



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

CAE MOR, LLANGOLLEN

Project name: Cae Mor, Llangollen, LL20 7BD

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Requested by: Roger Parry and Partners



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ECOLOGY • FORESTRY • LAND USE

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the construction of four organic free-range poultry units, packing plant and access track at Cae Mor, Llangollen. The proposals will include the creation of outdoor ranging areas.

Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

A version of this report was submitted in support of the planning application in February 2021 with the Preliminary Ecological Appraisal being carried out in August 2020. Further to comments received from Wrexham County Borough Council, further amendments have been made to the report to address these concerns. New or updated information can be identified by *italics* for ease. The additional information primarily includes the results of a biological data search by Cofnod and the production of a Habitat Map to cover the site and ranging areas for the project.

1.2 SCOPE OF SURVEY

The survey is primarily designed to:

- Identify and record habitats and important ecological features on site;
- Evaluate the potential of the proposed development site to provide opportunities for protected species;
- Determine any likely impact which the development and landscape proposals may have on these.
- Identify opportunities for the enhancement of habitats and biodiversity features on site.

1.3 KEY PRINCIPLES

All ecological surveys conducted by Arbor Vitae Environment Ltd are underpinned by the following key principles, as outlined by CIEEM (2018):

Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation - Adverse effects should be avoided or minimized through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2 SITE DESCRIPTION

2.1 LOCATION, LANDSCAPE, AND BACKGROUND

Cae Mor farm is located on the B5479, approximately 4km north west of Selattyn (Figure 1). The surrounding landscape is dominated by agricultural fields, associated hedgerows and woodland blocks (Figure 2).

A planning application under reference P/2015/0810 was granted permission for the erection of a free range egg production unit (16,000 Birds), including silos and associated works in 2017. This unit is positioned on land to the south east of the proposed site at Cae Mor Farm.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was composed to gain background information regarding any protected species or designations within the area. The main sources of information were *Cofnod*, MagicMap, Lle Map Browser and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 13/08/2020. The survey was carried out in accordance with CIEEM (2017) best practice guidelines. The objective of the survey was to find and record any signs of use by protected species and to note the habitat features present.

An assessment of the available habitats both on and adjacent to the site led to consideration of the potential of the site for the following protected species:

- Badgers
- Bats
- Breeding birds
- Great Crested Newts
- Hazel dormice
- Reptile species

The survey methodology was tailored to evaluate the area for these species in the following ways:

Badger

An area within 50 metres of the site was closely searched for the following signs of badger activity:

- Setts,
- Tracks and footprints,
- Latrines,
- Snuffle holes.

Bats

The site was assessed in terms of its suitability to support bat species. Hedgerow habitat and nearby potential habitat were assessed and recorded and potential impacts from the proposals considered.

Breeding birds

The site was assessed in terms of its suitability to support breeding bird populations. Hedgerow habitat and nearby potential habitat were assessed and recorded.

Great crested newts

A desk study and a ground search were conducted to search for any areas of open water within 500 metres. Waterbodies were then assessed based on the Habitat Suitability Index for great crested newts (Oldham et al., 2000 and ARG UK, 2010).

Hazel dormice

The site was assessed in terms of habitat suitability and connectivity to another suitable habitat. The following features were noted:

- Proximity to existing distribution,
- Presence of hazel,
- Gnawed hazel nuts,
- Presence of honeysuckle or other suitable nest building materials.

Reptiles

The site was assessed based on its suitability to support reptile populations including connections to terrestrial land from water and suitable resting habitat nearby.

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM, Ecologist.

3.4 CONSTRAINTS

There were no constraints to the survey being carried out successfully.

4 SURVEY RESULTS

4.1 DESK STUDY

The Cofnod data search and desk study found that within 1km of the site there were the following designations:

Name	Designation	Distance from site
<i>Cae Mor</i>	<i>Local Wildlife Site Ancient Semi-Natural Woodland</i>	<i>0.4km</i>
<i>Cae Nant Iorwerth</i>	<i>Local Wildlife Site</i>	<i>1km</i>
<i>Coed Collfryn</i>	<i>Local Wildlife Site Ancient Semi-Natural Woodland</i>	<i>1km</i>
<i>Y Bryn</i>	<i>Local Wildlife Site</i>	<i>1km</i>
<i>River Dee</i>	<i>SSSI, SAC</i>	<i>1km</i>
<i>Wood at Cae Mor</i>	<i>Ancient Semi-Natural Woodland</i>	<i>0.3km</i>
<i>Wood at Briwnant</i>	<i>Ancient Semi-Natural Woodland</i>	<i>0.5km</i>
<i>Wood at Llangwryd Uchaf</i>	<i>Ancient Semi-Natural Woodland</i>	<i>0.8km</i>
<i>Wood at Nant Gwryd</i>	<i>Ancient Semi-Natural Woodland</i>	<i>0.8km</i>
<i>Bather Wood</i>	<i>Ancient Semi-Natural Woodland</i>	<i>0.9km</i>
The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR. ¹		

¹ SSSI: Site of Special Scientific Interest, SAC: Special Area of Conservation, SPA: Special Protection Area, LWS: Local Wildlife Site NNR: National Nature Reserve, LNR: Local Nature Reserve.

Results from the Cofnod data search and desk study revealed that within a 1km radius of the proposed development site the following protected species have been recorded:

Species	Distance	Protection
<i>Water vole</i>	<i>0.8km</i>	<i>Wildlife and Countryside Act 1981.</i>
<i>Badger</i>	<i>0.9km</i>	<i>Protection of Badgers Act 1992, Wildlife and Countryside Act 1981.</i>
<i>Hazel dormouse</i>	<i>0.9km</i>	<i>European Protected Species, Wildlife and Countryside Act 1981.</i>
<i>Lesser Horseshoe bat</i>	<i>0.8km</i>	<i>European Protected Species, Wildlife and Countryside Act 1981.</i>
<i>Common pipistrelle</i>	<i>0.7km</i>	<i>European Protected Species, Wildlife and Countryside Act 1981.</i>
<i>Brown long-eared bat</i>	<i>0.9km</i>	<i>European Protected Species, Wildlife and Countryside Act 1981.</i>
<i>West European hedgehog</i>	<i>0.6km</i>	<i>S41 NERC</i>
<i>Brambling</i>	<i>0.5km</i>	<i>Wildlife and Countryside Act 1981.</i>
<i>Fieldfare</i>	<i>0.5km</i>	<i>Wildlife and Countryside Act 1981.</i>
<i>Redwing</i>	<i>0.9km</i>	<i>Wildlife and Countryside Act 1981.</i>
<i>Barn Owl</i>	<i>0.8km</i>	<i>Wildlife and Countryside Act 1981.</i>
<i>Brown hare were also recorded within 1km of the site which are a priority species in the UK.</i> <i>The European hedgehog is a Species of Principal Importance under section 41 of the Natural Environment and Rural Communities Act 2006. Hedgehog are a priority species in the UK due to a decline in the amount of suitable habitat available to them through the development of land.</i>		

There are no records of protected species for the site itself and the boundary of the proposed development site is not intersected by any protected habitats or designated site.

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010).

Improved grassland

The field site in question is an improved grassland field including: Yorkshire fog, perennial ryegrass, creeping buttercup, creeping thistle, broad leaved dock, common nettle, ragwort and a small localised patch of harebell. The site slopes down from south to north and plateaus in places. The grassland is grazed and mown on an annual rotation.

Trees

Remnant hedgerows are present which have become tree lines with mature specimens to include hawthorn, sycamore, downy birch, mountain ash and oak. The tree lines separate field boundaries but have large gaps within their lengths.

Hedgerow

There is a native species hedgerow present at the roadside to the south of the site. The species present include mountain ash, hazel and ash.

4.3 ADJACENT HABITATS

Grassland

The surrounding landscape is made up of improved and semi-improved grassland used for agricultural purposes.

Woodland

A small wooded valley consisting of broadleaved trees sits to the south west of the site with plantation conifer blocks present in the wider landscape namely to the south. There are 5 areas of semi natural ancient woodland within 1km of the site, the closest being 0.3km away.

Running water

A small stream runs within the wooded valley mentioned above and sits approximately 140m from the site at its closest point.

Standing water

An artificial pool has been created and water diverted from the stream to maintain the water levels for Pond 1. This is the only pond found within 500m of the site and sits 200m to the south west of the site.

There are five ponds mapped in total (Figure 4) but of these, only one was found to be present at the time of the survey. The two ponds which are adjacent to Pond 1 are areas of marshy ground which are permanently wet but do not contain any open water.

A small pond mapped within a woodland block to the south is not present on the ground and the pond which is mapped to the east of the site is manmade but does not retain water and has become vegetated throughout. This area is now a hollow in the landscape.

4.4 PROTECTED SPECIES

Badgers

There are records of badger present within 1km of the site but there are no records for the site itself. During the survey there were no signs of badgers found on site but the habitats present provide typical foraging and commuting opportunities for this species.

Bats

The mature trees on site offer linear landscape features for commuting bats and opportunities for foraging.

From a ground level inspection, the mature trees within the vicinity of the proposed units did not appear to possess any potential roosting features such as loose bark, hollow limbs or holes created by other wildlife. The trees provide 'negligible' potential as a bat roost.

Brown long-eared, common pipistrelle and lesser horseshoe have been recorded within 1km of the site but there are no records of bat species for the site itself.

Breeding birds

The habitats on site offer some potential nesting sites to breeding birds particularly the mature hawthorns dotted throughout the site and the mature hedgerow at the roadside boundary.

The grassland itself offers limited opportunities or shelter for ground nesting birds and it is unlikely that ground nesting species would be present on or adjacent to the site given the management regime, improved grassland habitats and proximity of dense tree cover.

During the site visit the following species were recorded on site: blue tit, chiff chaff, wood pigeon, carrion crow and pheasant.

Great Crested Newt

One pond is present within 500m of the site which provides 'below average' suitability as a breeding site for GCN. The shoreline of the pond is heavily shaded by mature trees including alder and goat willow. The water quality of the pond is good and fed by the natural stream nearby. The water then exits the pond and flows downstream into a

GCN HSI Calculator		
	Pond Name	Pond 1
	Grid Ref	SJ22373604
SI No	SI Description	
1	Geographic location	0.5
2	Pond area	1
3	Pond permanence	0.9
4	Water quality	1
5	Shade	0.2
6	Water fowl effect	1
7	Fish presence	0.33
8	Pond Density	0.1
9	Terrestrial habitat	1
10	Macrophyte cover	0.8
HSI Score		0.55
Pond suitability (see below)		<i>Below average</i>

marshy area. Fish appear to be present within the pond and the size of the water body could support a moderate population. There are limited ponds present within 1km of the survey pond and the geographic location of the pond in relation to known GCN distribution is classed as marginal.

The pond is manmade and the margins have been planted with iris and reedmace which dominate the margins. It is unlikely that GCN are present within this pond and there are no records of GCN from within 1km of the site.

Hazel dormouse

There is a record of hazel dormouse from 1km away from 2005. The proposed site does not offer suitable habitat features to dormice as the tree lines are gappy and sporadic and do not provide continuous cover. The grassland on site is of limited value to hazel dormice and the roadside hedgerow appears to be relatively recently planted with some large gaps present.

The overall suitability of the site for this species is low with only small parcels of woodland present within the immediate vicinity, linked by inconsistent hedgerows.

Reptile species

There are no records of reptile species within 1km of the site and the habitats within the red line boundary provide sub-optimal terrestrial opportunities for reptiles.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The proposed development will mainly impact improved grassland which is of low ecological significance. The loss of this habitat type is unlikely to have any significant adverse impacts on the wider landscape and no statutory sites will be impacted as a result of the development.

The proposed access track from the road will necessitate the removal of a short length of hedgerow from the roadside and a small section of gappy hedge from the adjacent paddock, leading into the field site. The impact of this loss will be short term and can be mitigated through replacement planting. The access track will disturb improved grassland paddock and is not expected to have any impact on important ecological features.

Ranging areas for the unit will use improved grassland fields around the site. The land surrounding the site will be divided into a series of temporary paddocks which will be used for between 6-8 weeks at a time. Large areas of improved grassland will remain undisturbed throughout the rotation and it is not expected that any long term ecological impact will arise from this system.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

The survey revealed no signs of use by badger on site and the proposals are unlikely to have any impact on this species. Given that badgers have been recorded within 1km of the site it is possible that they could enter the site for foraging purposes and therefore the construction stage of the development could disturb them. Mitigation is set out below.

Bats

The individual trees and hedgerows on site may provide foraging and commuting routes for bat species within the landscape but do not provide roosting sites for bat species. The site as a whole is of low importance to bats and the wider landscape, including woodland and riparian corridors, provides suitable opportunities for bat species and is more valuable for this group. The proposed development will have no impact on bat species or their roosting sites and no further survey work is required.

The installation of external lighting on site has the potential to interrupt flight lines and disturb foraging/commuting bats if unmitigated. The provision and implementation of a

robust lighting plan will mitigate any potential impacts of external lighting upon the surroundings.

The lighting plan would be designed to comply with The Bat Conservation Trust guidance note 08/18 and will be designed with nocturnal animals in mind to ensure that any nearby foraging/commuting habitats for bat species remain as dark movement corridors.

Breeding birds

The removal of hedgerow to form a new access into the site has the potential to disturb breeding birds, if present. Works to remove vegetation on site will be carefully timed to avoid the nesting season.

The grassland habitats on site are unsuitable for use by ground nesting birds given the habitat type (improved grassland) and management regime. We believe that the proposals will have no impact upon nesting birds and no further survey work is required.

Great crested newt

There is one pond present within 500m of the proposed development which provides 'below average' breeding habitat for GCN. The site itself sits within the 'marginal' category for GCN according to the Habitat Suitability Index. There is a distinct lack of ponds within 1km of the site and there are no records of GCN within 1km.

The proposals will have no impact on this species as it is unlikely that GCN would be present within the vicinity of the site and 1km boundary. The risk of a breach of species protection legislation by the proposals is considered to be minimal and no further survey work is required.

In order to remove any residual risk, a set of precautionary working methods will be adopted which will benefit any amphibians and other small animals within the working area.

Hazel dormouse

The site does not provide suitable habitat for this species and the proposals are unlikely to have any impact. The hedgerow to be removed showed no evidence of dormouse presence (gnawed hazelnuts) and this hedgerow is unsuitable for nesting dormice. The proposals will have no impact on this species and no further survey work or mitigation is needed.

Reptile species

The proposals will have no impact on reptile population nor prime terrestrial habitat and no further survey work is required. Precautionary working measures on site will remove any residual risk to reptile species.

Other

European hedgehogs could be using the site as the habitats available present suitable opportunities for feeding and breeding. The European hedgehog is a Species of Principal Importance under section 41 of the Natural Environment and Rural Communities Act 2006. Hedgehog are a priority species in the UK due to a decline in the amount of suitable habitat available to them through the development of land.

Precautionary methods set out below will help to reduce the impact of the development upon this species.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The proposed development will result in the loss of approximately 0.08ha of improved agricultural grassland and a small amount of roadside hedgerow. The loss of the grassland is of little ecological consequence but the loss of hedgerow will require mitigation. A minimum of 20m of native species hedgerow will be planted on site following completion of the development in order to mitigate for the losses incurred through access improvements.

The hedge will include: hawthorn, hazel, holly, elder, dog rose and wild privet. Planting will be 6 plants per m and all plants will be fitted with a spiral guard and support. Any losses within the first three years will be replaced.

6.2 PROTECTED SPECIES MITIGATION

Badger

The following precautionary measures will ensure that any badgers within the local area are not incidentally disrupted/disturbed as a result of the development:

- A toolbox talk will be given to all site personnel in order to make them aware of the possible presence of badgers, their responsibility to avoid disturbing them, and the avoidance measures to be used on site.
- Any excavations/ditches should be either; covered completely at night time, **or** an access ramp should be left within each separate excavation/ditch to allow badgers or other to escape should they fall in.

- Any chemicals or harmful substances should be kept within a locked container, off the ground and ideally within a structure on site.
- No fire or burning of materials is to take place within 30m of any woodland edge within the vicinity of the site.

Bats

The lighting for the poultry units has been designed to be sympathetic to nocturnal wildlife and details are included within 'Lighting Design Scheme' (Roger Parry and Partners, August 2020). The Bat Conservation Trust's lighting guidance document has been referred to and the following is included:

- *Hedgerows and key habitat features including mature trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife. Illuminance along these features should be below 0.2 lux on the horizontal plane, and 0.4 lux on the vertical plane.*
- *There will be no round the clock external lighting of the site and no use of high intensity security lighting. All external lighting will be downward facing and protected with a cowl to reduce light spill to outside the unit.*
- *During hours of darkness the poultry shed will be illuminated internally to 0.4 lux. The buildings will be clad with high density metal profile sheeting and therefore no light will escape to outside. Regular tests will be conducted to check the effectiveness of the light proofing.*
- *The main building's gable ends will be lit externally with a single low-wattage fitting of low intensity lighting during normal working hours in winter months. Lighting of the site would only be required during working hours in winter months and during bird catching where lighting would be kept as low as practically possible.*
- *Appropriate cowls/shielding of lights would be installed, the light spread would be minimised through use of directional lighting and hours of lighting would be kept to a minimum to reduce disturbance.*

Breeding birds

All planned vegetation removal on site will take place outside of the breeding season from September to February (inclusive).

A thorough ground inspection of the site will be completed prior to works commencing on site if works start between 1st March and 31st August (inclusive) in any given year. If breeding birds are found, an exclusion zone of 5 metres should be implemented and maintained until breeding is complete and the fledglings have left the nest.

The areas to be disturbed will be maintained as short grassland though either mowing or grazing for a period of at least 4 weeks prior to work.

Great crested newt/reptile species/hedgehogs

The following measures will be implemented to decrease the likelihood of killing/injuring small animals such as amphibians and hedgehogs:

- If piles of rubble, logs, bricks, other loose materials or other potential refuges are to be disturbed, this will be done by hand and carried out during the active season (March to October) when the weather is warm to allow animals to disperse naturally.
- The grassland areas will be kept short prior to and during construction to avoid creating attractive habitats for wildlife.
- All building materials, rubble, bricks and soil must be stored on raised platform (e.g. wooden pallets) to prevent their use as refuges by wildlife.
- Where possible, trenches should be opened and closed in the same day to prevent any wildlife becoming trapped. If it is necessary to leave a trench open overnight then it should be provided with a means of escape in the form of a shallow ramp.
- Any open pipework will be capped overnight. All open trenches and pipework should be inspected at the start of each working day to ensure no animal is trapped.
- Any common reptiles or amphibians discovered will be allowed to naturally disperse. Advice should be sought from an appropriately qualified and experienced ecologist if large numbers of common reptiles or amphibians are present.
- If a great crested newt is discovered at any stage then all work must immediately halt and an appropriately qualified and experienced ecologist and Natural England (0300 060 3900) should be contacted for advice.

6.3 ECOLOGICAL ENHANCEMENT

In order to enhance the biological value of the site, the new boundaries created at the edges of the ranging areas will be planted with native species hedgerow if not already present. The hedgerows will be planted outside of the ranging areas to avoid damage by the birds and will be double fenced. The hedgerows will include: hawthorn, hazel, holly, dog rose, wild privet and Guelder rose as a minimum. This will result in the creation of approximately 300m of native hedgerow.

In order to provide shelter, breeding and hibernating opportunities for a variety of wildlife, we recommend that a nest box scheme is adopted as follows:

- 5 Woodcrete general purpose bat boxes, suitable for crevice-dwelling species will be installed into mature trees within the boundary hedgerows. No lighting should be installed in the vicinity of the boxes. They should be at least 3m from the ground and face south or south west.
- 5 Woodcrete cavity nesting bird boxes with 28mm or 32mm access holes. These should be positioned within mature trees on the boundary of the site and the access should face away from the prevailing wind.
- Two hedgehog domes should be installed into the base of mature hedgerows on site with their entrances facing into the centre of the hedgerow.
- *Two owl boxes will be installed into individual mature trees on the land holding in a position where there are areas of open grassland for hunting.*

7 SUMMARY

Planning permission will be sought for the construction of four organic free-range poultry units, packing plant and access track at Cae Mor, Llangollen. A planning application under reference P/2015/0810 was granted permission for the erection of a free range egg production unit (16,000 Birds), including silos and associated works in 2017.

The proposed development will mainly impact improved grassland which is of low ecological significance. The loss of this habitat type is unlikely to have any significant adverse impacts on the wider landscape and no statutory sites will be impacted as a result of the development.

The proposed access track from the road will necessitate the removal of a short length of hedgerow from the roadside and a small section of gappy hedge from the adjacent paddock, leading into the field site. The impact of this loss will be short term and can be mitigated through replacement planting.

Given that badgers have been recorded within 1km of the site it is possible that they could enter the site for foraging purposes and therefore the construction stage of the development could disturb them. Mitigation will be adopted.

The installation of external lighting on site may interrupt established flight lines and disturb foraging/commuting bats. This should be mitigated through a Wildlife Sensitive Lighting Plan which will benefit a range of nocturnal wildlife.

The removal of hedgerow to form a new access into the site has the potential to disturb breeding birds, if present. Works to remove vegetation on site should be carefully timed to avoid the nesting season and thorough ground checks carried out before works start.

There is one pond present within 500m of the proposed development which provides 'below average' breeding habitat for GCN. There are no records of GCN within 1km of the site and the proposals are unlikely to have an impact on this species. Precautionary working methods will be adopted which will eradicate any residual risk to amphibians and also reduce the risk of injury or harm to a range of small animals which may be encountered.

The site does not provide suitable habitat for hazel dormice and the proposals are unlikely to have any impact. The hedgerow to be removed showed no evidence of dormouse presence (gnawed hazelnuts) and this hedgerow is unsuitable for nesting dormice.

The proposals will have no impact on reptile population nor prime terrestrial habitat and no further survey work is required. Precautionary working measures on site will remove any residual risk to reptile species.

Ecological enhancement of the site can be achieved through native species hedgerow planting and a nest box scheme, as described in section 6.3.

8 REFERENCES

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FIGURE 1 LOCATION. 1:50,000

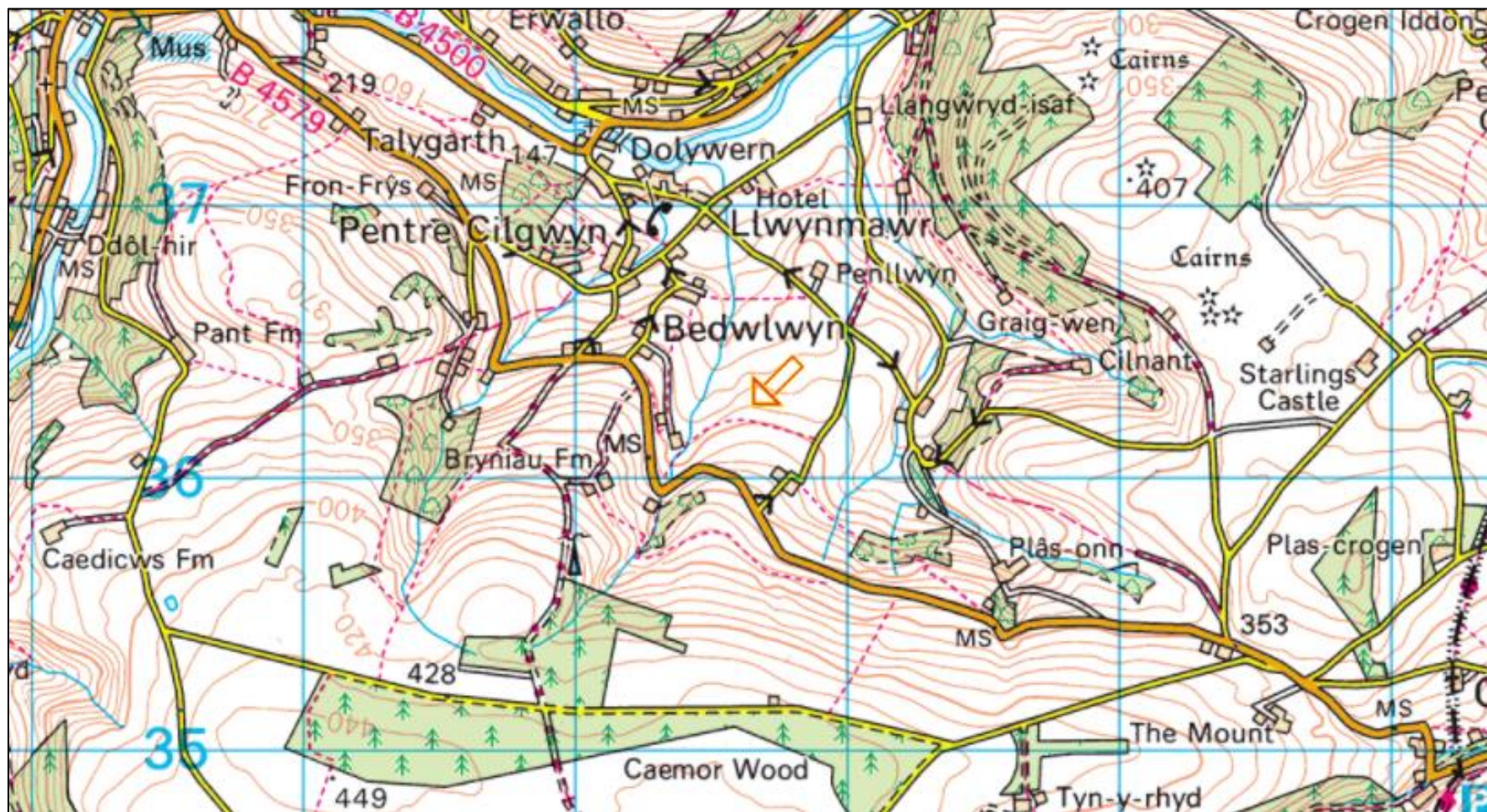
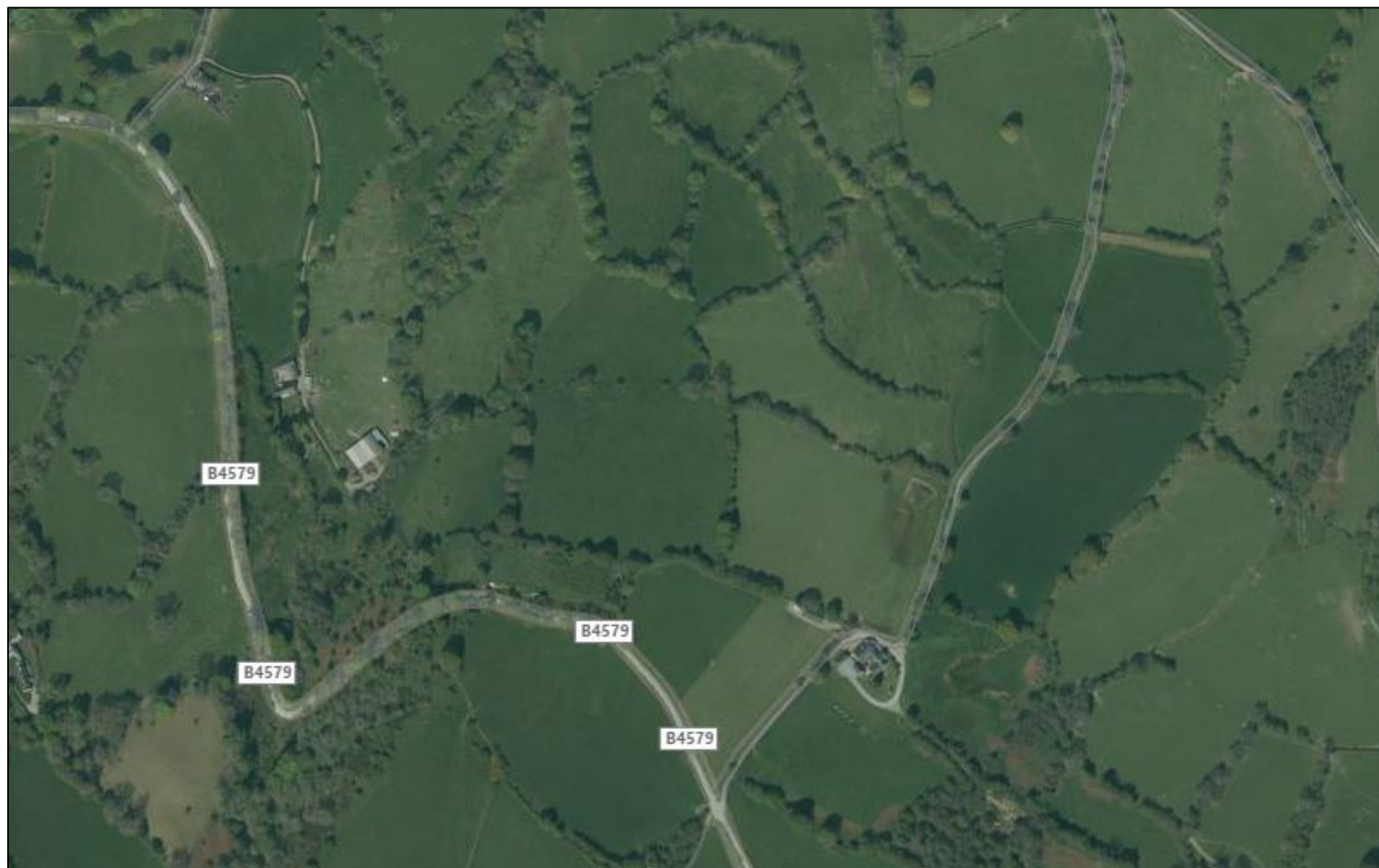


FIGURE 2 AERIAL PHOTOGRAPH



ARBOR VITAE
ECOLOGY • FORESTRY • LAND USE

[illegible]

FIGURE 4 PONDS WITHIN 500M

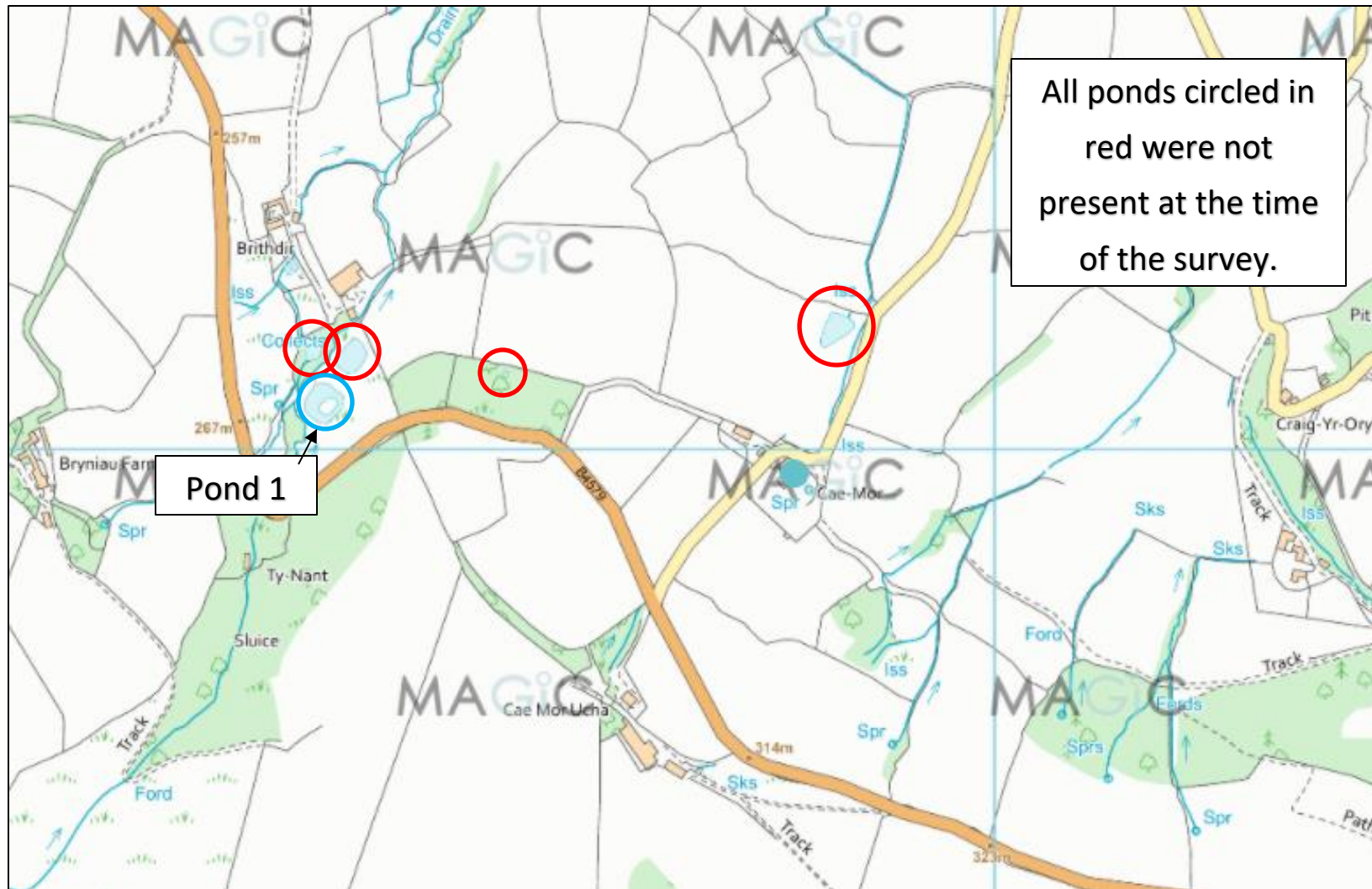
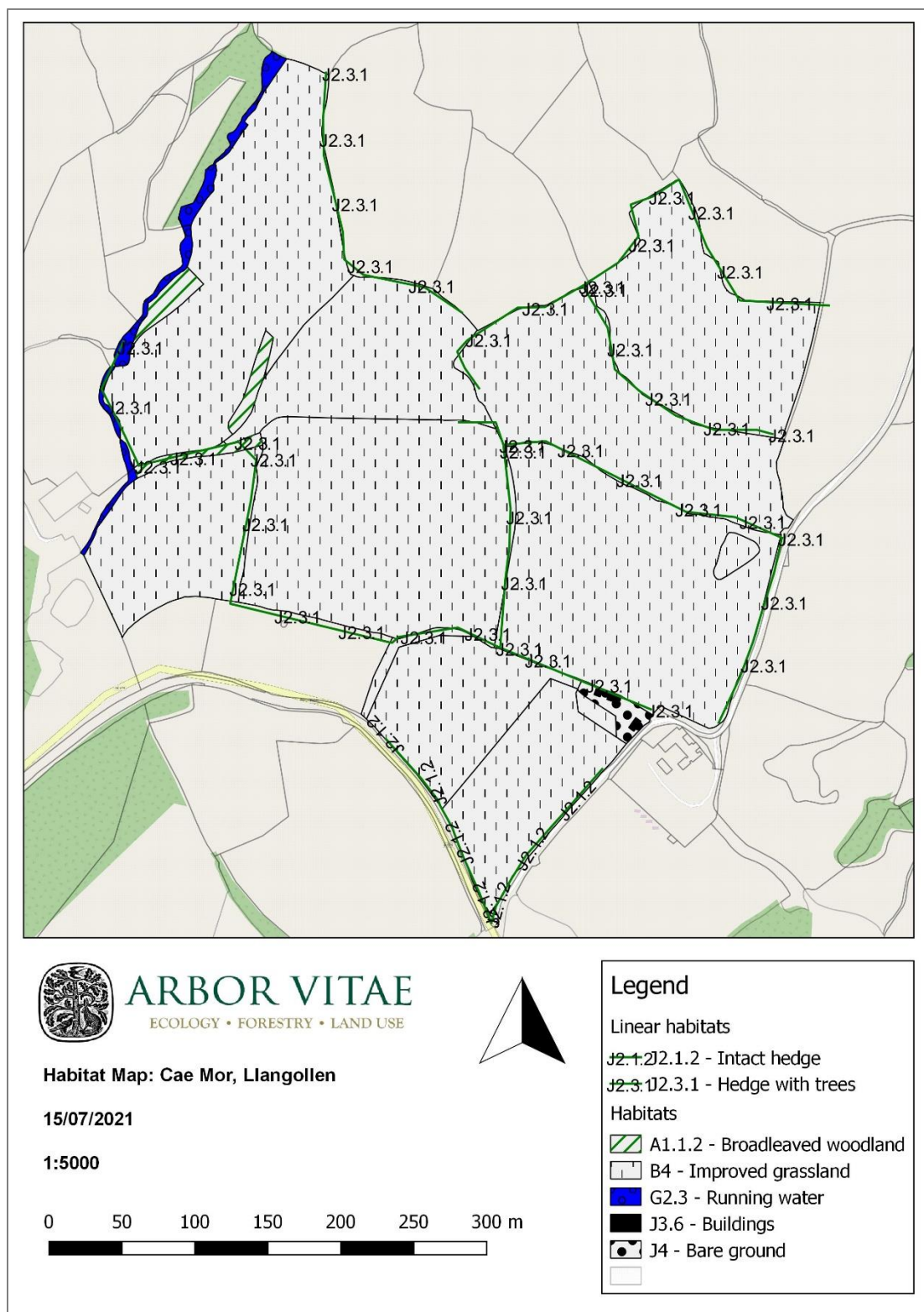


FIGURE 5 HABITAT MAP



APPENDIX 1 PHOTOGRAPHS

	The site looking from the north to the south.
	Length of hedgerow to be removed to create new access.
	Pond 1- the only pond within 500m of the site, assessed as 'below average' breeding habitat for GCN.



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE