Maelor Forest Nurseries Preliminary Ecological Appraisal

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20th August 2026



Quality Assurance			
Date	**Name**	**Version**	**Comments**
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01/10/2026	Jack Dunn	2	Final Draft + Appendices
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TABLE OF CONTENTS

1. INTRODUCTION 2
2. METHODOLOGY 5
3. SITE DESCRIPTION 7
4. DESK STUDY 9
5. FIELD SURVEY RESULTS 21
6. CONCLUSIONS AND RECOMMENDATIONS 32
7. POST-WORK HABITAT IMPROVEMENT PLANS 37
8. REFERENCES 38
9. APPENDICES 39

1. INTRODUCTION

Background

1.1. Jack Dunn, Principal Ecologist within Tilhill Forestry, was commissioned by Andrew Henry, Nursery Director of Maelor Forest Nurseries, to undertake a preliminary ecological appraisal (PEA) at Maelor Forest Nurseries, Clwyd, Wales located south-west of Whitchurch, Shropshire. The aim of the survey is to establish the current ecological landscape of the land within the red line boundary, identifying habitats and potential presence of protected species, to inform a potential reservoir construction project (see Figure 1).



Figure 1 - Site Red Line Boundary and approximate reservoir footprint (blue line)

Aims and Objectives

1.2. The key objectives of the PEA is to:

- Identify the major habitats present on site;
- Identify the potential for the presence / absence of legally protected and / or notable species;
- Identify any potential ecological constraints on site;
- Identify any mitigation measures likely to be required; and
- Identify the need for further ecological surveys, where required.

1.3. A PEA does not constitute a full survey for protected species or habitats but is used to determine the potential of a site to support protected and / or notable species and habitats and determine where further ecological surveys are warranted.

Definition of Terms

1.4. For the purpose of this report, the term 'site' is used to describe the area of land located within the red line boundary as shown on the UKHab Habitat and Ecology Plan.

1.5. Plant names follow 'New Flora of the British Isles' (Stace, 2019), whilst faunal species follow binomial nomenclature (Linnaeus, 1753). The common and scientific names of all species identified are provided when first mentioned in the text, but only the common name is stated thereafter.

UKHABS – Distinctiveness Criteria

1.6. Every habitat under UKHAB has a designated 'distinctiveness' defined in the Biodiversity Metric, which refers to the habitat's intrinsic biodiversity value, taking into account species richness, habitat rarity, extent of protection by designations and the degree to which that habitat supports species rarely found in other habitats. Distinctiveness is defined into the following categories:

Very High (8)

1.7. Priority Habitats as defined in Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act that are highly threatened, internationally scarce and require conservation action, for example blanket bog.

1.8. Small amount of remaining habitat with a high proportion unprotected by designation.

1.9. Critically Endangered European Red List habitats.

High (6)

1.10. Priority Habitats as defined in Section 41 of the NERC Act requiring conservation action, for example lowland fens.

1.11. Remaining Priority Habitats not in the very high distinctiveness band and other Near Threatened and Vulnerable Red List habitats.

Medium (4)

1.12. Semi-natural habitats not classed as a Priority Habitat but with significant wildlife benefit, for example mixed scrub.

1.13. Arable field margins (Priority Habitat only).

Low (2)

1.14. Habitat of limited biodiversity value for example temporary grass and clover ley.

1.15. Agricultural and urban land of lower biodiversity value.

Very Low (0)

1.16. Little or no biodiversity value for example hard standing or sealed surface.

Legislation

1.17. For a full list of relevant legislation, please refer to Appendix 2.

2. METHODOLOGY

Desk Study

2.1. The desktop study involved conducting database searches for statutory and non-statutory designated sites and features of interest within and surrounding the proposed application site up to 2km. This included checks for any records for legally protected and/or notable species centred on grid reference SJ47493785. The baseline conditions are based on a review of existing available information, including:

- Natural Resources Wales (NRW) website - to identify statutory designated sites, priority habitats;
- UK Soil Observatory mapping – to understand the underlying geology of the site and identify peat depth;
- Ordnance Survey mapping (to identify potentially notable habitats);
- Aerial photography (to identify potentially notable habitats); and
- COFNOD Ecological Record Centre (protected species, sites and habitat records).

Field Survey

2.1. The survey was undertaken on 20th August. The weather was sunny with clear skies and with temperatures of 22°C. Towards the end of the survey, a thunderstorm was in close proximity but did not impact the survey.

2.2. The broad vegetation communities and any evidence of protected species on site were surveyed and mapped by Tilhill Forestry Principal Ecologist Jack Dunn BSc. ACIEEM on the 20th August 2026, who holds a Natural England Class 1 GCN survey licence (2017-32075-CLS-CLS) and a Natural England Class 1 bat survey licence (2019-38756-CLS-CLS) and is experienced in UKHab Habitat survey and holds a FISC Level 3 certificate.

2.3. Evidence of protected / notable species or notable small-scale habitats on site were mapped as points.

2.4. The survey methodology followed that described in the 'Guidelines for Preliminary Ecological Appraisal' (CIEEM, 2017) and plant communities defined, where possible, following the descriptions in the UK Habitat Classification Version 2.1 (UKHab Ltd., 2026).

2.5. The entirety of the site was walked where possible, following topographical contours and any mammal trails / footpaths where they were apparent.

2.6. All polygons and evidence of protected species were mapped using a GPS-enabled tablet in conjunction with the Coreo UKHab app and QGIS.

2.7. The survey also identifies the potential presence / likely absence of protected and / or notable species, and highlights where further specific surveys may be required during the appropriate season.

2.8. Habitat potential for legally protected or national/local biodiversity framework species was noted including, but not limited to, bats, mammals, breeding birds, flora, amphibians, invertebrates and reptiles.

2.9. Representative site photos of the identified habitats can be found within the results section. All photos are available upon request.

Limitations

2.10. There were no significant limitations to the survey.

3. SITE DESCRIPTION

3.1. The site, at circa 8Ha, is largely agricultural land bordered and intersected by native hedgerows. It lies within property owned by Maelor Forest Nurseries, a whole sale nursery producing bare root trees for forestry, hedging and woodland creation. Maelor's head office and main nursery site is located just 1km south of the site, based at Field's Farm, which has various buildings, including polytunnels, grading sheds and storage buildings

3.2. The site is within Clwyd, Wales and is located approximately 5 miles southwest of Whitchurch, Shropshire, England. The site central grid reference is SJ 47490 37850.

3.3. The site is largely surrounded by agricultural land with moderately sized stands of conifer and broadleaved woodland, interspersed with small urban areas, waterbodies and canals. To the south-east of the site is Fenn's Moss / Fenn's, Whixail and Bettisfield Mosses National Nature Reserve / SSSI (See Figure 2 and Figure 3).

3.4. The site sits at c. 100m above sea level (a.s.l) at the northernmost extent, sloping slightly downhill eastwards to approximately 95m a.s.l.

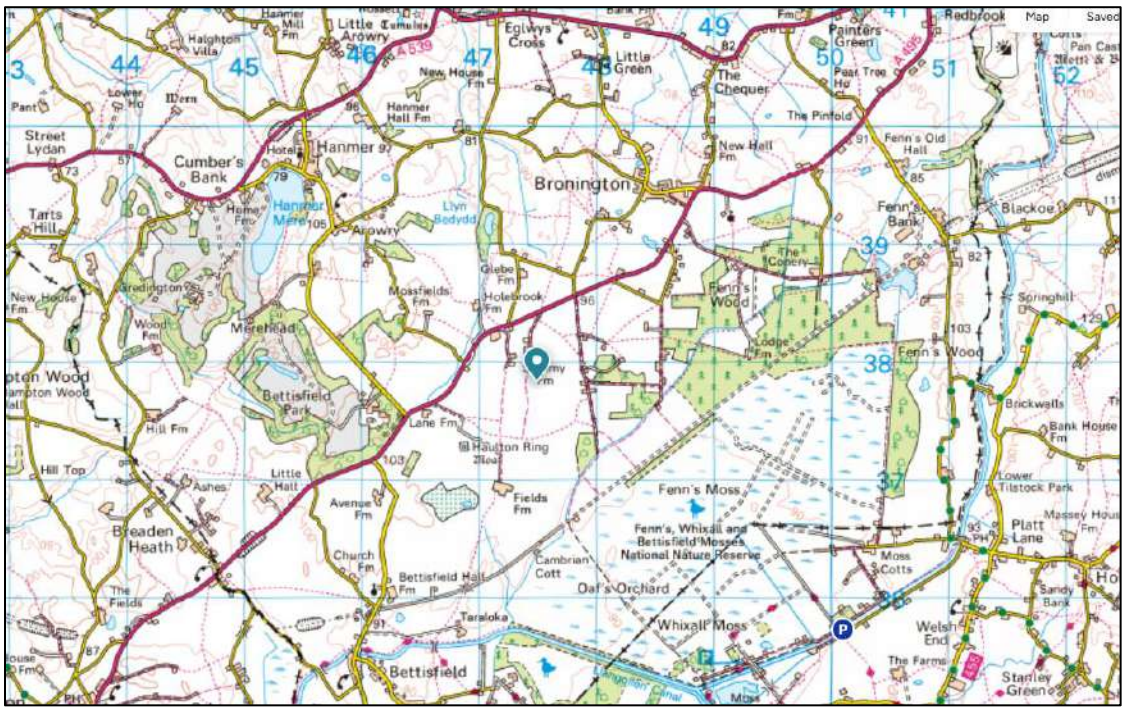


Figure 2 - Site Location (OS Maps, 2026)

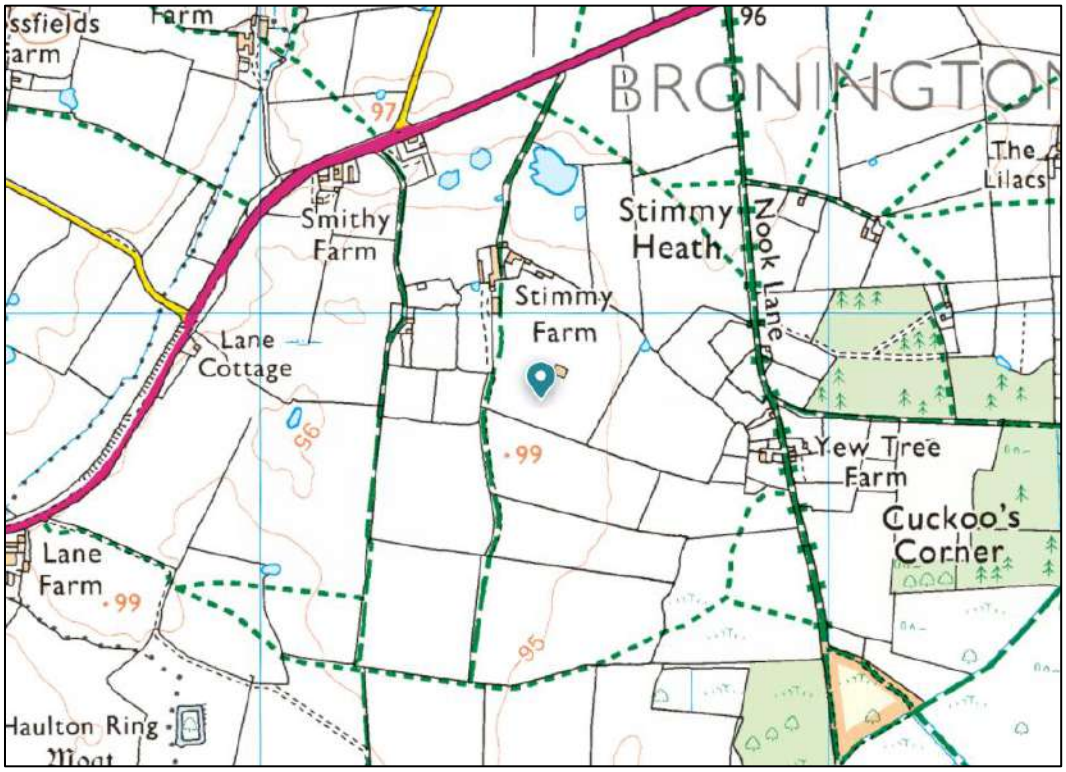


Figure 3 – Site Topographic Map (OS Maps, 2025)

4. DESK STUDY

Soils

4.1. Soilscape maps show the site soil comprises slowly permeable seasonally waterlogged reddish fine loamy over clayey, fine loamy and clayey soils (data originated from the Cranfield University, Land Information System LandIS® Portal as Public Data [2026], subject to the LandIS Portal Open Licence).

4.2. The Welsh Peat Map shows no peaty soils on site; however, peatland is located approximately 450m south-west of the site, associated with Fenn's Moss / Fenn's, Whixail and Bettisfield Mosses National Nature Reserve / SSSI (DataMapWales, 2022).

Priority Habitats

4.3. COFNOD Ecological Record Centre records were accessed to determine the current extent of any priority habitat or ancient semi-natural woodland (ASNW) on site.

4.4. The data indicated that the site contains no priority habitat or ASNW.

4.5. Within 2km of the site, the following priority habitat has been identified (all distances given from site central grid reference) (see Figure 4):

- Wood pasture and parkland – Grid Ref: SJ4537 – c. 1600m west
- Purple moor grass and rush pasture – Grid Ref: SJ4738 – c. 950 north
- Traditional orchard – SJ 478 379 – c. 330m north-east
- Lowland dry acid grassland and traditional orchard – Grid Ref: SJ4838 – c. 1100m east
- Purple moor grass and rush pasture – Grid Ref: SJ4938 – c. 1600m east
- Lowland fens and reedbeds – Grid Ref: SJ 4937 – c. 1600m east
- Raised bog – Grid Ref: SJ 4837 – c. 725m east
- Lowland heathland – Grid Ref:SJ481 347 – c. 730m south-east
- Lowland dry acid grassland – Grid Ref: SJ 4837 – c. 650m south-east
- Lowland fens and reedbeds – Grid Ref: SJ 480 367 – c. 1100m south-east
- Area of mixed lowland fens and reedbeds, lowland dry acid grassland, purple moor grass and rush pasture – Grid Ref: SJ 4736 – c. 1400m south

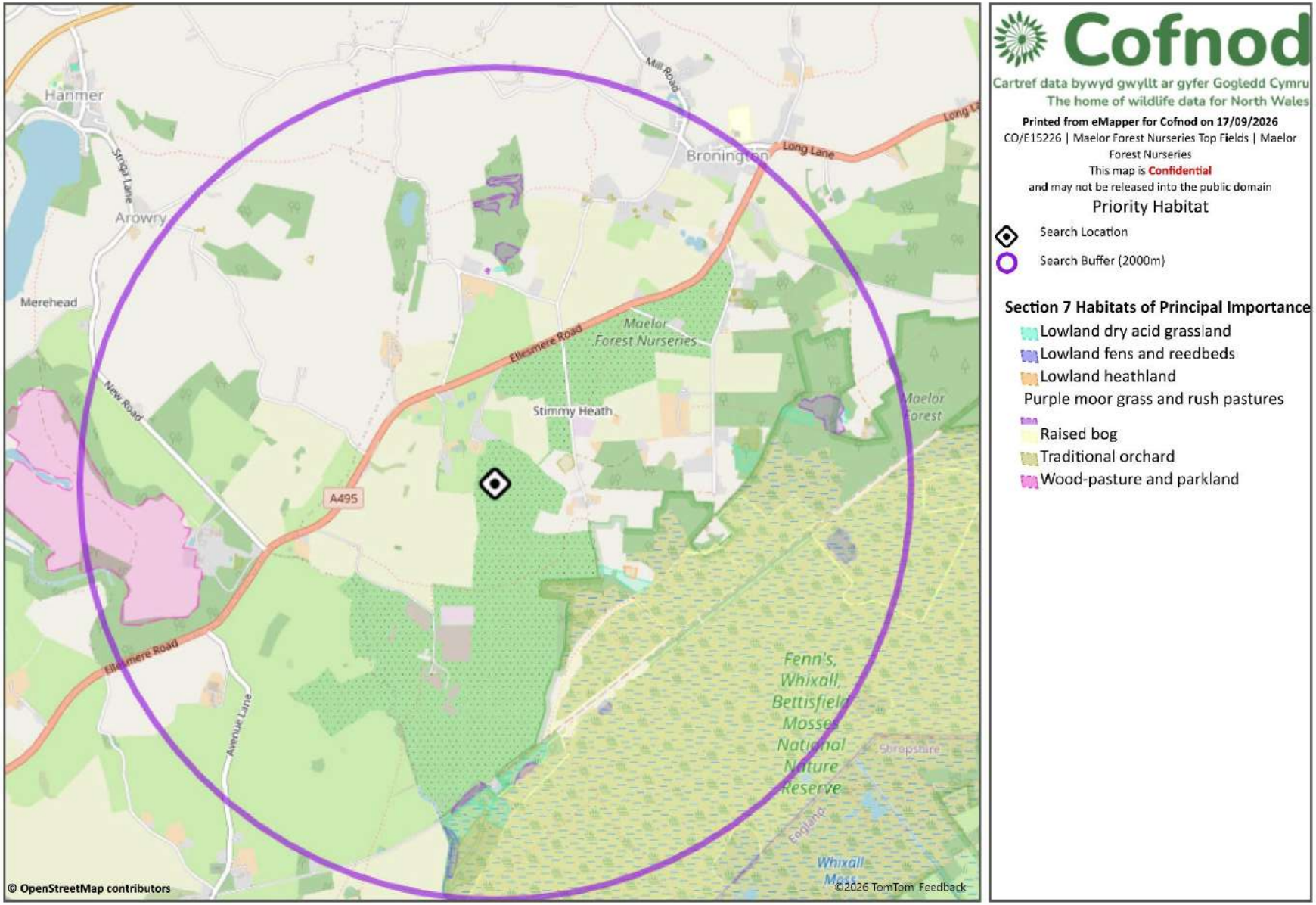


Figure 4 - Priority Habitat (COFNOD, 2026)

Ancient Semi-Natural Woodland (ASNW) Inventory

4.6. No ASNW is present within the site boundary.

4.7. Within 2km of the site, a concentration of ASNW, Ancient Woodland Site of Unknown Category, Plantation on Ancient Woodland Site (PAWS) and Restored Ancient Woodland is located c. 1 mile south-west-west of the site, associated with Bettisfield Park (see Figure 5).

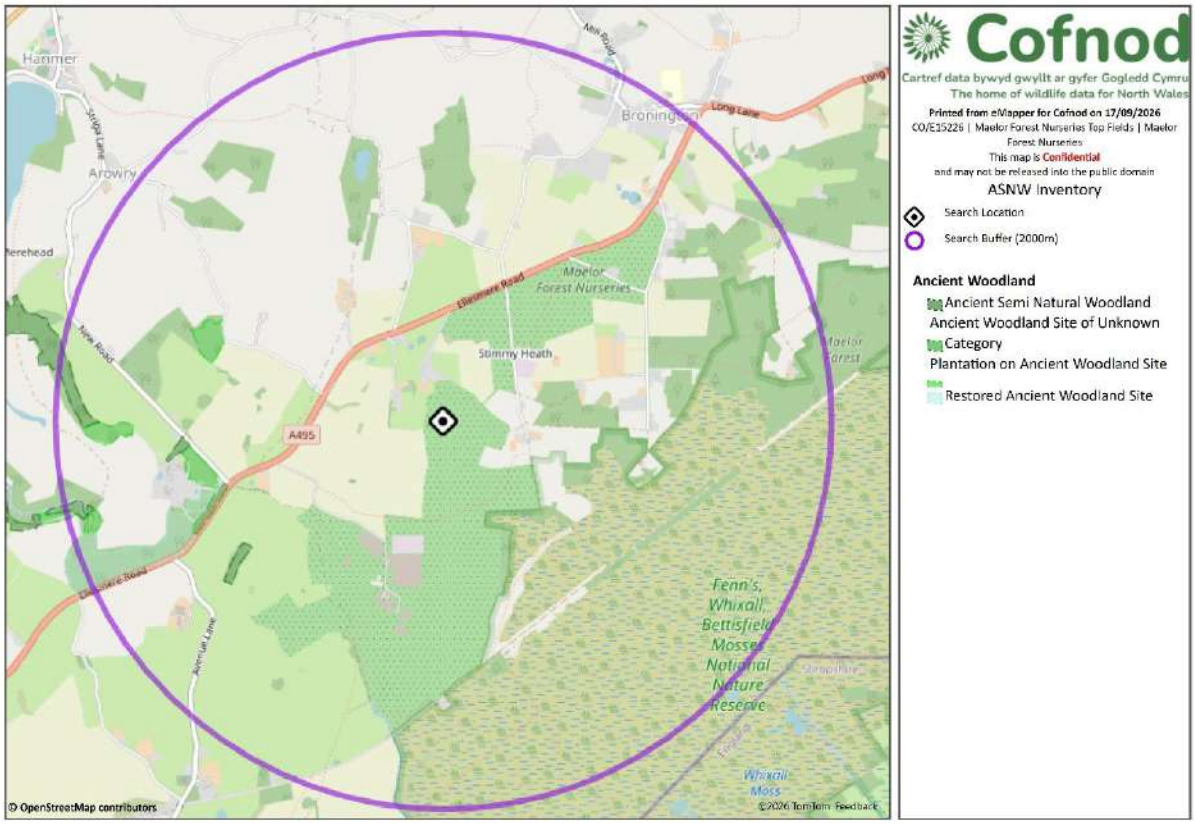


Figure 5 - ASNW Inventory

Watercourses

4.8. No watercourses are present within the site boundary.

4.9. There are no ponds within the site boundary, however a small pond is present on the north-eastern boundary of the site (see Figure 6).



Figure 6 - Pond Location

Statutory Sites and SSSI Impact Risk Zones

4.10. COFNOD Ecological Record Centre records were accessed to determine the current extent of any statutory sites within 2km of the site. All distances are given in relation to the site central grid reference.

Table 1- Statutory Sites

Site Type	Site Name	Distance (m)	Description
Sites of Special Scientific Interest	Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses	509 East (NRW) 2000 SE (Natural England)	Designated for open water and peatland sites as a result of natural depressions in glacial drift left by ice sheets 15,000 years ago. Approximately 60 open water bodies known as 'meres / pools' are present along with a smaller number of peatland sites known as 'mosses'. Site supports wide range of characteristic acid peat bog vegetation such as Sphagnum mosses and heathland species. Site is important for variety of breeding birds including sparrowhawk *Accipiter nisus*, curlew *Numenius arquata,* snipe *Gallinago gallinago and* nightjar *Caprimulgus europeaus* along with over-wintering short-eared owl *Asio flammeus.* The site is also a local strong hold for adder *Vipera berus.*

Sites of Special Scientific Interest	Llyn Bedydd	944 North-West	Part of a series of Internationally important open water and peatland sites. A series of meres / pools and mosses which have developed in natural depressions from glacial drift. Llyn Bedydd is a small eutrophic mere, fed be a small stream to the south that flows through fen pasture and swampy alder carr woodland. Supports scarce and important vegetation of sedge *Carex spp.*, nationally scarce cowbane *Cicuta virosa*. Site supports a rich invertebrate population including nationally scarce variable damselfly *Coenagrion pulchellum*.
Ramsar	Midland Meres & Mosses Phase 2 (Wales)	509 East amd 944 North-West	Part of a series of lowland open water and peatland sites. Natural depressions from glacial drift. Midland Meres and Mosses features open water, raised bog, fen, swamp, carr and supports a number of rare plants associated with wetlands including cowbane, elongated sedge *Carex elongata* and bryophytes including *Dicranum affine* and *Spahgnum pulchrum.* 16 species of red book insects are present on the site. Supports bird species of national importance including Northern shoveler *Anas clypeata*, cormorant *Phalacrocorax carbo carbo*, bittern *Botaurus stellaris stellaris* and water rail *Rallus aquaticus.*
National Nature Reserves	Fenn's, Whixall and Bettisfield Mosses	493 East	One of the biggest and best raised bogs in Britain, main habitats include lowland raised bog, wet woodland, wet peat, heathland and Teesdalia grassland. Features 18 species of bog moss and other characteristic bog plants. Invertebrate population is also important and has improved after bog restoration works. Reptile population of adder and common lizard *Zootoca vivipara* thriving. 166 recorded species of bird including breeding curlew, teal *Anas crecca*, shoveler. Sightings of hen harrier *Circus cyaneus*, hobby *Falco subbuteo* and short-eared owl.

4.11. The site lies within a Natural England SSSI Impact Risk Zone (IRZ) attributed to Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses SSSI (DEFRA, 2026).

4.12. Use of the SSSI Impact Risk Zone tool considers whether the proposed development matches any of the follow descriptions:

- **Infrastructure:** Airports, helipads and other aviation proposals.
- **Minerals, Oil and Gas:** Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.
- **Air Pollution:** Any industrial/agricultural development that could cause AIR POLLUTION (including: industrial processes, livestock & poultry units with a floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500 tonnes).

- **Combustion:** General combustion processes >50MW energy input. Including: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/combustion.

4.13. As the proposed development is for a reservoir with reservoir related infrastructure and does not fall within any of the above categories, the development would not require any consultation with Natural England. However, where the SSSI IRZs indicate a risk is unlikely, this does not mean that there are no potential impacts on biodiversity or the wider natural environment and there may be a requirement to consult Natural England as a statutory consultee on other matters.

4.14. Whilst NRW do not have official SSSI impact risk zones, the site is in relatively close proximity (509m east) to the NRW designated SSSI; Fenn's, Whixall, Bettisfield, Wem & Cadney Mosses SSSI.

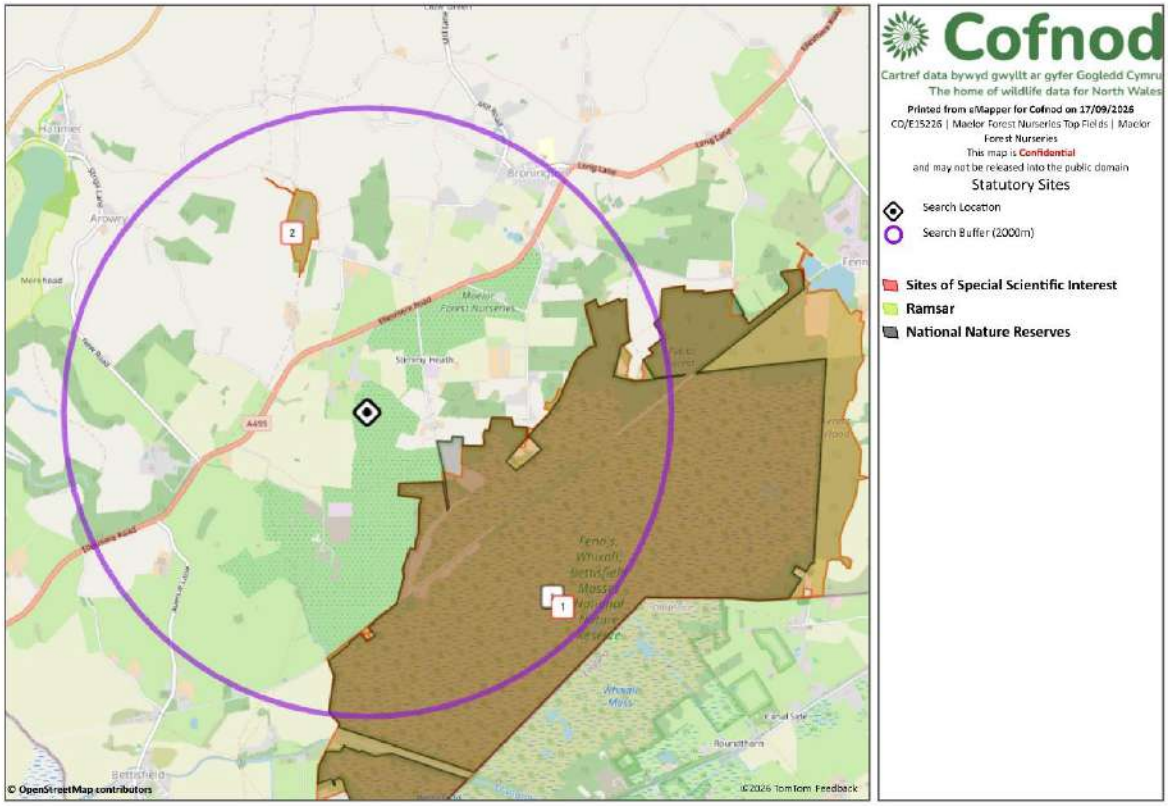


Figure 7- Statutory Sites Map

Non-Statutory Sites

4.1. COFNOD Ecological Record Centre records were accessed to determine the current extent of any non-statutory sites within 2km of the site. All distances are given in relation to the site central grid reference.

Table 2 - Non-Statutory Sites

Site Type	Site Code	Site Name	Distance	Habitats	Description
Important Invertebrate Areas		Northeast Wales	509 East		Areas designated by Bug Life. Vast area of upland and lowland habitats in Powys, Denbighshire, Wrexham, Shropshire and Cheshire along route of the River Dee as it flows through NE Wales into England. This landscape supports an ecologically rich series of habitats such as calcareous grassland, parkland, brownfield sites, blanket bog, mountain peaks and ridges, scree and moorland plateaus. Fenns, Whixall, Bettisfield, Wem and Cadney Moss which lies on the English/Welsh border, together with the peripheral areas of wet and dry woodland, support an exceptional invertebrate fauna that includes the Endangered White-faced Darter (*Leucorrhinia dubia*) and Nationally Rare jumping spider *Sitticus caricis*.
Important Plant Areas		Midland Meres & Mosses IPA	506 East		Specific site description not available from Plant Life at time of writing, however mapping shows the IPA is contained within the Fenn's, Whixall, Bettisfield, Wem and Cadney Mosses site.
Important Curlew Areas		ICA 7 Fenn's and Whixhall Moss	0		Site is within the ICA 7 Fenn's and Whixhall Moss ICA and are an indication of key areas of joint working between organisations committed to curlew population recovery in Wales.
Wildlife Sites for Wrexham	W430	Willis' Gorse and Marsh	969	Continuous bracken, Marsh/marshy grassland, Semi-improved acid grassland, Semi-natural broad-leaved woodland	An area of diverse habitats and species. The majority of the site is marsh with abundant yorkshire fog and rushes. The western marsh is short, neutral and semi-improved with much marsh horsetail, creeping buttercup and hairy sedge. The southern marsh is more acid and rank with tufted hair-grass dominant. Other species present in both marshes include tormentil, marsh willowherb, bog stitchwort and meadowsweet. At the southern tip of the site is a small area of lowland acid grassland and gorse scrub. Species such as common bent, sheep's fescue and heath bedstraw dominate here. Willis' Gorse is a recently fenced

					open woodland with much bracken in the clearings. Downy birch and alder are the most frequent trees on the mainly damp soil. Species present within the underdeveloped ground flora include lady fern, bluebell and raspberry.
Wildlife Sites for Wrexham	W431	Arowry Moss	1438	Semi-natural broad-leaved woodland	An old bog which has become woodland. Downy birch, alder, rowan and willow species form a short, often scrubby canopy. Beneath this some bog species still persist in the ground layer. There are several patches of Sphagnum moss as well as some purple moor-grass, Polytrichum moss and marsh violet. Other species found within the woodland include broad buckler fern, remote sedge, honeysuckle and lesser skullcap.
Wildlife Sites for Wrexham	W433	The Drive	1779	Broad-leaved plantation, Continuous bracken, Semi-natural broad-leaved woodland	A large secondary woodland along the line of an old manor drive. The canopy consists of mainly sycamore and pedunculate oak with some planted conifers and beech. The understorey has much rhododendron and elder along with some wild cherry and wych elm. The ground flora is under-developed and sparse in places; bramble, bracken and ferns dominate. Other species present include bluebell, dog's mercury, wood millet and figwort.
Wildlife Sites for Wrexham	W435	The Rookery	1344	Broad-leaved plantation, Semi-natural broad-leaved woodland	An area of oak woodland with adjoining broadleaved plantations. The plantation along the southern edge is mainly ash, whilst the one to the east is exclusively oak. The mature woodland's canopy is also dominated by pedunculate oak, with some sycamore, beech and scot's pine. The understorey is under-developed with much elder and some wych elm. The ground flora has abundant bramble, bracken, stinging-nettle and ferns. Other species present within this layer include tufted hair-grass, raspberry, wood-sorrel, bluebell and wood millet.

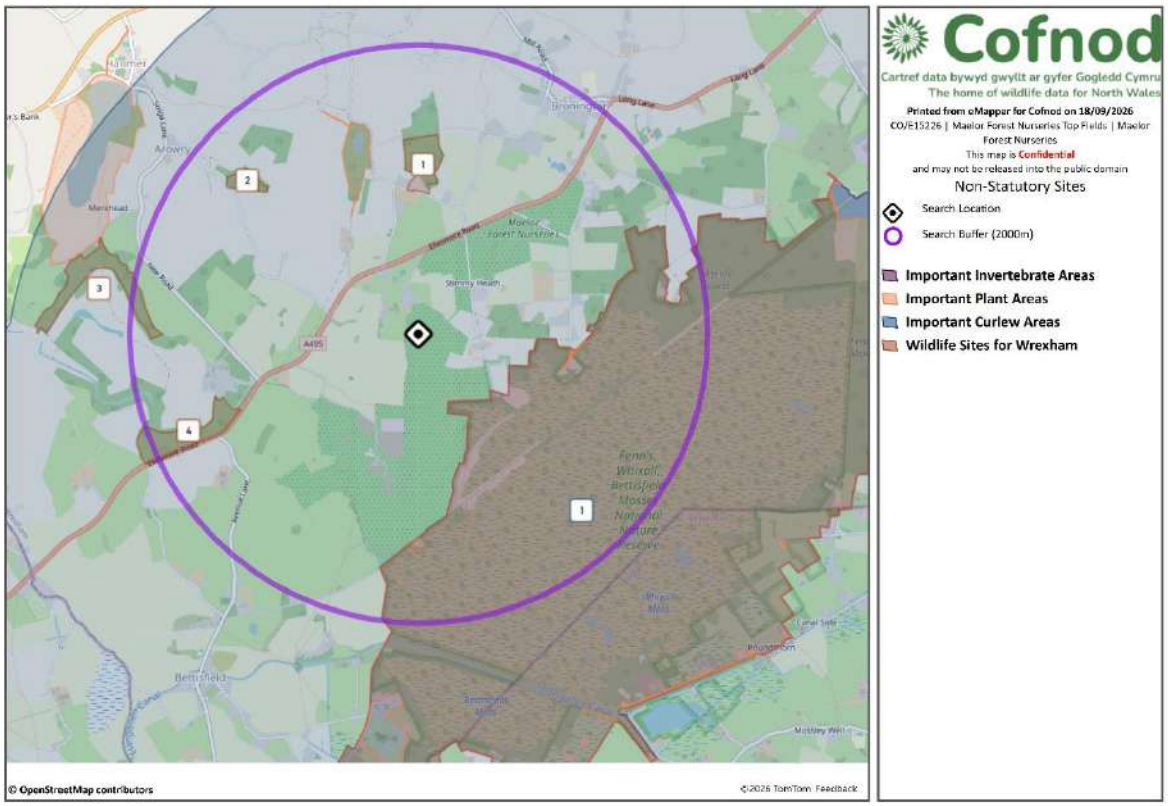


Figure 8 - Non-Statutory Sites Map

COFNOD Species Records

4.2. COFNOD were consulted for protected species records within 2km of the site central grid reference. Only records within the last 10 years (since 2016) have been considered.

4.3. A full list of species records is available upon request.

Birds

4.4. COFNOD returned 1826 records in the last 10 years within 2km of the site. These records are attributed to 108 species.

4.5. 25 Wildife and Countyside Act 1981 (as amended)(WACA 1981) Schedule 1 species were recorded comprising Peregrine Falcon *Falco peregrinus*, Redwing *Turdus iliacus*, Fieldfare *Turdus pilaris*, Hobby *Falco subbuteo*, Hen Harrier *Circus cyaneus*, Marsh Harrier *Circus aeruginosus, ,* Red Kite *Milvus milvus, ,* Merlin *Falco columbarius,* Cetti's Warbler *Cettia cetti*, Barn Owl *Tyto alba*, Little Ringed Plover *Charadrius dubius*, Firecrest *Regulus ignicapilla*, Kingfisher *Alcedo atthis*, Mediterranean Gull *Ichthyaetus melanocephalus*, Greenshank *Tringa nebularia*, Crossbill *Loxia curvirostra*, Goshawk *Astur gentilis*, Scaup *Aythya marila*, Common Scoter *Melanitta nigra*,

Green Sandpiper *Tringa ochropus,* Brambling *Fringilla montifringilla*, Quail *Coturnix coturnix*, and Whimbrel *Numenius phaeopus*.

4.6. 12 EU Birds Directive Annex 1 Species, transposed into UK law through the Conservation of Habitats and Species Regulations 2017 (as amended) were recorded comprising Hen Harrier, Short-Eared Owl *Asio flammeus*, Marsh Harrier, Red Kite, Peregrine Falcon, Nightjar *Caprimulgus europaeus*, Merlin, Kingfisher, Mediterranean Gull, Spoonbill *Platalea leucorodia*, Crane *Grus grus* and White-Tailed Eagle *Haliaeetus albicilla.*

4.7. 73 species are listed under Section 7 of the Environment (Wales) Act 2016.

4.8. 34 species are listed as Red under Birds of Conservation Concern 5 (BoCC 5).

4.9. No species of note have been recorded within the site footprint within the last 10 years. However it is noted this could be due to a lack of any recent surveying.

4.10. A full species list and number of records for each species is provided within Appendix 3 – Full Bird Records.

Amphibians

4.11. There are no records of Great-Crested Newt (GCN) *Triturus cristatus* within 2km of the site in the last 10 years.

4.12. The following records have been made available by COFNOD:

- Common Toad *Bufo bufo* – 3 records
- Smooth Newt *Lissotriton vulgaris* – 1 record
- *Lissotriton sp.* (Common / Smooth Newt) – 1 record
- Common Frog *Rana temporaria* - 15 records

4.13. Of these species, the Common Toad is a Section 7 Priority Species and all are protected under Schedule 5 of the WACA 1981.

4.14. The majority of these records are in relation to Fenn's, Whixall, Bettisfield Mosses SSSI / NNR which is located c. 700m east of the site.

4.15. However, recent records are available from pond surveys undertaken at Maelor Forest Nurseries by the local Amphibian and Reptile Group (ARG) members Joe Roberts and Mandy Cartwright between 2024 and 2026, which is located 839m south of the site, which relate to breeding evidence for Common Frog, Common Toad and Smooth Newt.

4.16. No species of note have been recorded on site within the last 10 years.

Reptiles

4.17. COFNOD returned 256 records of reptiles within 2km of the site:

- Slow Worm *Anguis fragilis* – 34 records
- Adder *Vipera berus* – 1 record
- Common Lizard *Zootoca vivipara* – 142 records

4.18. All of these species are Section 7 priority species and protected under Schedule 5 of the WACA 1981.

4.19. All of these records relate to Fenn's, Whixall, Bettisfield Mosses SSSI / NNR which is located c. 700m east of the site.

4.20. No species of note have been recorded on site within the last 10 years.

Mammals

4.21. COFNOD returned 5 records of 3 species, within 2km of the site in the last 10 years:

- Hedgehog *Erinaceus europeaus* – 3 records
- [redacted]
- Common Pipistrelle bat *Pipistrellus pipistrellus* – 1 record

4.22. Hedgehogs are listed under Schedule 6 of the WACA 1981 which prevent killing or capturing of wild hedgehogs using certain methods.

4.23. The closest record for Common Pipistrelle is 1.48km north of the site and refers to a confirmed roost site.

4.24. [redacted]

4.25. No species of note have been recorded on site within the last 10 years.

Invertebrates

4.26. COFNOD returned 886 records of 34 invertebrate species.

4.27. Of these records, the majority are located within Fenn's, Whixall, Bettisfield Moss NNR / SSSI 700m west of the site.

4.28. No species have been recorded on site within the last 10 years.

Flora

4.29. COFNOD returned 466 records of 87 flora species within 2km of the site. Of these records, the most notable are:

- 5 records of Bluebell *Hyacinthoides non-scripta* – protected under Schedule 8 of the WACA 1981
- 1 record of Large-flowered Hemp-nettle *Galeopsis speciosa* – Section 7 priority species
- 3 records of Corn Spurrey *Spergula arvensis* - Section 7 priority species.

4.30. No species of note have been recorded on site within the last 10 years. This may reflect a lack of survey effort and recording within the last 10 years.

5. FIELD SURVEY RESULTS

Notable and Protected Species Results

Birds

5.1. The survey was undertaken outside the breeding bird season (March – August inclusive).

5.2. No bird nests or breeding behaviour was identified during the walkthrough; however, this is expected given that the survey was undertaken outside of the main breeding bird season.

5.3. Whilst the survey did not constitute a full breeding bird survey, an assemblage of birds were identified from their calls / song including:

- Linnet *Carduelis cannabina* (S41, Red List) – observed perching on telephone / electricity wires;
- Robin *Erithacus rubecula* – heard within hedgerow;
- House Sparrow *Passer domesticus* – heard next to farm buildings near to the north-west boundary of the site
- House Martin *Delichon urbica* - observed flying over site; and
- Skylark *Alauda arvensis* – observed after flushing from the northern field.

Amphibians

5.4. No amphibians were observed during the survey.

5.5. There were no waterbodies on site that represented typical suitable breeding habitat for amphibians, such as ponds or ditches with slow / no moving water.

5.6. The small area of wetland around the water storage tank did not appear to show use by any amphibians and is unlikely to be in use by any notable species.

5.7. Adjacent to the north-eastern boundary of the site, a waterbody approximately 200m^2 was identified. A GCN Habitat Suitability Index (HSI) was undertaken, following Oldham et al. (2000). The score of this pond was 0.6 and was thus categorised as “Average” suitability for great-crested newt.

Reptiles

5.8. No evidence of reptiles was observed during the survey.

5.9. Suitable terrestrial habitat was present on site in the form of hedgerow and the site was considered to be open enough that would provide suitable basking areas, however there was a notable lack of scrub and other terrestrial habitat, such as dead wood, walls, rubble and rough grassland that would provide extensive cover and refugia.

Red Squirrels

5.10. No evidence of red squirrels *Sciurus vulgaris* was identified during the survey. This was expected as red squirrels are locally extinct in the area and will not be considered further in this report.

Badgers

5.11. No evidence of badgers, such as hairs, dung pits, foraging signs or setts were identified during the survey.

5.12. No mammal trails were identified during the survey.

Bats

5.1. No bats or evidence of bats was identified during the survey.

5.2. A veteran Ash *Fraxinus excelsior* tree and veteran oak *Quercus robur* tree were identified on the north-eastern boundary. The veteran ash tree appeared to have suffered fire damage, featured knot hole cavities, appeared to be alive and was deemed to have potential to support roosting bats.

Water Vole

5.3. No evidence of water vole *Arvicola amphibius* was observed during the site survey.

5.4. No suitable watercourses were identified on or adjacent to the site, which would comprise of steeply banked, vegetated, slow flowing small watercourses with emergent and tall vegetation.

Otter

5.5. No evidence of otter *Lutra lutra* (spraints, tracks, slides, feeding remains) or potential holt locations were observed during the site survey.

Pine Marten

5.6. No evidence of Pine Marten *Martes martes* or potential denning habitat was observed during the site survey. They are not expected to be present and are thus not considered further within this report.

Hazel Dormouse

5.7. No evidence of hazel dormouse *Muscardinus avellanarius*, comprising nests or feeding evidence, was observed during the survey.

5.8. The hedgerows on site were largely monocultural, lacking diversity and were deemed poor suitability for hazel dormouse.

Invertebrates

5.9. During the site survey, small white *Pieris rapae* butterflies were identified foraging on the flowering plant species.

5.10. *Orthoptera spp.* (grasshoppers / crickets) were also observed within the perennial horticultural fields but could not be identified to species level.

Other Species

5.11. Freshwater pearl mussel *Margaritifera margaritifera* and white-clawed crayfish *Austropotamobius pallipes* were not considered during the survey due to the lack of a main watercourse that would be suitable for their habitat requirements.

Habitats Results

5.12. Five broad habitats were identified during the field survey, comprising the following UKHab habitat types:

- Buildings;
- Other native hedgerow;
- Other wetlands;
- Other standing water; and
- Polyculture – horticulture.

5.13. Each habitat type is listed in the results, with specific polygons and their individual ID numbers listed.

5.14. Whilst the survey did not comprise a full botanical survey twenty-seven species were identified and recorded. A floral species list relating to the site can be found in Table 3.

Table 3 - Floral Species List

Scientific Name	Common Name	Scientific Name	Common Name
Alnus glutinosa	Alder	*Phacelia tanacetifolia*	Phacelia
Arctium minus	Lesser Burdock	*Picea sitchensis*	Sitka Spruce
Avena fatua	Wild-oat	*Prunus sp.*	Plums, cherries and allies
Betula pubescens	Downy Birch	*Quercus robur*	Pedunculate Oak
Chenopodium sp.	Goosefoots	*Quercus sp.*	Oak species

Cichorium intybus	Chicory	*Rorippa sylvestris*	Creeping Yellow-cress
Cirsium vulgare	Spear Thistle	*Rosa sp.*	Roses
Crataegus monogyna	Hawthorn	*Rubus fruticosus agg.*	Bramble
Epilobium sp.	Willowherbs	*Salix cinerea*	Grey Willow
Fraxinus excelsior	Ash	*Sambucus nigra*	Elder
Hedera helix	Common Ivy	*Sorbus aucuparia*	Rowan
Ilex aquifolium	Holly	*Typha latifolia*	Bulrush
Lupinus angustifolius	Narrow-leaved Lupin	*Urtica dioica*	Common Nettle

Invasive / Non-Native Species

5.15. No notable invasive / non-native species were recorded during the site survey within the site boundary or within adjacent habitats.

UKHab Habitats Results

5.16. Following the UKHab survey, the following UKHab habitats and secondary codes were mapped, as polygon and line features, following the criteria of UKHab Ltd. (2026) A summary of these habitats can be found respectively in Table 4, with the respective secondary codes listed in Table 5.

5.17. A map showing the UKHab results can be found in Appendix 1 - Preliminary Ecological Survey Map.

5.18. Condition assessments were not undertaken as part of the PEA, as a specific survey would be required to assess and record the condition of these habitats. The habitats / notable features mapped included:

- Broadleaved and mixed woodland – veteran tree
- Buildings
- Other native hedgerow
- Other standing water
- Other wetlands
- Perennials horticulture

Table 4 - UKHab Habitat Features Results

Polygon ID	UKHab Habitat	UKHab Habitat Code	Secondary Codes	Area (ha)	Length (km)	Distinctiveness (see 1.6)	Notes
33370802	Broadleaved and mixed woodland – Veteran Tree	w1	204	0	0	N/A	Knot holes, fire damage, potential bat roost features (PRF's).

33370811	Broadleaved and mixed woodland – Veteran Tree	w1	204	0	0	N/A	Oak, in good condition, no obvious PRF's identified.
33370827	Buildings	u1b5		0.0149	0	0	Water storage
33370782	Other native hedgerow	h2a6	81	0	0.1917	2	Dominated by hawthorn. Rare elder. Ivy covers lower parts, bramble sometimes. Nettle rare.
33370790	Other native hedgerow	h2a6	81	0	0.2112	2	Dominated by hawthorn. Rare elder. Ivy covers lower parts, bramble sometimes. Nettle rare.
33370804	Other native hedgerow	h2a6	81 204	0	0.1954	2	Dominated by hawthorn. Rare elder. Ivy covers lower parts, bramble sometimes. Nettle rare. Just outside fence line on northern boundary.
33370834	Other native hedgerow	h2a6		0	0.1119	2	Dominated by hawthorn, some bramble, holly. Southern boundary.
33370801	Other standing water	r1g	41	0.036	0	N/A	Small pond outside site boundary, but notable feature
33370822	Other wetlands	f2f	10 503 506 517	0.0195	0	4	Wet scrub species, including willow, willowherb, bramble and small patch of bulrush. Wet area around water storage tank
33370813	Polyculture horticulture	c1f7	81 502 506 517 609	5.5495	0	2	Cover crop, usually used for nursery tree species.
33370829	Polyculture horticulture	c1f7		2.3489	0	2	Nursery tree species including sitka spruce, birch, rowan, alder

Table 5 - Secondary Codes and Descriptions

Secondary Code	Description
10	Scattered Scrub
41	Pond (non-priority)
81	Ruderal or Ephemeral
204	Veteran Tree
502	Seasonally Wet

503	Wet
506	Nutrient Poor Substrate
517	Recent Management
609	Cover Crops

Veteran Trees

Broadleaved Woodland w1 – Notable Features – Irreplaceable Habitat

5.19. Two veteran trees were identified on the north-eastern boundary, comprising an ash tree and an oak tree. Under UKHab, these are not provided a distinctiveness category.

5.20. The ash tree appeared to be severely damaged, possibly by far as evidenced by scorch marks, however the tree was alive and leafing. The tree featured a knot hole, classed as a potential bat roost feature (PRF), which have potential to support roosting bats as the knot hole appeared, from ground level, to lead to a further cavity.

5.21. The oak tree was in good condition and did not show any serious signs of disease or decay and no PRF's were identified.

5.22. The survey ID numbers for the trees were 33370802 and 33370811.



Figure 9 - Knot Hole PRF on Ash

Buildings u1b5 – Non-priority habitat

5.23. A water storage building was identified during the survey on the northern boundary of the southernmost area, adjacent to hedgerow. This was primarily constructed with corrugated metal sheeting.

5.24. This has a habitat distinctiveness score of 0.

5.25. The Survey ID number for this building was 33370827.



Figure 10 - Water Storage Building

Other Native Hedgerow h2a6 – Non-Priority Habitat

5.26. In total, the site features c. 0.71m of 'other native hedgerow'. This is largely focused around the peripheral areas of the site, with 3 of the 4 hedgerows bordering the same field and the remaining hedgerow intersecting the two parcels of polyculture horticultural land.

5.27. The hedgerows all share the same general characteristics and were typically dominated by a single species; hawthorn. However, they also featured common ivy, willowherb, bramble, spear thistle, holly, lesser burdock, nettle, elder, rose species and rarely elder, young oak, ash.

5.28. The hedgerows on site all have a habitat distinctiveness score of 2.

5.29. The four hedgerows had the following Survey ID no.:

- 33370782
- 33370790
- 33370804
- 33370834



Figure 11 – Hedgerow 33370782 at centre of site running east to west

Horticultural Land

Polyculture Horticulture c1f7 – Non-priority habitat

5.30. Polyculture horticulture is classed under UKHab as land where >1 species is grown at the same time and place.

5.31. The site has 2 parcels of polyculture horticultural land. Totalling 7.9Ha. The parcel ID's are:

- 33370813
- 33370829

5.32. Both these parcels of land have a habitat distinctiveness score of 2.

33370813

5.33. This parcel comprises the field at the northern end of the site, measuring approximately 5.5Ha.

5.34. The species composition of this area is largely a cover crop (A. Henry pers. comm.) dominated by *Chenopdoium sp.* (goosefoots), with occasional Phacelia, rarely *Lupinus sp.*, chicory, creeping yellow-cress, willow herb and wild-oat grass.



Figure 12 - Parcel 33370813 showing goosefoots dominance

33370829

5.35. This parcel of land comprises the field at the southern end of the site, measuring 2.35Ha.

5.36. This was clearly land used for nursery purposes, with the species composition comprising seedling age abundant sitka spruce and occasional birch, rowan and alder seedlings.



Figure 13 - Parcel 33370829 showing seedling tree species planted as part of the nursery

Other Habitats

Ponds r1g – non-priority habitat

5.37. A small c. 200m^2 pond lies just outside of the site boundary to the north-east and has been recorded as a notable feature of interest.

5.38. This habitat has a habitat distinctiveness score of 4.

5.39. Negligible emergent vegetation was observed, the water appeared murky and brown in colouration, with evident wear to the eastern bank. The pond had little shade but some shrub species were present around the perimeter of the pond (see Figure 14).

5.40. On the discovery of this pond, a GCN Habitat Suitability Index (HSI) was undertaken, following Oldham et al. (2000). The score of this pond was 0.62 and was thus categorised as "Average" suitability for great-crested newt.



Figure 14 - Pond adjacent to north-east boundary

Other wetlands f2f – non-priority habitat

5.41. Adjacent to the water storage building lies a small area of 'other wetland' measuring c. 0.02Ha.

5.42. This habitat does not have a distinctiveness score under UKHab.

5.43. The area was wet, on a nutrient poor substrate and was largely dominated by willowherb with occasional grey willow, bramble and bulrush. This is likely from overspill from the water storage and appears to be wet even in hot weather as a result.



Figure 15 - Standing water adjacent to water storage building

6. CONCLUSIONS AND RECOMMENDATIONS

Protected Species

Birds

6.1. Whilst the PEA was undertaken outside the breeding bird season, some species indicative of the agricultural and hedgerow habitats, such as skylark and linnet, were recorded via their calls.

6.2. Although no evidence of breeding behaviour was recorded, due to the survey being undertaken outside of the breeding season, the agricultural land and associated hedgerows are likely to support breeding populations of skylark and linnet, both of which are Section 7 species of principal importance in Wales and UK Birds of Conservation Concern (BOCC) Red List species.

6.3. The Section 7 list, established under the Environment (Wales) Act 2016, identifies the species and habitats that public authorities must consider when delivering their Section 6 Biodiversity and Resilience of Ecosystems Duty. The update reflects the latest evidence on habitat condition, emerging pressures, and conservation needs.

6.4. The BOCC (Stanbury et al., 2021) assessed the historical decline, recent trends in population, range, localisation and international importance of each species and categorises species as red listed (most concern), amber (moderate concern) and green (least concern).

6.5. Linnet have declined approximately 20% since 1994 whilst skylark have declined 9% in the same period (BTO, 2026). With both species likely declining as a result of agricultural intensification and reduction of survival rates over winter due to the decline in winter stubble, which provides a critical food source for both species.

6.6. The native hedgerows on site are generally species poor and as such offer limited resource in terms of food sources for bird species, despite offering sufficient nesting habitat. The hedgerow 33370782 which intersects the site would, in all likelihood, be removed to accommodate the reservoir construction. This should be compensated for and replaced on site with a native species rich hedgerow in order to provide suitable nesting and foraging habitat.

6.7. All active breeding bird nests are protected during the breeding season; therefore, it is recommended that any initial construction operations which result in the removal of any potential breeding bird habitat are undertaken outside the breeding bird season. Should any habitat removal be required within the breeding bird season, , further ecological surveys and potential supervision by an Ecological Clerk of Works (ECoW) will be required to determine the presence / likely absence of breeding birds.

Amphibians

6.8. Overall the site offers low suitability terrestrial habitat for amphibians with the parcels of polyculture, lacking sufficient vegetative cover and potentially presenting a barrier to amphibian movement.

6.9. The hedgerow network offers sufficient commuting pathways, foraging opportunities and refugia and the presence of the pond on the north-east boundary of the site means amphibians are likely to be present both during and outside the amphibian breeding season on site with species likely comprising common toad, common frog and *Lissotriton* newt species (e.g. smooth / palmate newt).

6.10. Pond surveys have been undertaken by Amphibian and Reptile Group UK (ARG UK) surveyors in 2026 at a pond within Maelor Forest Nurseries at SJ4706237136, which is outside the site red line boundary. The surveys found no evidence of great-crested newt, but did find breeding common frog, common toad and smooth newt.

6.11. It is not expected that the pond adjacent to the north-east boundary is suitable for breeding great crested due to the average HSI score of 0.6 and the lack of records within 2km of the site in the last 10 years.

6.12. It is therefore not expected that the site proposals would have an impact on great-crested newt and they are not considered a constraint.

6.13. Proposals are considered likely to improve the potential for amphibian breeding and where possible, accommodation of breeding amphibians within the reservoir should be accounted for in site design, with the inclusion of shallower areas with emergent vegetation to support seasonal breeding usage.

Reptiles

6.14. There were no records of reptiles relevant to the site itself, with all records in association with Fenn's, Whixall, Bettisfield Mosses SSSI / NNR which is 700m west of the site. There is a lack of suitable habitat between the site and the SSSI / NNR, as it is mostly agricultural land which would be a barrier to any potential reptile movement from the SSSI / NNR to the site.

6.15. The habitat available to reptiles on site is generally of low quality due to the lack of scrub, rough grassland and other suitable habitat. The hedgerows on site have potential to provide refugia and foraging opportunities, but due to the overall lack of habitat and connectivity to other suitable habitats where existing records are present, it is not expected that reptiles are present on site and it is not expected that the reservoir proposals would impact upon any potential reptile populations and they are therefore not considered a constraint.

Badgers

6.16. [redacted]

6.17. [redacted]

Bats

6.18. Clwyd has recorded 12 of the UK's 18 species of bats and is known to be a stronghold for the lesser horseshoe bat *Rhionolophus hipposideros*.

6.19. A single record of a common pipistrelle roost to the north of the site was provided by COFNOD. Common pipistrelle bats are an EPS species under the Conservation of Habitats Regulations 2017 (as amended) and are also on Schedule 5 of the WACA 1981.

6.20. The lack of species diversity within the hedgerows, lack of scrub and rough grassland on site and thus likely low diversity of invertebrates on site means the foraging resource for bats is likely to be poor. However, the hedges have potential to be used as commuting pathways for bats.

6.21. The construction of a reservoir is likely to improve foraging resources for bats in the area, as the reservoir will provide a new resource for breeding invertebrates and thus an improved foraging resource for bats.

6.22. It is not expected that the removal of the highlighted veteran trees is required as part of the proposals, however, should they require removal then further surveys by a suitably qualified ecologist specific to bats, including a Ground Level Tree Assessment (GLTA) and subsequent presence / absence surveys depending on the outcome of the GLTA are recommended.

6.23. The water storage building is deemed to be of negligible potential to support roosting bats, due to its usage and construction using metal corrugated materials which would give rise to an unstable temperature environment.

6.24. The removal of any hedgerow should be compensated for by planting species rich native hedgerows.

6.25. An ecologist should be consulted on any lighting design proposal around the reservoir, which will need to follow Guidance Note GN08/23 Bats and Artificial Lighting at Night (Institute of Lighting Professionals & Bat Conservation Trust, 2023) in order to reduce any potential impacts of lighting to bats and their foraging sites.

6.26. Otherwise, the proposal is not expected to have a significant impact upon bats and they are not considered a constraint.

Otter

6.27. No evidence of otter or potential holt locations were identified during the survey and no records within the last 10 years were provided by COFNOD, therefore it is not expected that the proposals will impact upon otter and they are not considered a constraint.

Hazel Dormouse

6.28. No dormice or evidence of dormice was identified during the survey and no records are present within 2km of the site.

6.29. Dormouse prefer species rich hedgerow. The hedgerows on site are species poor and are low suitability for dormice.

6.30. It is therefore expected that the proposals are unlikely to impact hazel dormouse and they are not a constraint.

Invertebrates

6.31. No notable invertebrate species were recording during the site survey and no site-specific records for invertebrates were noted (within the sources consulted) during the preceding ten years. The majority of invertebrate records fall out with the site boundary and relate to Fenn's, Whixall and Bettisfield Mosses NNR / SSSI.

6.32. Small white butterflies were recorded foraging during the site survey; however, they are common, widespread and are thus of low concern.

6.33. It is therefore not expected that the reservoir proposals would impact any notable invertebrate species and they are not considered a constraint.

Habitats

Veteran Trees

6.35. Veteran trees are an irreplaceable habitat therefore, the retention of the veteran ash and oak highlighted on the north-east boundary is strongly advised and removal should be treated as a last resort.

6.36. It is not expected that the removal of the highlighted veteran trees is required as part of the proposals, however, should they require removal then further surveys by a suitably qualified ecologist specific to bats, including a Ground Level Tree Assessment (GLTA) and subsequent presence / absence surveys depending on the outcome of the GLTA are recommended.

Buildings

6.37. The building is of little or no biodiversity value, as shown by the distinctiveness score of 0.

6.38. The water storage building has negligible potential to support any notable wildlife and therefore the removal of the building to accommodate the reservoir plans is not expected to have any negative impact and is not a constraint.

Polyculture Horticultural Land

6.39. The polyculture horticulture parcels of land on site were of limited biodiversity value as shown by the distinctiveness score of 2 and featured no notable floral species.

6.40. The removal of this habitat as part of reservoir plans requires no further consideration and is not expected to have any negative impact and is not a constraint.

Ponds

6.41. The pond is a semi-natural habitat, albeit a non-priority habitat, with significant wildlife benefit, as shown by the distinctiveness score of 4.

6.42. The pond adjacent to the north-east boundary is not expected to be impacted by any of the reservoir proposals and thus requires no further consideration from a habitat perspective and is not considered a constraint.

Other Wetlands

6.43. The area of 'other wetland' is likely to be removed as part of the reservoir proposals. However, this is not expected to have a significant impact on the biodiversity of the site as the area is so small it offers negligible habitat or benefit to biodiversity in its current form.

6.44. The creation of a reservoir would likely negate any loss of this habitat.

7. POST-WORK HABITAT IMPROVEMENT PLANS

7.1. Post construction, Maelor Forest Nurseries have demonstrated a committal to ensuring the land surrounding the reservoir is improved for biodiversity. The following recommendations are an initial idea and consultation will be required to finalise a plan. A mock example plan can be seen in Appendix 4.

7.2. Potential recommendation for improvements comprise:

- Planting of species rich native hedgerow, offset from the reservoir edge by approximately 5m, which connects to existing hedgerow on site.
- The creation of graded habtiats to the north of the reservoir, with a mosaic of grassland and scrub, culminating in a native broadleaf woodland.
- Creation of a 'wetland' to the south of the reservoir comprising a network of shallow pools. Vegetation should be allowed to regenerate naturally.

7.3. A species rich native hedgerow is defined as those which contain 5 or more native wood species on average in a 30-metre length. Species considered suitable for hedgerows include:

- Hawthorn
- Hazel *Corylus avellana*
- Alder *Alnus glutinosa*
- Willow *Salix sp.*
- Blackthorn *Prunus spinosa*
- Field Maple *Acer campestre*
- Holly
- Dog Rose *Rosa canina*
- Dogwood *Cornus sanuinea*
- Pedunculate Oak *Quercus robur*
- Hornbeam *Carpinus betulus*
- Ash
- Birch *Betula sp.*
- Elder
- Gorse *Ulex europaeus*

7.4. A healthy hedgerow are those which are dense, around 3m in height and features frequent healthy stems.

7.5. Consultation with Forest Research's Ecological Site Classification Tool (ESC) suggest the following species would be suitable for native broadleaf woodland on site, with ecological benefits as a priority:

- Aspen *Populus tremula*
- Pedunculate Oak
- White Willow *Salix alba*
- Downy Birch *Betula pubescens*
- Alder
- Hornbeam
- Small-leaved lime *Tilia cordata*
- Wild Cherry *Prunus avium*

7.6. Creation of wetland scrapes should be less than one metre in depth, with shallow and deep areas to allow for a range of conditions / access for wildlife. The natural water retention as a result will potentially lead to a wetter range of vegetational species suitable for that environment.

8. REFERENCES

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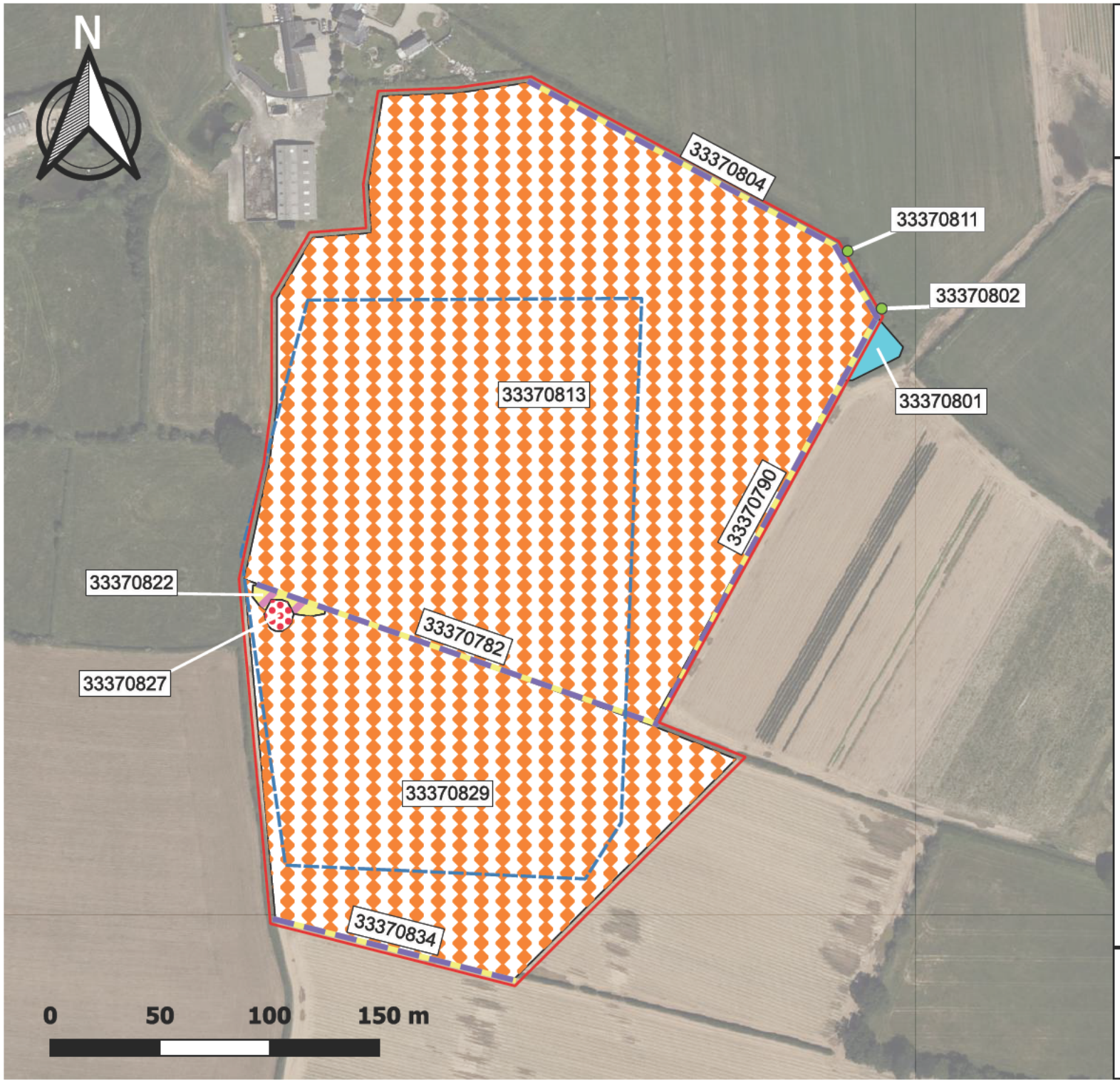
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9. APPENDICES

Appendix 1 - Preliminary Ecological Survey Map



Maelor Forest Nurseries Preliminary Ecological Survey Map

Legend

- Maelor Reservoir RLB
- Maelor Reservoir Footprint

UKHab Habitats

- Veteran Tree
- Other Native Hedgerow
- Polyculture Horticulture
- Other Wetland
- Other Standing Water
- Building

All features are labelled with their unique Polygon ID Refrence Number

Author: Jack Dunn
Map Drawing Date: 01/10/2026
Survey Date: 20/08/2026
Surveyor: Jack Dunn

Tilhill Forestry
BSWGROUP member of binderholz

Appendix 2 – Legislation

Protected Species Legislation

European Protected Species

European Protected Species (EPS) in the UK are animals and plants that receive special protection in England and Wales under the **Conservation of Habitats and Species Regulations 2017 (as amended)** and in Scotland under the **Conservation (Natural Habitats, &c.) Regulations 2019 (as amended)**, which implement the **EU Habitats Directive**. These species are listed in Annex IV of the Directive and are protected due to their conservation importance across Europe. The legislation states that it is an offence to:

- deliberately capture, injure or kill any wild animal of a European protected species,
- deliberately disturb wild animals of any such species,
- deliberately take or destroys the eggs of such an animal, or
- damage or destroy a breeding site or resting place of such an animal,
- be in possession of or to control, to transport, to sell or exchange, to offer for sale or exchange any such an animal.

Animals protected under this legislation in the UK include the following relevant to forestry operations:

- All bats,
- Eurasian Beaver,
- Wild Cat,
- Hazel Dormouse,
- Sand Lizard,
- Great Crested Newt,
- Otter,
- Smooth Snake,
- Natterjack Toad,
- Pool frog

Wildlife and Countryside Act 1981 (as amended) Section 9, Schedule 5 and Schedule 9

Section 9 of the WACA 1981 (as amended) states that it is an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any animal listed under Schedule 5,
- Intentionally or recklessly damage or destroy and structure or place used for shelter or protection by such an animal,
- Intentionally or recklessly disturb any such animal whilst it is occupying a structure or place which it uses for shelter or protection,
- Intentionally or recklessly obstructs access to any structure or place which any such animal uses for shelter or protection.

Animal listed under Schedule 5 of the WACA 1981 (as amended) relevant to forestry operations include:

- Adder, sand lizard, common lizard, slow-worm, smooth snake,
- All bats,
- Wildcat,
- Hazel dormouse,
- White clawed crayfish,
- Freshwater pearl mussel,
- Great-crested newt, palmate newt, smooth newt, common frog, common toad, natterjack toad,
- Pine marten,
- Otter,
- Red squirrel,
- Water vole.

Invasive / Non-Native Fauna

Invasive and Non-Native fauna species are listed under **Schedule 9 of the Wildlife and Countryside Act 1981** for which it is an offence to release or allow to escape into the wild any animal which is:

- not ordinarily resident in and is not a regular visitor to Great Britain in a wild state; or
- is included in Schedule 9.

[redacted]

Priority Species and Habitats

Natural Environment and Rural Communities Act (NERC) 2006 (England)

The **Natural Environment and Rural Communities Act 2006** (NERC Act) includes a list of 56 habitats and 943 species, first identified as priority habitats and species under the UK Biodiversity Action Plan. The list is for:

- Public Bodies – To help them meet their 'biodiversity duty' to be aware of biodiversity conservation in their policy or decision making
- landowners – to inform their nature recovery planning, action and funding applications
- funding bodies – to support suitable nature recovery

Environment (Wales) Act 2016

Section 7 of the **Environment (Wales) Act 2016** lists 69 priority habitats and 1322 priority species, first identified as priority habitats and species under the UK Biodiversity Action Plan. The Section 7 list is the statutory list of species and habitats of principal importance for the purpose of maintaining and enhancing biodiversity in Wales, established under the Environment (Wales) Act 2016. Welsh Ministers must take all reasonable steps to maintain and enhance the living organisms and types of habitats included in any list published under this section and encourage others to take such steps. Public authorities, in complying with their Section 6 duty, must "have regard" to this list when undertaking their functions, ensuring the needs of priority species and habitats are considered in decision-making.

Nature Conservation (Scotland) Act 2004 – Scottish Biodiversity List (SBL)

The Scottish biodiversity list, revised in 2025, is a list of species and habitats important to furthering the conservation of biodiversity, as required by the Nature Conservation (Scotland) Act 2004. The first list was published in 2005 with revisions in 2007 and 2012.

The SBL covers 85 habitats and 279 species across Scottish land, freshwater and seas.

It supports delivery of the statutory Biodiversity Duty on public bodies and helps identify priorities and inform actions relevant to restoring and regenerating biodiversity.

The list will contribute to delivering the biodiversity strategy's outcomes and Scotland's contribution to the UN CBD's Global Biodiversity Framework.

Breeding Birds

The Conservation of Habitats and Species Regulations 2017 (as amended), known as the Habitat Regulations bring, into English and Welsh law, elements of the EU Wild Birds Directive, and provides for the designation and protection of 'European sites' (Special Areas of Conservation (SACs), Special Protection Areas (SPAs)), the protection of 'Annex 1 European species' and the adaptation of planning and other control measures associated with the protection of European sites. **Annex 1 of the Birds Directive** lists bird species which are protected due to:

- being in danger of extinction;
- vulnerable to specific changes in their habitats;
- considered rare due to small populations or restricted local distribution; an
- those requiring particular attention for reasons of the specific nature of their habitat requirements.

Member states of the Birds Directive are required to ensure the conservation of the most suitable habitats for these species through the designation, management and monitoring of SPA's.

The Habitat Regulations additionally requires that the Habitat Regulations Assessment process be implemented where a project may impact a European Site.

Convention on Wetlands (Ramsar Convention)

The Ramsar Convention provides an international framework for the conservation and 'wise use' of wetlands and their resources. In particular it enables the designation of wetlands of international importance (Ramsar Sites) in accordance with the criteria defined within the legislation. These criteria consist of two groups: Group A which requires a site to contain representative, rare or unique wetland types and Group B which requires a site to be of international importance for conserving biological diversity.

Specific criteria within Group B which relate to water birds state:

- Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more water birds.
- Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of water bird.

The Wildlife and Countryside Act 1981 (as amended) protects all wild birds, their nests and eggs. Under this legislation a person shall be guilty of an offence if they intentionally (or recklessly in Scotland):

- kill, injure or take any wild bird,
- take, damage or destroy (or otherwise interfere with in Scotland) the nest of any wild bird while that nest is in use or being built;
- obstruct or prevent any wild bird from using its nest (Scotland)
- take or destroy an egg of any wild bird;
- have in possession or control any lice or dead wild bird or any part of, or anything derived from, such a bird; and
- have in their possession or control an egg of a wild bird or any part of such an egg.

Additional protection is also permitted to Schedule 1, Schedule 1A and Schedule A1 species:

- **Schedule 1 species** - In addition to the protection from killing or taking that all birds, their nests and eggs have under the Wildlife and Countryside Act 1981. Schedule 1 birds and their dependent young must not be disturbed at nest sites. Nor must any species included in Schedule 1 which leks be intentionally or recklessly disturbed (Scotland) while lekking.
- **Schedule 1A species (Scotland Only)** - Hen Harrier, Red Kite, White-tailed Eagle and Golden Eagle are afforded further protection and must not be harassed (repeatedly disturbed) in any location at any time of year and are referred to as Schedule 1A species.
- **Schedule A1 and ZA1 Species** - Whilst nest sites of ALL wild birds are protected from damage, destruction (or interference – Scotland only) whilst being built or when occupied, further protection is afforded to nests of Schedule A1 species, which are protected year-round and it's an offence to intentionally or recklessly take, damage, destroy or interfere at any time with a nest habitually used by any of these species. These species are:
  - Scotland (A1)
    - Golden Eagle
    - White Tailed Eagle
  - England and Wales (ZA1)
    - Golden Eagle
    - White Tailed Eagle
    - Osprey
  - In Scotland, an offence is also committed if you have knowledge of an illegal act against a Schedule 1 species and permit it to continue.

Flora

EPS plant species are listed under **Schedule 5 of the Conservation of Habitats and Species Regulations 2017**, under the act is an offence to:

- deliberately pick, collect, cut, uproot or destroy them; and
- possess, control or transport them (alive or dead).

The Wildlife and Countryside Act 1981 (as amended) states it is an offence to intentionally uproot any wild plant without the landowners consent. **Schedule 8 of the Wildlife and Countryside Act 1981 (as amended)** lists endangered plants, fungi and lichen which under the act it is unlawful to:

- intentionally pick, uproot, or destroy the wild plant
- sell, offer or expose for sale
- be in possession of or transport for the purpose of selling

Invasive / Non-Native Flora

Invasive and Non-Native flora species are listed under Schedule 9 of the Wildlife and Countryside Act 1981 for which it is an offence to plant or otherwise cause to grow in the wild any plant listed under Schedule 9.

Habitats and Statutory Sites Legislation

EU Habitats Directive

The 'Conservation of Habitats and Species Regulations 2017 (as amended)' in England and Wales and the 'Conservation (Natural Habitats &c.) Regulations 1994 (as amended)' in Scotland transpose the EU Habitats and Wildbirds Directives into UK Law. Under the regulations, sites of significant and international importance are protected through designations such as Special Areas of Conservation (SAC's) and Special Protection Areas (SPA's), designated for breeding / resting sites of threatened species or areas of protected habitats as outlined in Annex 1 of the Wild Birds Directive and Annex 2 of the EU Habitats Directive. Annex 4 lists animal and plant species of community interest in need of strict protection; these species are classed as EPS.

Wildlife and Countryside Act 1981 (as amended)

Under the act, the country conservation bodies have a duty to notify any area of land which is of special interest by reason of any of its known flora, fauna or geological or physiographical features and are known as Sites of Special Scientific Interest (SSSI's).

Red Lists

Red lists are a globally recognised identification of the threat of extinction to certain species, developed by the International Union for Conservation (IUCN). Great British red lists are completed for several species groups (such as the BTO Birds of Conservation Concern, Mammal Society Red List of Mammals) and listed in the JNCC spreadsheet of species conservation designations.

Appendix 3 – Full Bird Records

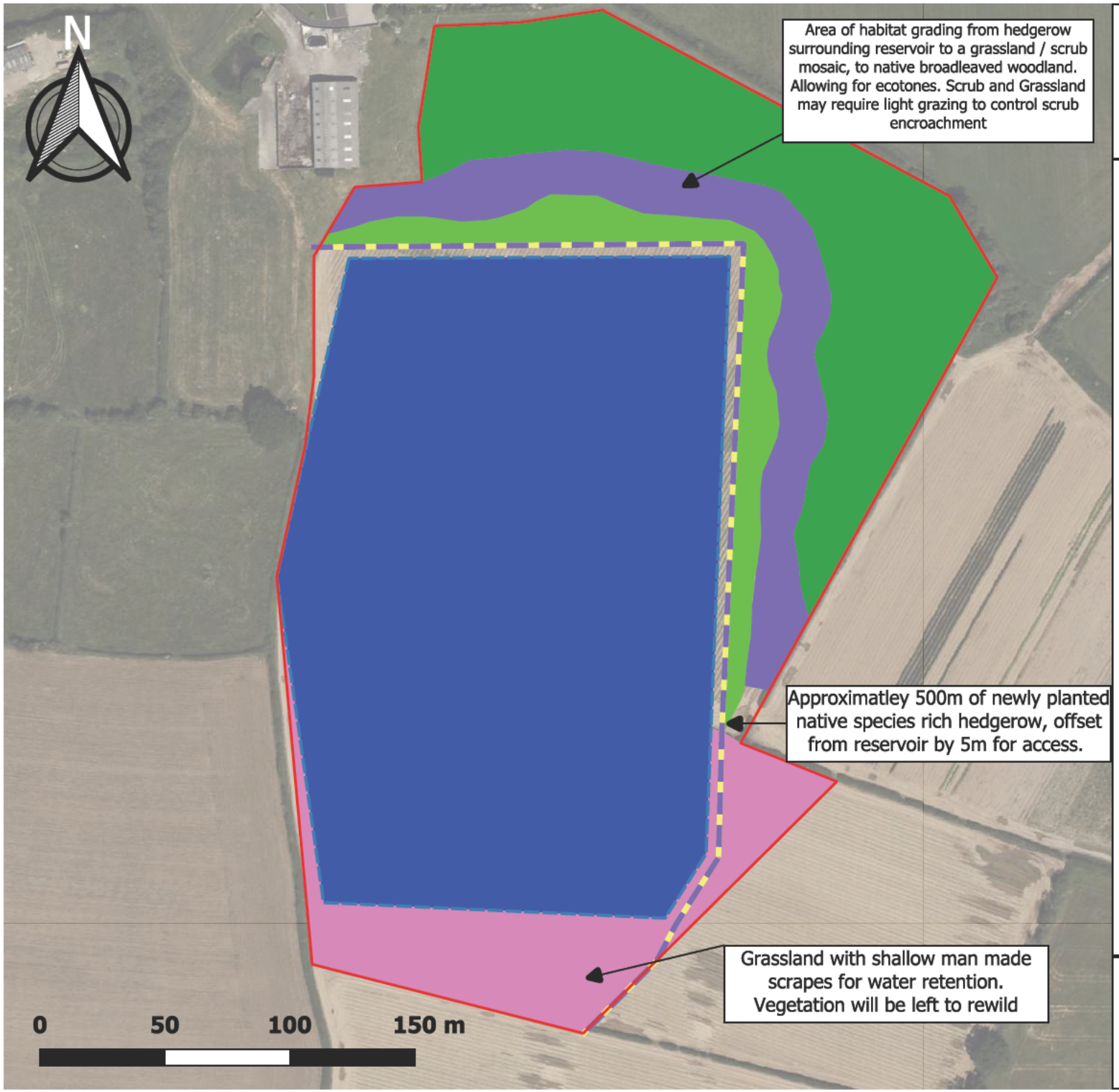
Scientific Name	English Name	Welsh Name	Earliest Year	Latest Year	Total Records
Acanthis flammea cabaret	Lesser Redpoll	Llinos Bengoch Fechan	2016	2023	17
Acanthis flammea flammea/rostrata	Common (Mealy) Redpoll	Llinos Bengoch	2017	2017	1
Accipiter nisus	Sparrowhawk	Gwalch Glas	2018	2025	13
Acrocephalus schoenobaenus	Sedge Warbler	Telor yr Hesg	2019	2025	6
Actitis hypoleucos	Common Sandpiper	Pibydd y Dorlan	2021	2024	7
Alauda arvensis	Skylark	Ehedydd	2017	2025	24
Alcedo atthis	Kingfisher	Glas y Dorlan	2022	2025	7
Anas acuta	Pintail	Hwyaden Lostfain	2016	2025	7
Anas crecca	Teal	Corhwyaden	2017	2025	87
Anas platyrhynchos	Mallard	Hwyaden Wyllt	2017	2025	53
Anser anser	Greylag Goose	Gwydd Wyllt	2017	2025	17
Anser brachyrhynchus	Pink-footed Goose	Gwydd Troetbinc	2022	2025	5
Anthus pratensis	Meadow Pipit	Corhedydd y Waun	2017	2025	88
Anthus spinoletta	Water Pipit	Corhedydd y Dwr	2016	2021	3
Anthus trivialis	Tree Pipit	Corhedydd y Coed	2016	2023	6
Apus apus	Swift	Gwennol Ddu	2019	2024	17
Ardea alba	Great White Egret	Crëyr Mawr Gwyn	2018	2023	2
Ardea cinerea	Grey Heron	Crëyr Glas	2018	2025	15
Asio flammeus	Short-eared Owl	Tylluan Glustiog	2017	2025	15
Astur gentilis	Goshawk	Gwalch Marthin	2019	2019	1
Aythya marila	Scaup	Hwyaden Benddu	2020	2020	1
Calidris alpina	Dunlin	Pibydd y Mawn	2016	2016	2
Caprimulgus europaeus	Nightjar	Troellwr Mawr	2017	2025	50
Cettia cetti	Cetti's Warbler	Telor Cetti	2022	2023	4
Charadrius dubius	Little Ringed Plover	Cwtiad Torchog Bach	2021	2025	4
Charadrius hiaticula	Ringed Plover	Cwtiad Torchog	2016	2016	3
Chloris chloris	Greenfinch	Llinos Werdd	2022	2025	9
Chroicocephalus ridibundus	Black-headed Gull	Gwylan Benddu	2018	2025	33
Circus aeruginosus	Marsh Harrier	Boda'r Gwerni	2021	2025	26
Circus cyaneus	Hen Harrier	Boda Tinwyn	2017	2025	27
Columba oenas	Stock Dove	Colomen Wyllt	2017	2025	53
Columba palumbus	Woodpigeon	Ysguthan	2018	2025	39
Corvus frugilegus	Rook	Ydfran	2019	2025	14
Coturnix coturnix	Quail	Sofliar	2017	2017	1
Cuculus canorus	Cuckoo	Cog	2017	2025	18
Curruca communis	Whitethroat	Llwydfron	2018	2025	34
Delichon urbicum	House Martin	Gwennol y Bondo	2016	2025	36
Emberiza calandra	Corn Bunting	Bras yr Yd	2022	2025	2

Emberiza citrinella	Yellowhammer	Bras Melyn	2018	2018	1
Emberiza schoeniclus	Reed Bunting	Bras y Cyrs	2017	2025	71
Falco columbarius	Merlin	Cudyll Bach	2017	2025	18
Falco peregrinus	Peregrine	Hebog Tramor	2018	2024	7
Falco subbuteo	Hobby	Hebog yr Ehedydd	2018	2025	14
Falco tinnunculus	Kestrel	Cudyll Coch	2017	2025	48
Fringilla coelebs	Chaffinch	Ji-Binc	2018	2025	19
Fringilla montifringilla	Brambling	Pinc y Mynydd	2021	2024	5
Fulica atra	Coot	Cwtiar	2022	2025	6
Gallinago gallinago	Snipe	Gïach Cyffredin	2017	2025	53
Gallinula chloropus	Moorhen	Iar Ddwr	2018	2025	16
Grus grus	Crane	Garan	2024	2025	2
Haematopus ostralegus	Oystercatcher	Pioden Fôr	2016	2025	18
Haliaeetus albicilla	White-tailed Eagle	Eryr Môr	2022	2022	1
Ichthyaetus melanocephalus	Mediterranean Gull	Gwylan Môr y Canoldir	2023	2023	2
Lanius excubitor	Great Grey Shrike	Cigydd Mawr	2022	2022	1
Larus argentatus	Herring Gull	Gwylan y Penwaig	2021	2025	6
Larus fuscus	Lesser Black-backed Gull	Gwylan Gefnddu Leiaf	2019	2025	6
Linaria cannabina	Linnet	Llinos	2017	2025	55
Locustella naevia	Grasshopper Warbler	Troellwr Bach	2024	2025	3
Loxia curvirostra	Crossbill	Gylfingroes	2018	2025	2
Lymnocryptes minimus	Jack Snipe	Gïach Bach	2019	2025	15
Lyrurus tetrix	Black Grouse	Grugiar Ddu	2016	2017	3
Mareca penelope	Wigeon	Chwiwell	2024	2025	3
Mareca strepera	Gadwall	Hwyaden Lwyd	2016	2022	3
Melanitta nigra	Common Scoter	Mor-Hwyaden Ddu	2023	2023	1
Milvus milvus	Red Kite	Barcud	2018	2025	39
Motacilla cinerea	Grey Wagtail	Siglen Iwyd	2020	2025	11
Motacilla flava	Yellow Wagtail		2016	2025	8
Motacilla flava flavissima	Yellow Wagtail	Siglen Felen	2016	2016	2
Muscicapa striata	Spotted Flycatcher	Gwybedog Mannog	2016	2025	15
Numenius arquata	Curlew	Gylfinir	2017	2025	66
Numenius phaeopus	Whimbrel	Coegylfinir	2025	2025	2
Oenanthe oenanthe	Wheatear	Tinwen y Garn	2019	2025	8
Passer domesticus	House Sparrow	Aderyn y To	2022	2024	3
Perdix perdix	Grey Partridge	Petrisen	2016	2016	1
Periparus ater	Coal Tit	Titw Penddu	2016	2025	21
Phalaropus fulicarius	Grey Phalarope	Llydandroed Llwyd	2021	2021	1

Phoenicurus phoenicurus	Redstart	Tingoch	2017	2025	10
Phylloscopus trochilus	Willow Warbler	Telor yr Helyg	2018	2025	39
Pica pica	Magpie	Pioden	2018	2025	27
Picus viridis	Green Woodpecker	Cnocell Werdd	2017	2020	7
Platalea leucorodia	Spoonbill	Llwybig	2016	2016	4
Podiceps cristatus	Great Crested Grebe	Gwyach Fawr Gopog	2019	2019	1
Poecile montanus	Willow Tit	Titw'r Helyg	2016	2019	2
Poecile palustris	Marsh Tit	Titw'r Wern	2018	2025	6
Prunella modularis	Dunnock	Llwyd y Gwrych	2019	2025	55
Pyrrhula pyrrhula	Bullfinch	Coch y Berllan	2017	2025	11
Rallus aquaticus	Water Rail	Rhegen Ddwr	2019	2025	13
Regulus ignicapilla	Firecrest	Dryw Penfflamgoch	2024	2024	1
Regulus regulus	Goldcrest	Dryw Eurben	2017	2025	20
Saxicola rubetra	Whinchat	Crec yr Eithin	2018	2022	3
Scolopax rusticola	Woodcock	Cyffylog	2017	2025	19
Spatula clypeata	Shoveler	Hwyaden Lydanbig	2018	2025	16
Streptopelia decaocto	Collared Dove	Turtur Dorchog	2016	2025	32
Strix aluco	Tawny Owl	Tylluan Frech	2021	2025	16
Sturnus vulgaris	Starling	Drudwen	2019	2024	12
Sylvia borin	Garden Warbler	Telor yr Ardd	2019	2025	9
Tadorna tadorna	Shelduck	Hwyaden yr Eithin	2017	2025	35
Tringa nebularia	Greenshank	Pibydd Coeswyrdd	2022	2022	1
Tringa ochropus	Green Sandpiper	Pibydd Gwyrdd	2021	2022	2
Tringa totanus	Redshank	Pibydd Coesgoch	2016	2017	3
Troglodytes troglodytes	Wren	Dryw	2017	2025	51
Turdus iliacus	Redwing	Coch Dan Adain	2017	2025	22
Turdus philomelos	Song Thrush	Bronfraith	2018	2025	22
Turdus pilaris	Fieldfare	Socan Eira	2017	2025	24
Turdus viscivorus	Mistle Thrush	Brych y Coed	2017	2020	7
Tyto alba	Barn Owl	Tylluan Wen	2016	2025	10
Vanellus vanellus	Lapwing	Cornchwiglen	2017	2025	43

Appendix 4 – Mock Habitat Improvement Plan

Maelor Forest Nurseries
Mock Habitat Development Plan



Legend

- Maelor Reservoir RLB
- Maelor Reservoir Footprint

UKHab

- Grassland
- Woodland and Forest
- Heathland and Scrub
- Wetland
- Native Hedgerow

Author: Jack Dunn

Map Drawing Date: 05/10/2026

Tilhill Forestry

BSWGROUP member of binderholz