity feature in the Victorian era and has used species in vogue at that time.

The understorey includes abundant sycamore with ash, holly, and occasional wych elm and wild cherry. Sycamore is actively regenerating and is likely to increase in abundance as other species decline. The likely loss of ash due to disease will allow further increase in the extent and dominance of sycamore.

The shrub layer is heavily dominated by rhododendron which covers large areas to the exclusion of any other shrub or ground flora species. Holly and elder are frequent in small areas not dominated by rhododendron. Bramble is locally frequent with abundant sycamore regeneration. Other minor shrubs include hawthorn, gooseberry and mountain currant.

Ivy dominates the ground flora over large areas and there is extensive bare ground and leaf litter. Ivy is frequently associated with previous soil disturbance and its abundance here may indicate previous grazing or other intervention. Ferns are frequent including male fern, hart's tongue, broad buckler fern and soft shield fern. The predominance of rhododendron, with ivy occupying more open areas, allows few opportunities for other ground flora species and, other than ferns, only four species were recorded. These were occasional bluebell, herb bennet, herb robert and red campion. The species count is remarkably low for an ancient woodland site.

One small, more open area towards the western edge of the woodland showed signs of increased nutrient status and probable disturbance with a range of indicative herbaceous species including nettle, hogweed, cow parsley, cleavers, rosebay willowherb and red campion.

The wood includes a stream in a deep, steep-sided channel. The steep shaded banks of the stream channel exhibit a small range of bryophytes.



2.2 WOODLAND ASSESSMENT

The presence of bluebells probably indicates that the woodland occupies an ancient woodland site, although no other ancient woodland indicator species exist. The woodland appears to have been replanted in the Victorian era using predominantly non-native species which still predominate. The canopy is therefore dominated by non-native species and this is reflected in the shrub layer which similarly is dominated over large areas by the non-native shrub rhododendron. The dense shade of the canopy, along with that of rhododendron, result in a dense leaf litter and an abundance of ivy. This effectively excludes other herbaceous species which are now scarce.

The current ecological status of the woodland is low due to the dominance by non-native species and the probable low biomass of woodland invertebrates. However, given its location on an ancient woodland site, it has good potential for restoration to a more semi-natural state. This will require significant intervention to prevent the increase in sycamore, to reduce or eliminate rhododendron and to encourage native species.

2.3 POTENTIAL IMPACT OF INCREASED AMMONIA

The Ammonia Modelling Report concludes that:

The process contribution from the proposed poultry houses at Cae Mawr to annual mean ammonia concentration would exceed the Natural Resources Wales lower threshold percentage of the precautionary Critical Level of 1.0 $\mu\text{g-NH}_3/\text{m}^3$ over the western half of the AW directly to the east of Cae Mawr.

The woodland occupies an AW site and it retains a few AW features such as occasional bluebells. However, it is in a significantly unfavourable condition ecologically and would benefit from long-term restoration involving reduction of non-native species. Part of the western section is in any case managed as an open glade by regular mowing.

The woodland does not appear to retain any sensitive ecological receptors which may be affected by increased ammonia levels, other than a small population of bluebells. A small rise in ammonia levels may encourage an increase in nutrient levels in the woodland but, given the lack of sensitive plant species, any change in nutrient status is unlikely to have a significant impact. Far greater changes to the woodland have resulted from the prevalence of non-native species and it is considered that the instigation of suitable management designed to remove non-native species would result in far greater positive impact. Realistically, this will only be achieved if it forms part of a mitigation scheme for the proposed poultry installation.



2.4 WOODLAND MANAGEMENT

The long-term vision for the woodland is to achieve restoration of a semi-natural woodland structure with a predominance of native species in both the canopy and shrub layer. This needs to be achieved gradually, allowing the existing tree cover to mature and senesce, although the removal of the dense rhododendron could be achieved more quickly.

The prescriptions for management of the woodland are as follows:

Year 1-3

- Formulation of a Woodland Management Plan
- Removal of rhododendron through cutting, chipping and treatment of stumps to prevent regrowth.
- Planting of replacement shrub layer including hazel, holly, wild privet – all of which are shade-tolerant.
- Removal of all seedling and sapling sycamores
- Erection of 12 Schwegler 1B nest boxes for small bird species.
- Erection of 3 Schwegler 2FN bat boxes.
- Monitoring of ground flora following removal of rhododendron.
- Retain all dead, dying or fallen timber as invertebrate habitat.

Year 4-10

- Continued maintenance of bird boxes
- Continued prevention of sycamore regeneration
- Consider group planting of replacement canopy trees if and where light levels allow. Species to include oak, rowan, small leaved lime.

3 LANDSCAPE ENHANCEMENTS

3.1 MITIGATION FOR ENHANCED AMMONIA LEVELS

Proposals have been made to plant a new woodland area as a 'sink' for increased ammonia levels. Centre for Ecology & Hydrology and Forest Research have demonstrated that trees provide an effective way of absorbing atmospheric ammonia. Their calculations demonstrate that, for this geographical location and for the species used, approximately 20% of ammonia will be captured after 20 years of tree growth (Tree Shelter Belts for Ammonia Mitigation, CEH). The new woodland areas will occupy an area of approximately 0.5 hectares. These will be situated adjacent to the existing ancient woodland both to act as a buffer and also to facilitate the spread of woodland organisms.



Species will be as follows:

SPECIES		PERCENTAGE
Quercus petraea	Sessile oak	45
Tilia cordata	Small- leaved lime	10
Betula pendula	Silver birch	10
Prunus avium	Cherry	10
Malus sylvestris	Crabapple	5
Corylus avellana	Hazel	5
Ilex aquifolium	Holly	5

All trees will be protected against rabbits with appropriate tree guards and fenced against stock. All trees will be maintained free of weed competition for three years and any losses replaced.

3.2 LANDSCAPE ENHANCEMENTS

A total of 549 metres of new hedgerow will be planted as indicated on Figure 3.

Species will be as follows:

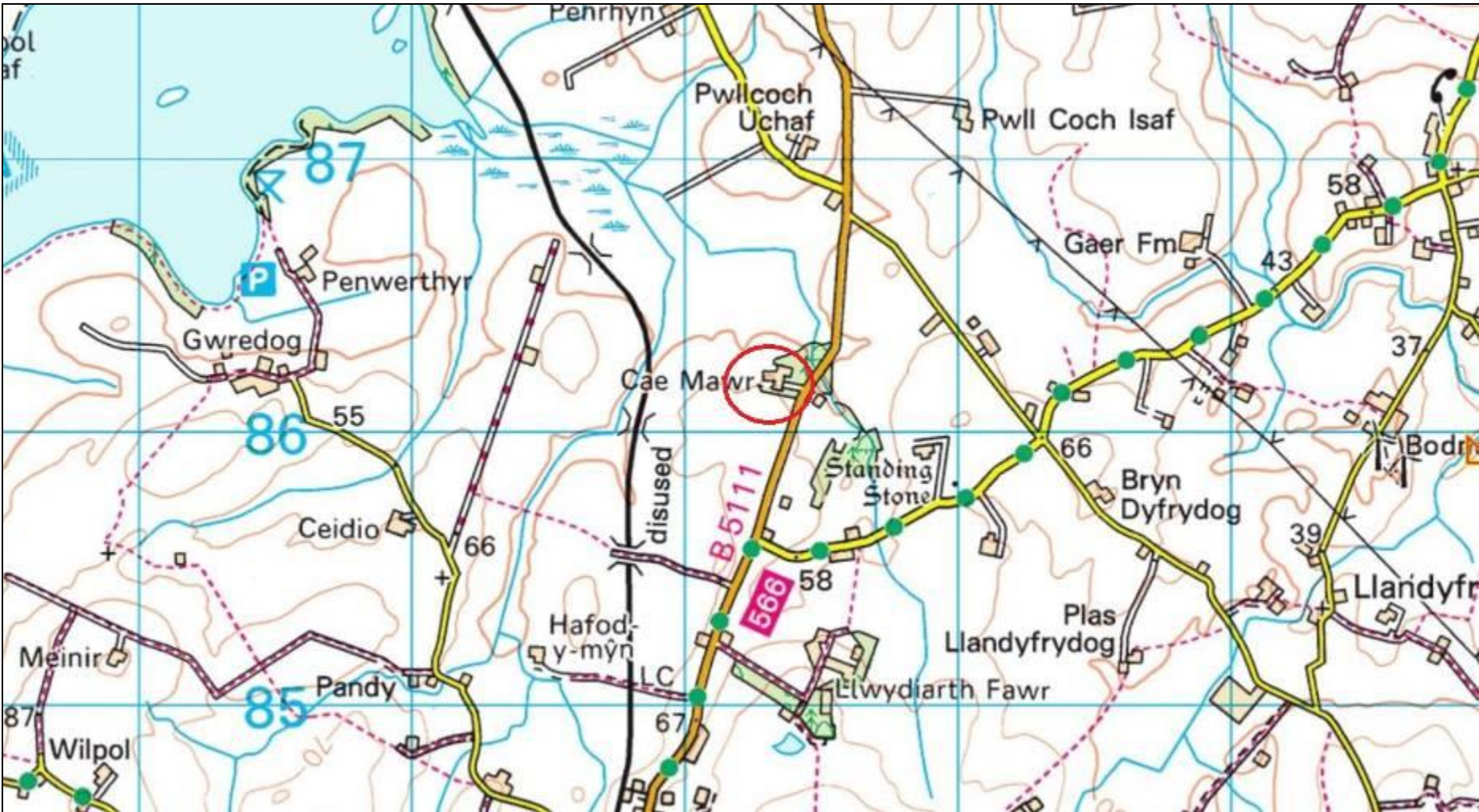
SPECIES		PERCENTAGE
Crataegus monogyna	Hawthorn	50
Prunus spinosa	Blackthorn	20
Corylus avellana	Hazel	10
Ilex aquifolium	Holly	5
Viburnum opulus	Guelder rose	5
Cornus sanguinea	Dogwood	5
Acer campestre	Field maple	5

All plants will be guarded against rabbits and fenced against sheep. All plants will be maintained free of weed competition for three years and any losses replaced.

The potential for increased grazing pressure by chickens to damage hedgerow ground flora can be readily mitigated through double-fencing of all hedgerows within the ranging area. The protection of hedgerows which are currently grazed and browsed by sheep and cattle will be a significant ecological gain.



FIGURE 1: LOCATION



Arbor Vitae Environment Ltd
Lower Betton Farm
Cross Houses
Shrewsbury
Shropshire
SY56JD

FIGURE 2: SITE LAYOUT

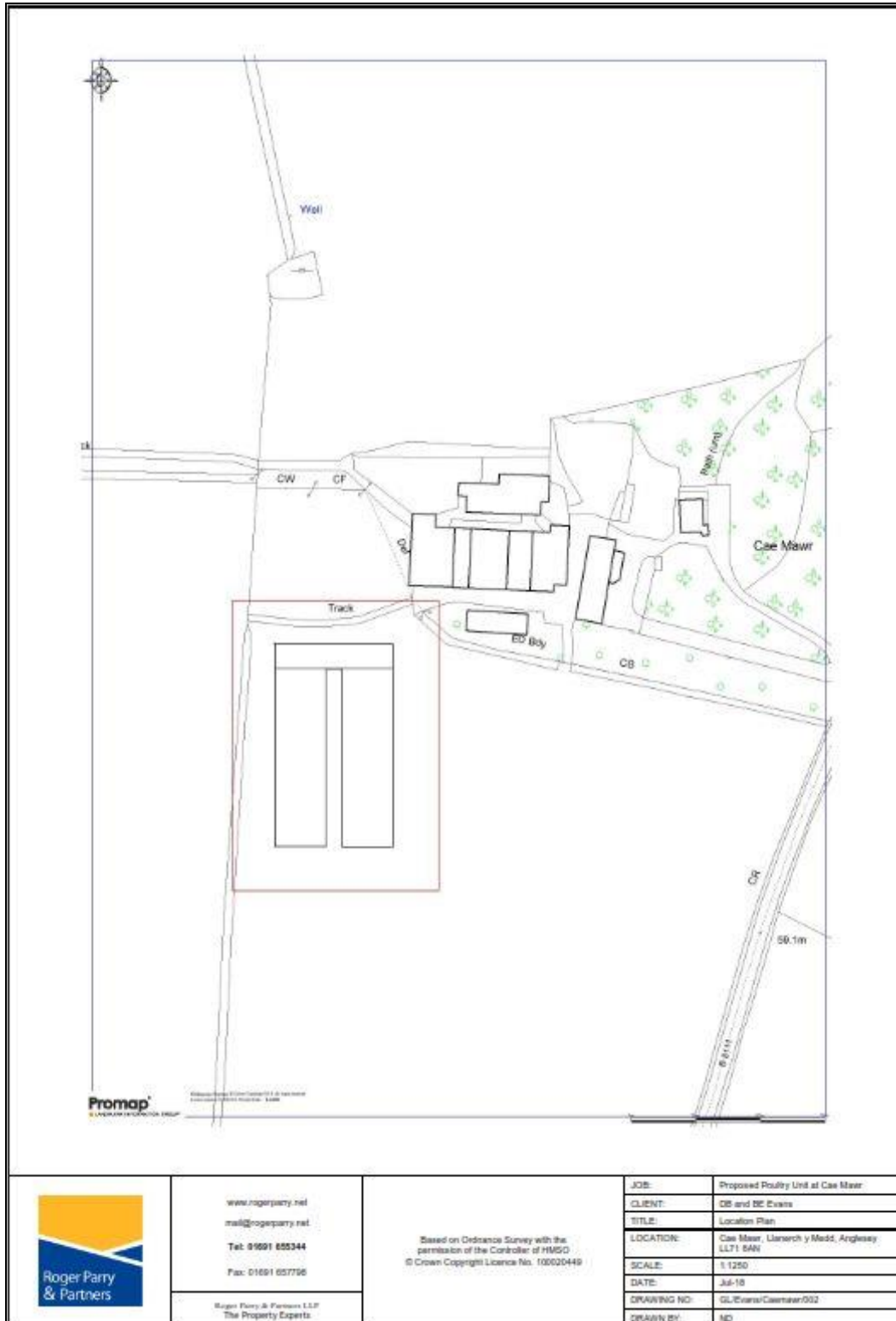
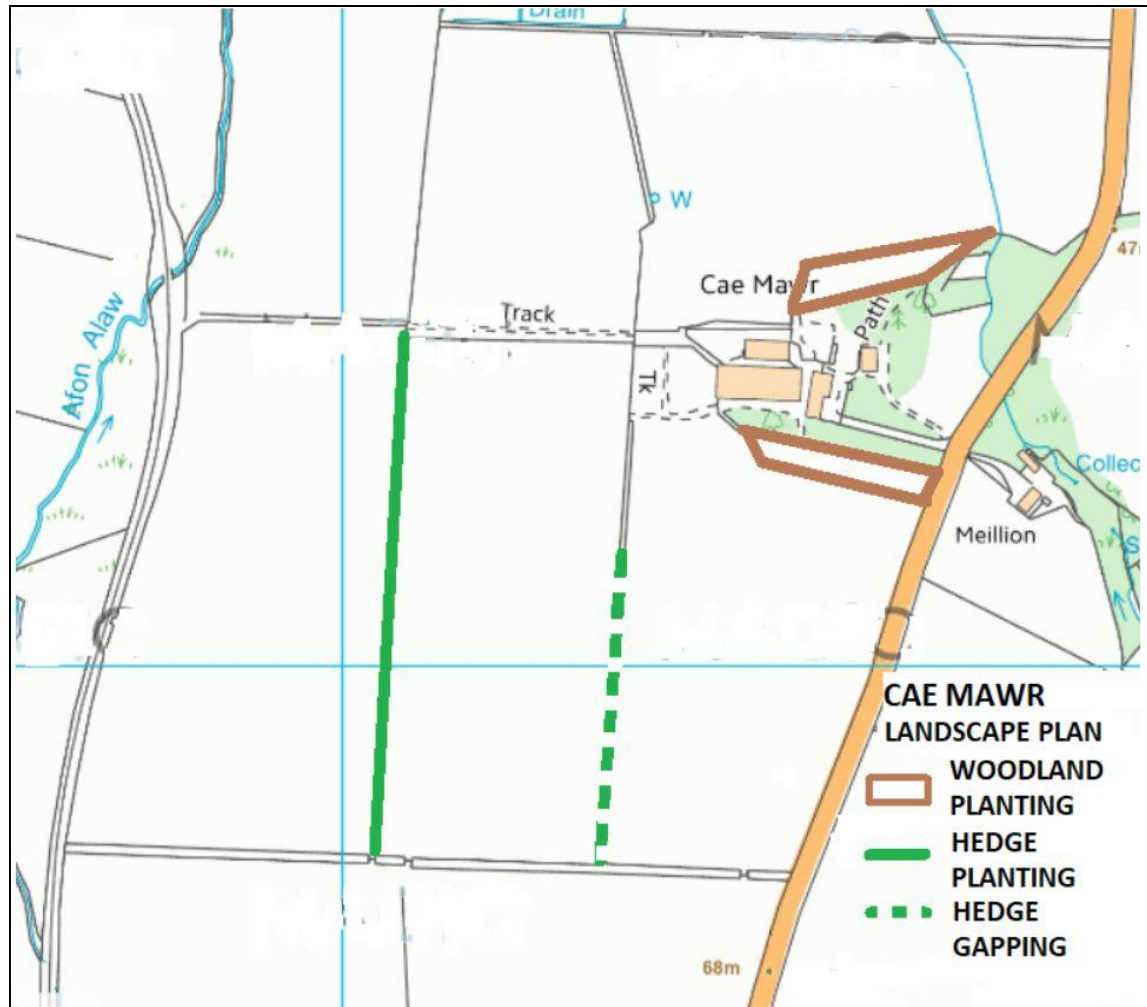


FIGURE 3 LANDSCAPE ENHANCEMENT PLAN



Arbor Vitae Environment Ltd
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