ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE

PRELIMINARY ECOLOGICAL APPRAISAL

TOP HOUSE FARM, BUILDING 1

Arbor Vitae Environment Ltd, Lower Betton Farm, Cross Houses, Shrewsbury, Shropshire, SY5 6JD

Project name:	**Top House Farm, Hanmer, Wrexham, SY13 3EQ**
Grid Reference:	SJ45773911
Date:	01/10/2024
Prepared by:	Phillipa Stirling MSc ACIEEM
Reviewed by:	William Prestwood BSc Director
Requested by:	Roger Parry and Partners

A site visit was carried out on 16th July 2024 to update the findings of the report, and to document any changes to previous conditions on site. Findings can be found in red for ease of assessment.

Contents

1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the conversion of a redundant farm building at Top House Farm, Hanmer.

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.

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

Top House Farm is located in Arowry, Hanmer (Figure 1). There are a number of buildings on the farm, some redundant and some still in use. The land surrounding the farm is made up of agricultural fields, residential dwellings and several woodland blocks within the wider landscape (Figure 2).

The proposal will involve the conversion of a brick farm building into a residential dwelling.

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 MagicMap and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 26/05/2021 and 16/07/2024. 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:

- Bats
- Breeding birds
- Great Crested Newts

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

Bats

The objective of the survey was to find and record any signs of use by bats, for example:

- Droppings, sometimes in concentrations below roost sites,
- Feeding signs such as butterfly and moth wings,
- Staining of timber, brickwork around access points.

The general structure of the building was assessed for its potential to provide bats with roosting opportunities.

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).

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist. NRW GCN licence number: S089109-1. NRW bat licence number: S089403-1.

3.4 CONSTRAINTS

Two ponds at 300m and 400m distance from the site could not be accessed at the time of the survey. Aerial imagery indicates that the areas are fully vegetated and it appears unlikely that they provide open water suitable for GCN breeding.

4 SURVEY RESULTS

4.1 DESK STUDY

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

Name	Designation	Distance from site
Hanmer Mere	SSSI	0.4km
Mere Coppice	Restored Ancient Woodland	0.3km
Hanmer Hall Wood	Ancient Semi Natural Woodland Restored Ancient Woodland Site	0.4km
Wood at Home Farm	Restored Ancient Woodland Site	0.7km
Long Wood	Ancient Semi Natural Woodland Restored Ancient Woodland Site	0.8km
Mount Pleasant	Ancient Semi Natural Woodland Restored Ancient Woodland Site	0.8km
Merehead	Ancient Semi Natural Woodland Restored Ancient Woodland Site	0.9km
The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR. [1]		

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

Species	Distance	Protection
West European hedgehog	0.4km	S41 NERC
Kingfisher	0.6km	Wildlife and Countryside Act 1981.
Redwing	0.7km	Wildlife and Countryside Act 1981.
Fieldfare	0.8km	Wildlife and Countryside Act 1981.
The European hedgehog is a Species of Principal Importance under section 41 of the Natural Environment and Rural Communities Act 2006.		

[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.

4.2 HABITATS ON SITE

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

Building

A single storey brick building with a fiber cement roof. The roof structure is metal with some relatively new timber purlins in place. The ridge of the roof is open and there are several window and door apertures. The gutters and downpipes are UPVC and there is a small amount of ivy growth on the north east facing side of the building. The structure is 'single-skin' and there are no cavities or voids present.

Hardstanding

The land immediately surrounding the building and extensively on three sides is concrete.

The building on site is in the same condition as when it was surveyed in 2021.

4.3 ADJACENT HABITATS

Improved grassland

The land to the east and all fields surrounding the site are improved grassland agricultural fields. Species recorded include cock's foot, perennial ryegrass, dandelion, broad leaved dock, common nettle, creeping buttercup, white clover and yarrow. The field to the east has frequent bare patches throughout and is grazed.

Hedgerow

A remnant hedgerow marks the boundary of an adjacent plot which meets the building in question at the north east elevation. Species recorded include hawthorn and oak.

Adjacent habitats remain unchanged.

4.4 PROTECTED SPECIES

Bats

The building does not provide any potential roosting features for bat species and the materials within are unsuitable for use. There is no evidence within to suggest that bat species are present including feeding signs or droppings. Overall, the building has 'negligible' potential as a bat roost.

There is some connectivity through the surrounding landscape in the form of hedgerows and individual trees with the nearest woodland 300m to the north-west.

Breeding birds

There was no evidence of breeding birds within the building at the time of the survey. Access into the building via open apertures is possible for wild birds.

Great Crested Newt

Of the eight ponds mapped within 500m which were accessible, three exist on the ground. The other five were surveyed and found to be dry or not present.

Pond 1 is a shallow depression in the ground which is dominated by grassland and individual trees including oak and *Salix sp.* The pond sits approximately 85m from the building to be converted. The pond provides 'poor' suitability as a breeding site for GCN and during the preliminary survey no GCN eggs were found within the pond. Vegetation is limited to grasses which has vegetated the area.

Pond 5 is also dominated by grassland and the area dries annually, originating from run-off and drains. Mature oak trees edge the pond. The pond sits 130m to the north of the building, separated by a group of 12 houses with perimeter fences in place. The pond dries annually and holds only a small amount of water. No GCN eggs were found within the pond.

Pond 6 is an area of localised flooding within an improve grassland field which dries annually. The pond sits 280m to the north east of the site and dries annually. The pond sits within an improved grassland field which is grazed. No GCN eggs were found within the pond.

GCN HSI Calculator

	Pond Name	Pond 1	Pond 5	Pond 6
	Position	SJ45843903	SJ45783926	SJ45903939
SI No	SI Description			
1	Geographic location	0.5	0.5	0.5
2	Pond area	0.05	0.05	1
3	Pond permanence	0.1	0.1	0.1
4	Water quality	0.67	0.67	0.67
5	Shade	0.2	0.2	1
6	Water fowl effect	1	1	1
7	Fish presence	1	1	1
8	Pond Density	0.8	0.8	0.8
9	Terrestrial habitat	0.33	0.33	0.33
10	Macropyhyte cover	0.3	0.3	0.3
HSI Score		**0.35**	**0.35**	**0.55**
Pond suitability (see below)		*Poor*	*Poor*	*Below average*

Results of the protected species assessment are unchanged since the 2021 visit.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The conversion of the brick building will have no impact upon habitats of significant ecological value.

5.2 PROTECTED SPECIES ASSESSMENT

Bats

The building to be converted provides 'negligible' potential as a bat roost and the proposals will have no impact upon bat species.

There are some hedgerows and trees within the vicinity of the site which could be used for foraging or commuting by opportunistic bats. Any external lighting will need to be designed with nocturnal wildlife in mind.

Breeding birds

There is no evidence of breeding birds within the building to be converted and therefore the proposals are unlikely to have any impact upon wild breeding birds. Given that access into the building is available through open apertures, a precautionary approach will be taken.

Great crested newt

The conversion of the building will take place on an area of hardstanding with no disturbance to any terrestrial habitats which may be of use to GCN. The ponds present within 500m provide 'poor' and 'below average' suitability as a breeding site for GCN and no GCN eggs were found within the ponds during the survey. There are no records of GCN within 1km of the site accordingly to publicly available records.

The conversion of the brick building into a residential property will have no impact upon GCN and no further survey work is needed.

The impact assessment of the proposals remains unchanged, with no additional constraints identified.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The proposals will have no impact upon habitats of ecological value and mitigation will not be required.

6.2 PROTECTED SPECIES MITIGATION

Bats

Any artificial lighting will be designed with nocturnal wildlife in mind. The following measures will be incorporated into lighting plans for the site:

- 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.
- Security lighting will be set on motion sensors with short timers (<1 minute) and should be LED lighting.
- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires should be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

- Where lighting is needed to illuminate paths/walkways, low level LED bollard lighting, set on motion sensors should be used to avoid light pollution about 1m from the ground.

Breeding birds

A thorough ground and internal inspection should 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.

Great crested newt

The proposals will take place on an area of hardstanding with no disturbance or destruction of any suitable terrestrial habitat for GCN. The proposals will have no impact upon this species and mitigation is not required.

6.3 ECOLOGICAL ENHANCEMENT

In order to provide opportunities for protected species, we recommend that a nest box scheme is adopted as follows:

- One Woodcrete general purpose bat box, suitable for crevice-dwelling species should be installed into a mature tree within at the periphery of the site. No lighting should be installed in the vicinity of the boxes. The box should be at least 3m from the ground and face south or south west.
- One Woodcrete cavity nesting bird box with 28mm access hole should be positioned within a mature tree on the boundary of the site. The access should face away from the prevailing wind.

Mitigation and enhancement summaries remain valid.

7 SUMMARY

Planning permission will be sought for the conversion of a redundant farm building at Top House Farm, Hanmer. 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.

The conversion of the brick building will have no impact upon habitats of significant ecological value.

The building to be converted provides 'negligible' potential as a bat roost and the proposals will have no impact upon bat species. There are some hedgerows and trees within the vicinity of the site which could be used for foraging or commuting by opportunistic bats. Any external lighting will need to be designed with nocturnal wildlife in mind.

There is no evidence of breeding birds within the building to be converted and therefore the proposals are unlikely to have any impact upon wild breeding birds.

The conversion of the building will take place on an area of hardstanding with no disturbance to any terrestrial habitats which may be of use to GCN. The ponds present within 500m provide 'poor' and 'below average' suitability as a breeding site for GCN and no GCN eggs were found within the ponds during the survey. There are no records of GCN within 1km of the site accordingly to publicly available records.

The conversion of the brick building into a residential property will have no impact upon GCN and no further survey work is needed.

8 REFERENCES

ARG UK (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom

Bat Conservation Trust (2018) Bats and artificial lighting in the UK. *Bats and the Built Environment series,* Guidance Note 08/18. Institution of Lighting Professionals.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

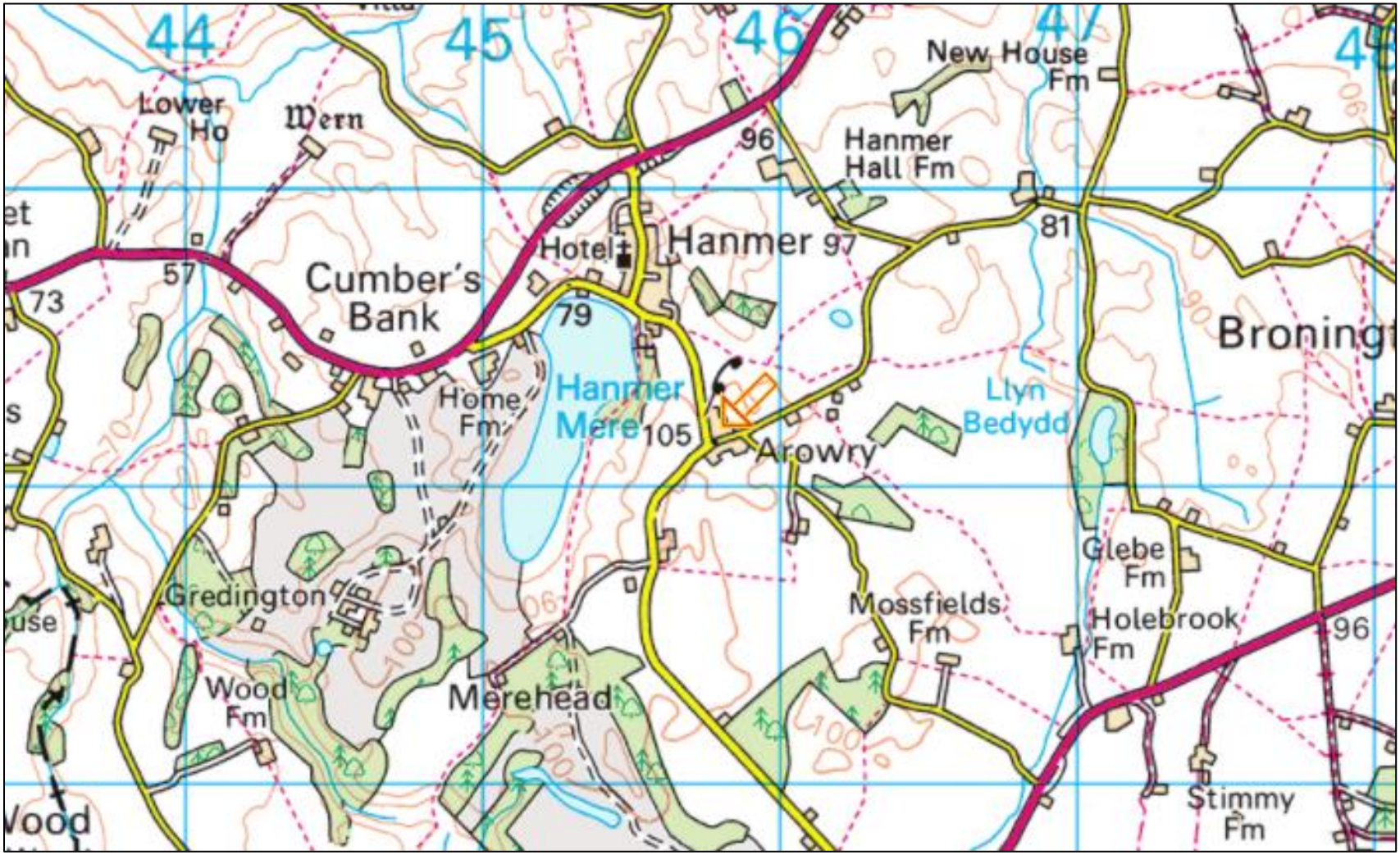
Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust.

JNCC (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7.

Mitchell-Jones, T. (2004) Bat mitigation guidelines. External Relations Team, English Nature.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10(4), 143-155.

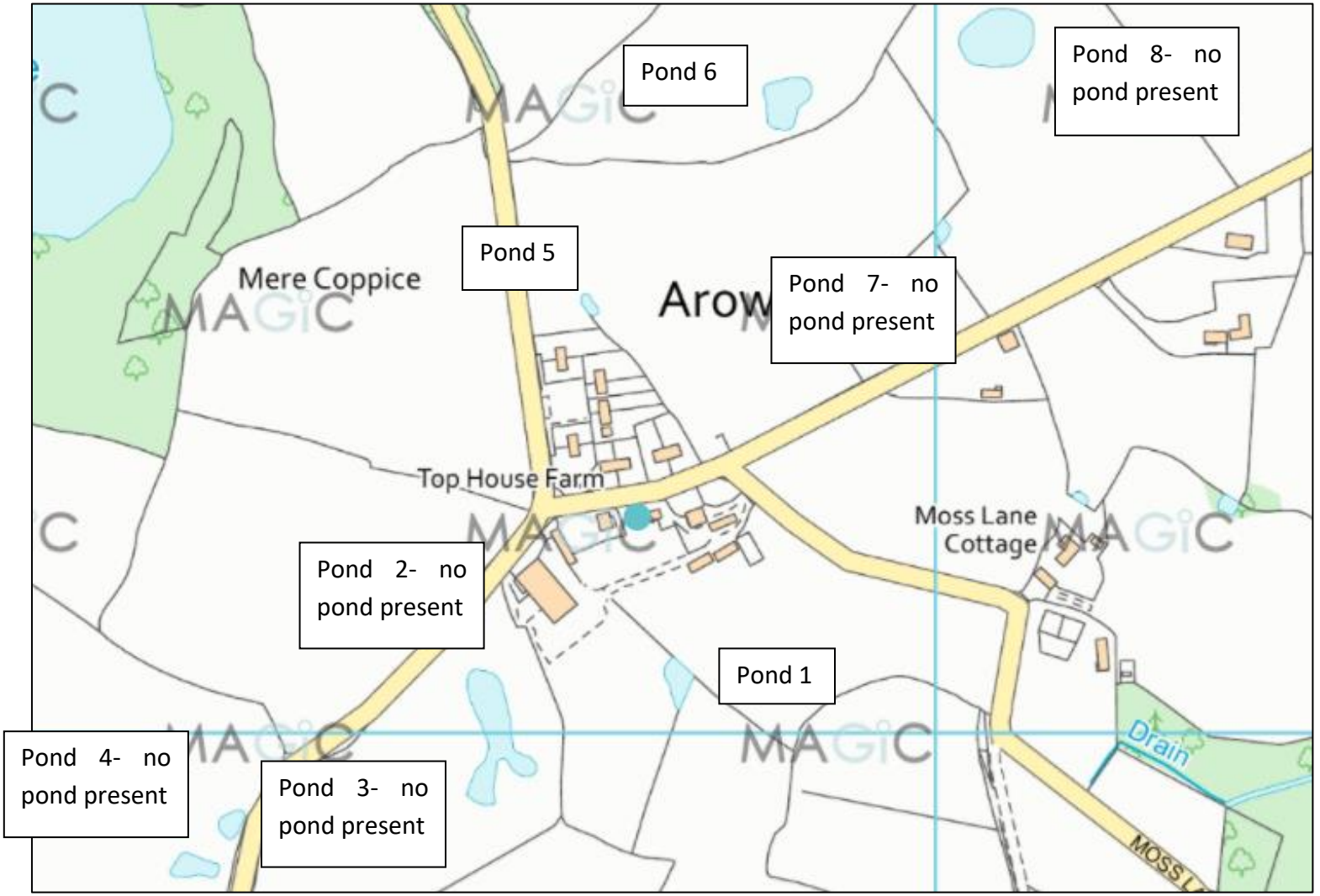
FIGURE 1 LOCATION. 1:50,000



ARBOR VITAE
ECOLOGY • FORESTRY • LAND USE

FIGURE 2 AERIAL PHOTOGRAPH

FIGURE 3 PONDS WITHIN 500M



ARBOR VITAE
ECOLOGY • FORESTRY • LAND USE

APPENDIX 1 PHOTOGRAPHS

2021	2024
	
Building to be converted.	
	
Internal conditions of the building.	
	
Sky lights in roof of building.	

Pond 1

Pond 5

Pond 6