



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL ASSESSMENT

MAELOR FOREST NURSERIES



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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Arbor Vitae were commissioned to carry out a Phase One Habitat Survey, including a Protected Species survey, of an area of land at Fields Farm, the base of Maelor Nurseries. The nursery produces forest trees and requires additional sorting, handling and packing facilities for which planning consent is required.

Such operations have the potential to disturb protected species, if present, and therefore Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal.

This report presents the results of a field survey carried out on 23 July 2020.

1.2 PROPOSED WORKS

The proposals include the construction of new buildings and a reservoir on land currently in use for tree production. The site adjoins the existing buildings. The details of the proposed buildings, including locations, are not yet available and therefore this report is designed to evaluate the entire area within which any buildings, and the reservoir, will be located.

1.3 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.

The nature of the immediate and surrounding habitat indicated that the following species could theoretically be affected by physical disturbance of habitats.

Protected or key species potentially affected:

- Badgers
- Bats

- Breeding birds
- Great crested newts

This report sets out the results of the field surveys and desk study, along with an assessment of potential ecological impacts of the construction of the new building.

1.4 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

The proposed construction site will occupy areas of fields which, currently, are intensively managed as seed beds and nursery beds for young forest trees. These fields are regularly cultivated and are maintained to a high level of cleanliness in terms of weed growth.

The site as a whole is flat and low lying within the basin which includes the Whixall Moss complex, the edge of which lie 190 metres to the east of the study site. The original farm hedgerow network still sub-divides the tree production areas.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was carried out to gain background information regarding 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 23rd July 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

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

Badger

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

- Setts
- tracks and footprints
- latrines
- snuffle holes

Bats

Potential roosting features on site were noted and the site was assessed in terms of nearby connecting habitat and other features which could be of value to bats.

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

Map and ground searches were made for any areas of open water within 250 metres of the construction site. These were assessed for their suitability as breeding sites for great crested newts using the Habitat Suitability Index.

3.3 PERSONNEL

The survey was carried out by Will Prestwood BSc, an experienced ecologist.

3.4 CONSTRAINTS

There were no constraints on the survey being carried out according to accepted guidelines and standards.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that within 2km of the site there were three nationally designated sites:

The nearest site of ecological importance is:

Fenns, Whixall, Bettisfield, Wem and Cadney Moss SSSI. Much of this is also a National Nature Reserve and part of the wider Ramsar designation which covers Shropshire Meres and Mosses. This site is within 190 metres of the edge of the study site.

The search included Ramsar, SSSI, SAC, SPA, LWS and LNR. ¹

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

- *Water vole*
- *Great crested newt*
- *A large range of amber and red-listed birds species, largely associated with Fenn's Moss*

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010). The survey included four fields (see Figure 2) which may be affected by the proposals.

Arable land

All adjacent land is in intensive use as seed beds or nursery beds. This habitat has very low ecological value.

Hedgerows (see Figure 2 for location)

Mature, native species hedgerows surround each of the fields. These hedgerows vary markedly in condition and diversity, as described below:

Hedge 1	Mixed species hedge with blackthorn, holly, hazel, oak, crabapple and beech.	3 mature oak 1 mature ash 8 semi-mature ash
Hedge 2	Mixed but intermittent and gappy hedge with birch, goat willow, poplar, beech, alder and hawthorn	8 mature oak 2 mature alder
Hedge 3	Tall, unmanaged mixed hedge/ tree line with associated deep ditch. Mainly grey willow with oak and ash	
Hedge 4	Mixed hedge, gappy Includes hazel, oak, beech, blackthorn, hawthorn	2 mature oak

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

Hedge 5	Tall, dense, species-rich mixed hedge. Species include blackthorn, hazel, hawthorn, holly, elder, grey willow, alder, rowan and silver birch.	1 mature oak
Hedge 6	As above	1 mature oak
Hedge 7	Predominantly hawthorn hedge, gappy, occasional field maple, elder and beech.	
Hedge 8	Species-poor hedge with hawthorn, occasional dog rose, oak and elder	
Hedge 9	Mixed hedge with hawthorn, hazel, holly, beech	3 mature oak
Hedge 10	Mixed hedge with hawthorn, hazel, blackthorn	4 mature oak
Hedge 11	Conifer hedge	

The ground flora of all hedges is poor due to intensive management in adjacent fields.

Many of the hedges provide valuable bird nesting habitat and a network of habitat along which other species can migrate.

Mature trees

At least 33 mature trees exist within and on the edge of the site, including oak, ash and alder.

4.3 ADJACENT HABITATS

Standing water

Three ponds are situated within 250 metres of the proposed building. Pond 1 is an artificial reservoir which is in constant use for irrigation of nursery beds.

Pond 2 is also an artificial pond constructed to impound run-off and drainage waters. This has the appearance of a more mature pond with aquatic vegetation and marginal vegetation. Security fencing prevented close inspection.

Pond 3 lies within a small group of trees on the edge of the site. This is entirely shaded by trees, extremely anaerobic and devoid of aquatic vegetation.

4.4 PROTECTED AND PRIORITY SPECIES

Badgers

There were no field signs to suggest that badgers use the area and there are no historic records of badger within 1km of the site.

Bats

The mature hedgerows within and around the fringes of the site offer commuting and foraging opportunities for bat species in the landscape. A number of mature trees appear to offer features which bats could exploit as roosting features including broken branch stubs and loose bark.

Breeding birds

The site itself is highly likely to be used by breeding birds. Few species were recorded on the survey but the dense hedgerows do provide good potential nesting habitat. Species recorded included dunnock, wren, blackbird, yellowhammer and chaffinch.

Great crested newts

A Habitat Suitability Index was calculated to assess the potential of Ponds 2 and 3 to support GCN. The reservoir was not assessed.

The HSI score for Pond 2 was 0.78 indicating that the pond holds below 'good' potential for GCN.

The HSI score for Pond 3 was 0.53 indicating that the pond holds below 'below average' potential for GCN.

5 EVALUATION OF RESULTS AND POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

Arable land

The intensively managed nursery area has little intrinsic ecological interest and the loss of small areas for building construction will have negligible ecological impact.

Hedgerows

Hedgerows are considered to be UK Biodiversity Action Plan (BAP) priority habitat. The construction of the unit may result in some hedgerow loss. This will require mitigation and will involve the replanting of an equivalent meterage of species-rich hedge.

Mature trees

The mature trees within and around the site are important landscape features and also provide potential nest sites for birds and roost sites for bats. Several provide features which might be exploited by bats including minor crevices, loose bark and broken branch stubs.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

The survey revealed no signs of use by badger and there are no historic records of badger at the site. No impact on this species is predicted.

Bats

Any increase in external illumination may have an impact on nocturnal wildlife including bats. These may use the hedgerow network for foraging and the value of these habitats may be reduced if external lighting increases.

Breeding birds

The loss of hedgerow will deprive certain species of nest sites, including two Amber listed species, dunnock and yellowhammer. Mitigation for this will be required. The timing of works will be critical in ensuring that birds are not disturbed when nesting.

Great crested newts

The HSI score of 0.78 indicates that Pond 2 has 'good' potential to support GCN.

The potential impact on GCN will depend on the exact location of the new facilities. The cultivated areas provide sub-optimal habitat for GCN, although hedgerows may harbour GCN and provide foraging areas and hibernation sites.

Once the design of the site is complete, an assessment of potential impact on GCN will be necessary. Further surveys may be necessary or, in the case of low risk, Reasonable Avoidance Measures for this species may be adequate.

5.3 IMPACT ON NEARBY SITES OF ECOLOGICAL IMPORTANCE

Fenn's, Whixall and Bettisfield Moss lies less than 200 metres to the east of the study site. The construction of buildings is unlikely to have any impact of this site as long as there is no impact on ground water levels or quality of surface waters flowing towards the Moss. The creation of a reservoir will involve routing all drainage water from the site into this reservoir and it is presumed that this will be designed to hold all excess water from the site, thus preventing runoff in the direction of the SSSI. Further details on this are required in order to make an assessment.

6 MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The loss of any hedgerows will require the planting of new species-rich native hedgerows of the equivalent length.

6.2 PROTECTED SPECIES MITIGATION

Bats

Hedgerows on the fringes of the site will be encouraged to grow in height in order to improve visual screening of the site. This will benefit bats in providing richer foraging routes.

The opportunity should also be taken to improve roosting opportunities for bats by erecting bat boxes in mature oak trees on the fringes of the site.

Breeding birds

Hedgerow management will again benefit a range of bird species, notably winter visitors benefitting from an increased source of food.

The opportunity should also be taken to improve nesting opportunities for birds by erecting bird nest boxes in mature oak.

Great crested newts

As a basic precaution, RAMS should be adopted to ensure that no GCN are accidentally harmed. RAMS include:

- A toolbox talk to contractors concerning the procedures to follow
- Search by an ecologist of any possible hibernation or resting sites for GCN
- Covering of any trenches or excavations at night
- Storage of building materials on pallets so as to avoid creating GCN refuges.

The potential impact on this species will be assessed once a full design of the site is available. Further survey work of GCN may be needed.

7 SUMMARY AND CONCLUSION

A planning application will be submitted to construct new handling sheds and a reservoir at Maelor Forest Nurseries. Detailed plans are not yet available but an overall preliminary ecological assessment has been carried out of that part of the site which will be used for the new facilities.

The site surveyed includes four adjoining parcels of land. These were originally agricultural fields and are now used for the intensive production of forest trees. Cultivated seed beds and nursery beds are the overwhelming majority land-use. The resulting 'arable' habitat is of low ecological interest.

The site is divided by hedgerows, some in good condition with a range of mixed, native species and some in poorer condition with large gaps. Mature trees lie within the hedgerows within the site and also in peripheral hedges.

Hedgerows are a BAP priority habitat and the possible loss of certain lengths of hedge will require mitigation through the planting of new hedgerows. The mature trees are an important landscape feature and provide a valuable asset for birds and bats.

The proximity of the important wetland SSSI, Fenn's, Whixall and Bettisfield Moss 190 metres to the east of the site, needs to be considered when the design of drainage and reservoir construction are being formulated.

As assessment was made of the potential of the site to support protected species.

There is no evidence of badgers using the site. Bats may use hedgerows and tree lines along which to forage and some of the older mature trees provide potential roost sites. Breeding bird numbers are probably low although two Amber listed species were recorded: yellowhammer and dunnock. The loss of hedgerows would impact birds and replacement hedgerows and other mitigation such as nest boxes would be required.

Three ponds were surveyed on or near the site. Of these, Pond 2 shows 'average' suitability to support great crested newts. Until the final design of the new facilities is determined, an assessment of the likely risk to this species is not possible. However, given the sub-optimal suitability of most of the cultivated nursery area for GCN, it is likely that works will be able to proceed using Reasonable Avoidance Measures.

Mitigation for protected species will involve avoidance of external illumination or design of a wildlife-friendly lighting scheme. Further biodiversity gain will be achieved through erection of bat and bird boxes.

Given the low ecological value of much of the nursery, coupled with appropriate mitigation and biodiversity enhancements, it is likely that the overall ecological impact of the proposals will be minor.

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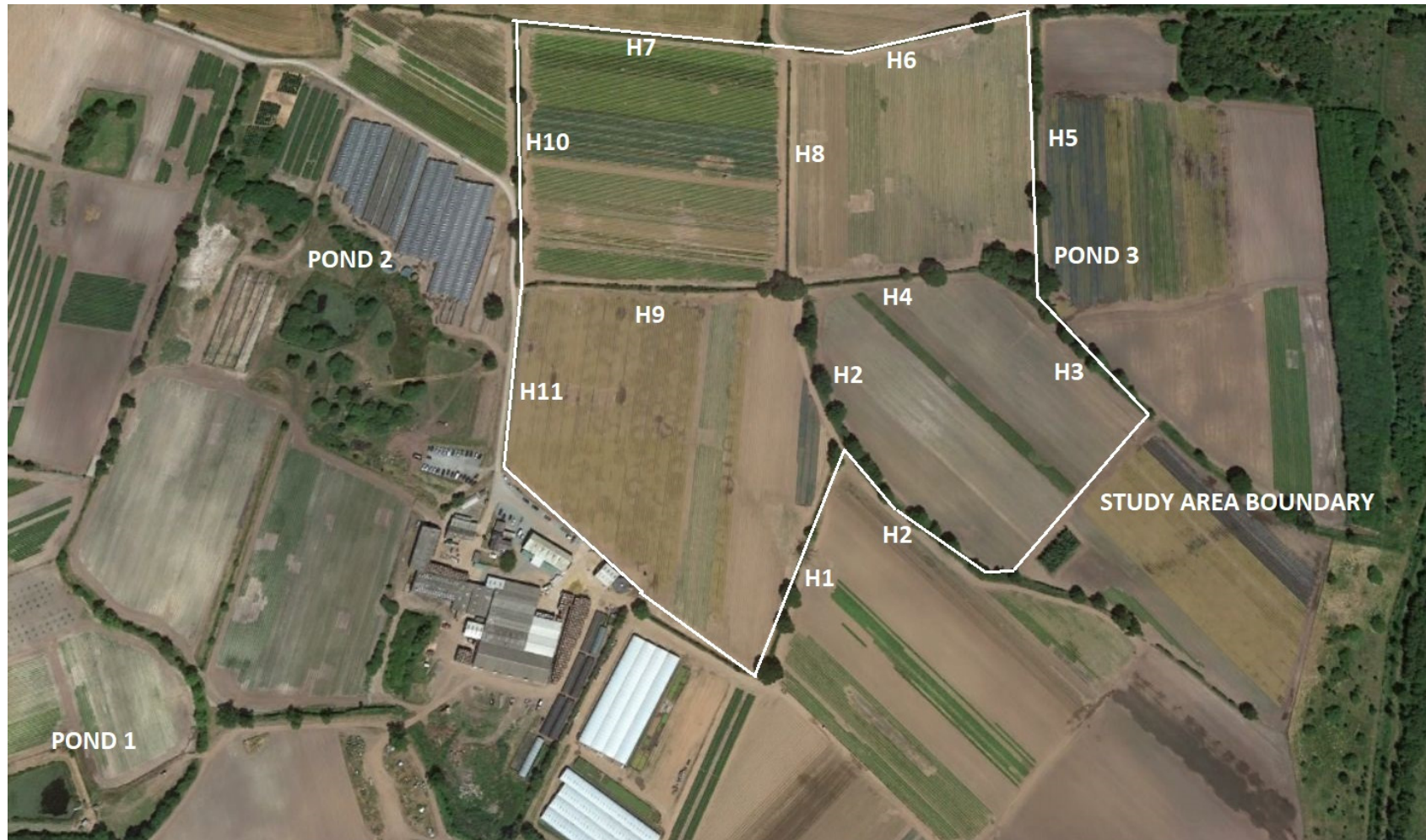
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FIGURE 1 LOCATION. 1:50,000






FIGURE 2 AERIAL PHOTOGRAPH



APPENDIX 1 PHOTOGRAPHS

	<p>GENERAL VIEW OVER NURSERY</p>
	<p>HEDGEROW TREES IN H1</p>
	<p>TYPICAL HEDGEROW IN NURSERY AREA, FENCED AGAINST RABBITS</p>



	<p>POND 3</p>
	<p>HEDGEROW 3, LINE OF MATURE TREES</p>
	<p>HEDGEROW 5. SPECIES-RICH HEDGE ON BOUNDARY</p>

