



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



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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.

The construction of the new building, along with the erection of covered tunnels, has 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. A report produced in August 2020 has been revised to reflect changes to the proposals.

1.2 PROPOSED WORKS

The proposals include the construction of a new building as a handling and sorting facility for trees. In addition, a field currently occupied by nursery beds will be covered with polytunnels. The site adjoins the existing buildings and occupies an area currently in use as a nursery bed for young trees.

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 an area of field which, currently, is intensively managed as nursery beds for young forest trees. The field is regularly cultivated and is 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 lies 700 metres to the south 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:

Fenn's, 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 bird 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 one field (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)

Three hedgerows will be impacted by the proposals:

Hedge 1	Mixed hedge with hawthorn, hazel, holly, beech (200 m to be removed)	3 mature oak
Hedge 2	Species-poor hedge with hawthorn, occasional dog rose, oak and elder (100 m to be removed)	
Hedge 3	Mixed but intermittent and gappy hedge with birch, goat willow, poplar, beech, alder and hawthorn (35 m to be removed)	8 mature oak 2 mature alder

The ground flora of all hedges on the site and on adjacent land is poor due to intensive management in adjacent fields.

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

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

Mature trees

Three mature oak trees exist in Hedge 1 – these will be removed. A further 9 trees will be removed in Hedge 4 including 2 oak, 2 alder, 1 silver birch and 2 goat willow.

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. None of the trees impacted by the scheme include significant features which could be exploited by bats for roosting purposes although a number of other mature trees on the wider site occupied by the nursery do include features such as broken branch stubs and loose bark which may provide roosting opportunities.

Breeding birds

The cultivated part of the site itself is highly unlikely to be used by breeding birds. Few species were recorded on the survey although the dense hedgerows within the nursery as a whole do provide good potential nesting habitat. Species recorded included dunnoek, 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 a small area for building construction will have negligible ecological impact. The area covered by new tunnels is already under intensive production and no increased ecological impact will result.

Hedgerows

Hedgerows are considered to be UK Biodiversity Action Plan (BAP) priority habitat. The construction of the unit will result in the loss of approximately 330 metres of hedgerow (Hedge 1: 200 metres, Hedge 2: 100 metres, Hedge 3: 35 metres). These hedgerows are in poor condition in parts and have very poor ground flora. Nevertheless, they offer some bird nesting habitat and act as corridors for invertebrates, small mammals and other wildlife. Their loss requires that compensatory planting of native hedgerows takes place on the site.

Mature trees

The mature trees on the edge of the site are important landscape features, they provide potential nest sites for birds and possible roost sites for bats. The loss of mature trees inevitably reduces available habitat for certain species but, in the longer term, can be mitigated by the planting of replacement trees. There are already a wide range of young trees on the site which have been planted in

hedgerows and these will eventually form suitable replacements for trees being lost as a result of this scheme.

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

Although no significant roost features for bats were recorded in the trees to be felled, a pre-felling survey for bats is required in order to ensure that no roost sites are affected.

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 timing of works will be critical in ensuring that birds using nearby hedgerows 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 cultivated area to be occupied by the building and tunnel structures provides sub-optimal habitat for GCN, although hedgerows may harbour GCN and provide foraging areas and hibernation sites.

If GCN are shown to be present in Pond 2, there is a small risk to GCN as a result of hedgerow removal, given that these areas may be used as hibernation sites.

5.3 IMPACT ON NEARBY SITES OF ECOLOGICAL IMPORTANCE

Fenn's, Whixall and Bettisfield Moss lies 700 metres to south the east of the study site. The construction of the building 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.

6 MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

There will be no loss of any habitat of ecological interest and no mitigation will be required.

6.2 PROTECTED SPECIES MITIGATION

Bats

The loss of mature trees will be compensated in the long term by the planting of replacement trees elsewhere on the site. In the short term, any potential loss of roost sites should be mitigated for by the erection of bat boxes in retained trees. These should include both winter hibernation boxes and summer roosting boxes.

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.

Breeding birds

Hedgerow removal must be carried out outside the nesting season in order to avoid disturbing breeding birds.

Hedgerow management elsewhere on the site will 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

It is recommended that eDNA analysis is carried out on sample of water from Pond 2 to determine presence or absence of GCN. If negative, no further consideration needs to be given to this species. If the eDNA result is positive, it will be necessary to produce a GCN Conservation Plan and adopt appropriate mitigation measures.

7 SUMMARY AND CONCLUSION

A planning application will be submitted to construct a new plant handling shed and polytunnels at Maelor Forest Nurseries. A Preliminary Ecological Assessment has been carried out of that part of the site which will be used for the new facilities.

The building and tunnels will occupy an area of intensively managed, cultivated land used for tree production and, as such, is of minimal ecological interest. However, the erection of tunnels will result in the removal of approximately 330 metres of hedgerow and 12 mature trees

The hedgerows on the site are mainly poor in structure and with very impoverished ground flora due to intensive management of adjacent land. However, hedgerows provide a valuable foraging area for bats and breeding site for nesting birds. The loss of hedgerow will reduce opportunities for wildlife and will require mitigation through replanting a similar length elsewhere on the site.

The proximity of the important wetland SSSI, Fenn's, Whixall and Bettisfield Moss 700 metres to the east of the site is unlikely to be affected by the proposals.

An 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 although no roosting features were recorded in mature trees which are identified for felling. Breeding bird numbers are probably low although two Amber listed species were recorded: yellowhammer and dunnock. The loss of hedgerows will reduce breeding sites and will require mitigation through timing of works, planting of replacement habitat and erection of nest boxes.

Three ponds were surveyed on or near the site. Of these, Pond 2 shows 'good' suitability to support great crested newts. Although much of the proposed site for the buildings occupies land which is sub-optimal habitat for GCN, the loss of hedgerows could harm GCN and remove hibernation sites. Presence or absence of GCN will be determined by carrying out eDNA analysis of water samples and, if positive, a GCN Conservation Management Plan will be produced.

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.

REFERENCES

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

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FIGURE 1 LOCATION. 1:50,000



FIGURE 2 AERIAL PHOTOGRAPH

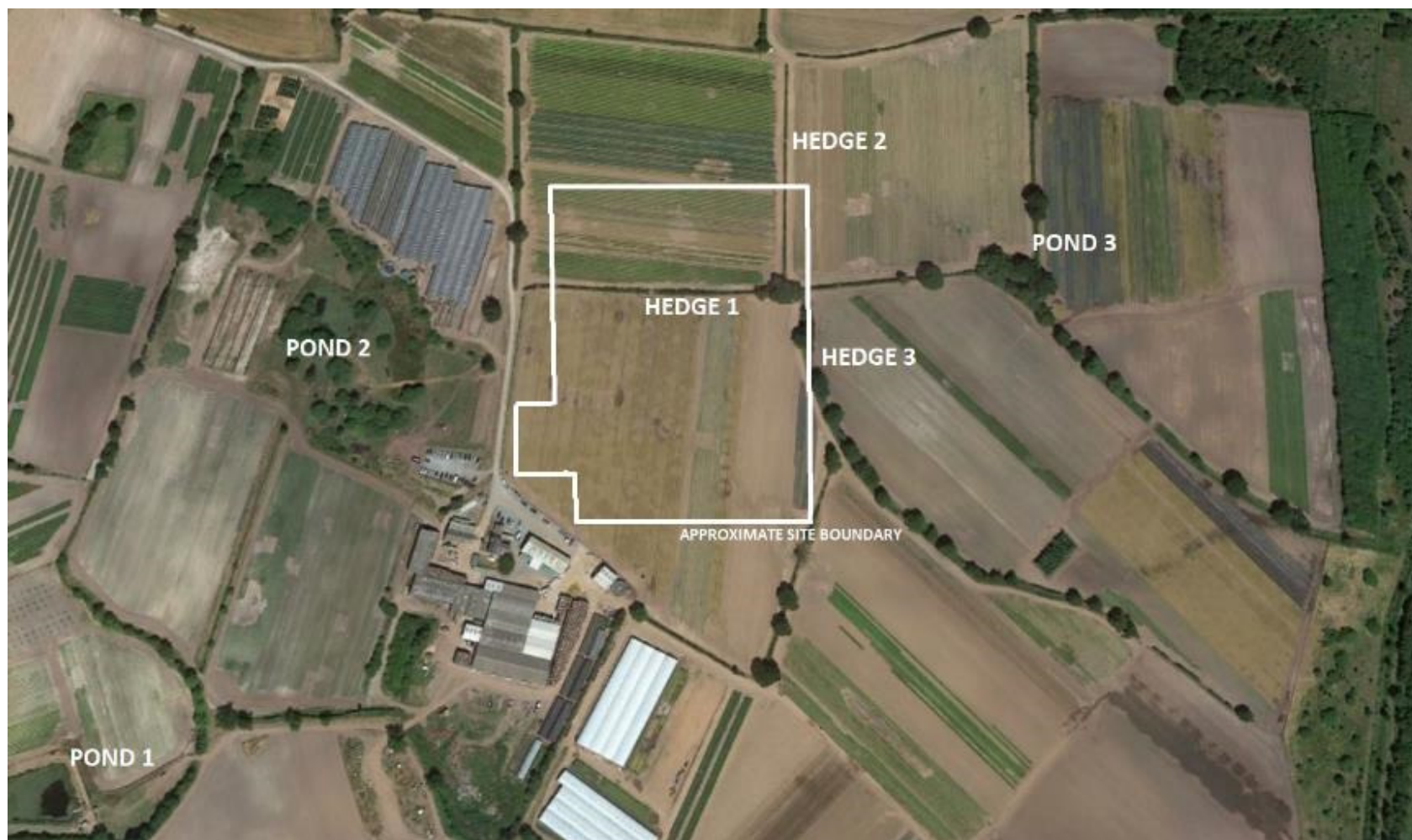
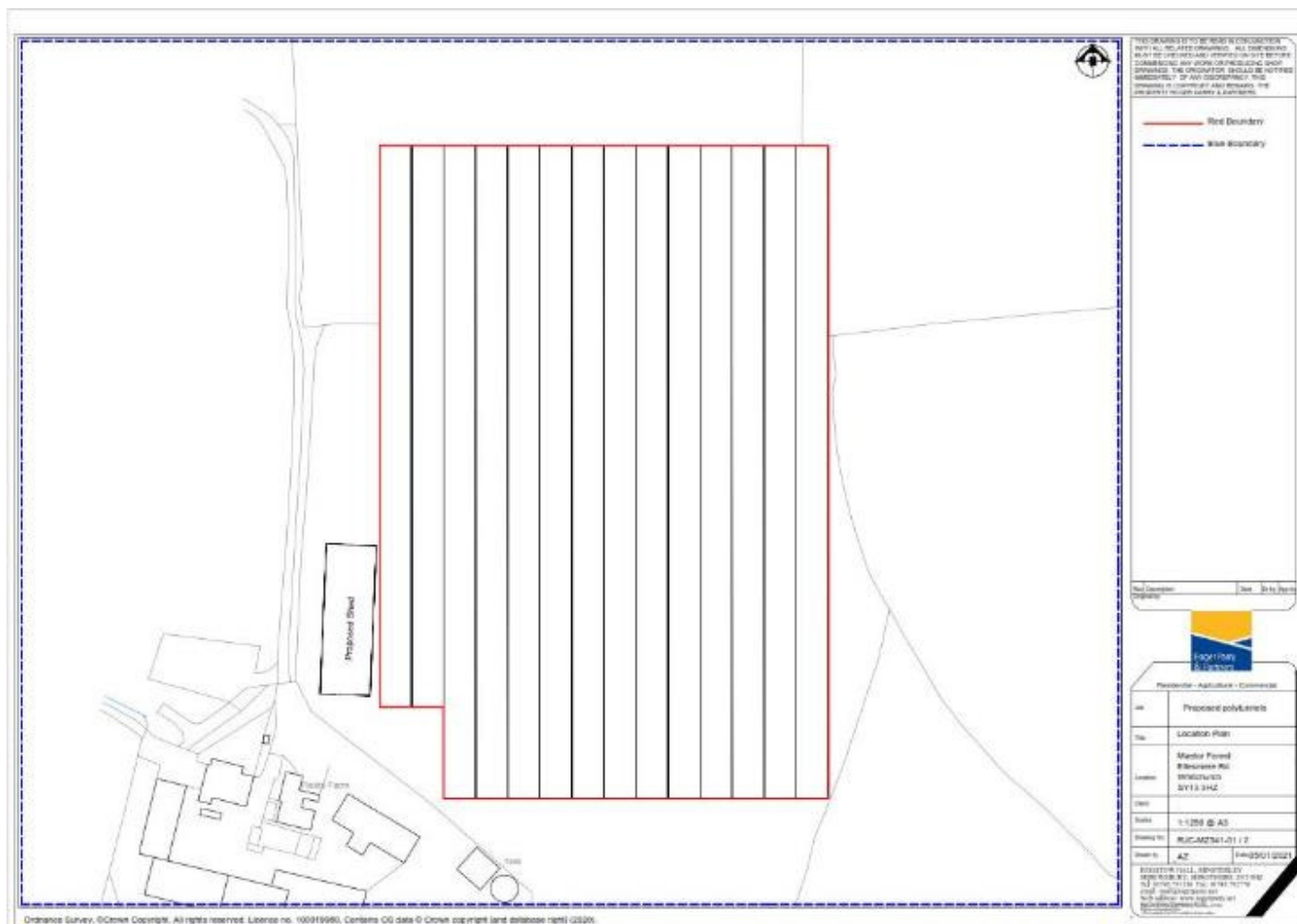


FIGURE 3 SITE PLAN



APPENDIX 1 PHOTOGRAPHS

	GENERAL NURSERY VIEW OVER
	POND 2
	POND 3

