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WONDERFUL ON TAP

SEVERN TRENT

Severn Trent - Fromes Hill
Preliminary Ecological Assessment, Preliminary Roost Assessment and Badger Survey

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	Name	CIEEM grade	Date of action taken
Field surveyor	Evie Hyland	Associate	29/01/2024
Author of the Report	Evie Hyland	Associate	31/01/2024
Peer Reviewer	Laura Meer	Full	07/02/2024
Peer Approver	Leanne Wall	Associate	08/02/2024

1. Introduction and Brief

Severn Trent Ltd required a Preliminary Ecological Appraisal to support planning permission for the expansion and redevelopment of treatment works at Severn Trent Fromes Hill site, near Ledbury, Herefordshire. Assessments of the site to support badgers and roosting bats were also made during the visit. The date of works are currently unknown. The proposals described above are hereafter referred to collectively as 'the development'.

The site (Central Grid Reference: SO 68261 46612) is located east of the village Fromes Hill, surrounded by arable fields. The area will be referred to as "the site" and is detailed in Figure 1.

Severn Trent Ltd commissioned Thomson Environmental Consultants Ltd on 18th January 2024 to undertake a Preliminary Ecological Appraisal (PEA) of the site. The brief was to provide:

- An ecological desk study including identification of statutory and non-statutory designated sites within 2km of the study area and records of protected species and species of conservation concern within 1km of the study area, using data purchased from the Local Biological Record Centre;
- Undertake an extended UK Habitat Classification Survey. Habitats and species observed on site will be recorded and mapped and the potential for habitats on site to support protected species will be assessed;
- Undertake Ground Level Tree Assessments (GTRAs) of all trees on the site and a buffer of 30m, recording potential bat roosting features and categorising their suitability to support bats in line with best practice guidance (Collins, ed. 2023);
- Undertake a walkover of the site and a buffer of 30m to look for evidence of badgers and record any findings, such as setts, latrines, hairs or digging;
- A report supported by appropriate digitised mapping that details the methods used to undertake the assessment and results of the desk study and extended UK Habitat Classification survey. The report will include consideration of any relevant legislation and planning policies, with recommendations for necessary compliance measures;
- Outline recommendations for any further surveys that are required to support the planning application.

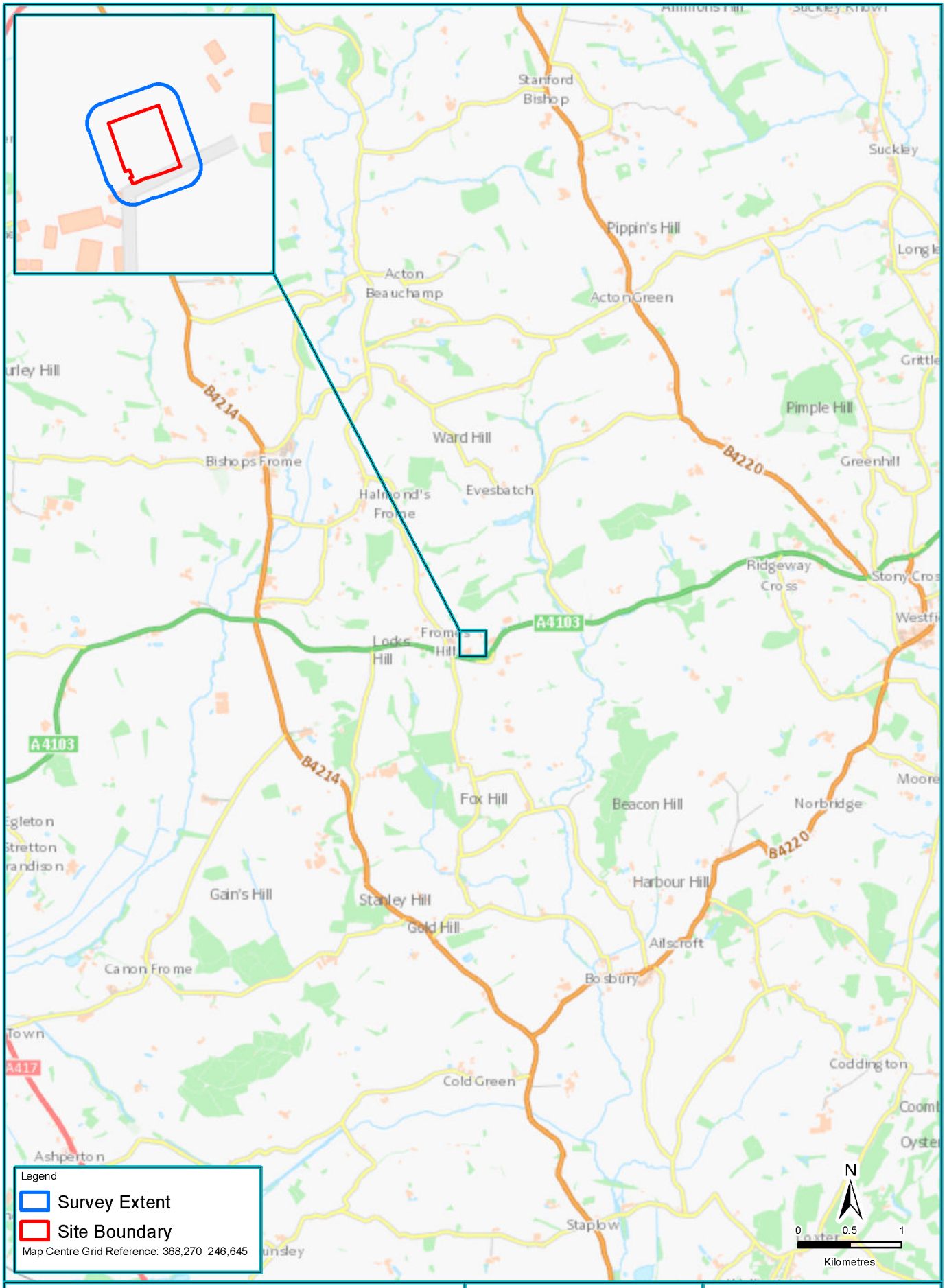
The objective of a PEA is to identify any known or potential ecological constraints for the proposed works, identify any requirements for further ecological surveys and provide outline recommendations for avoidance, mitigation, compensation and enhancement measures as appropriate.

2. Recommendations Summary

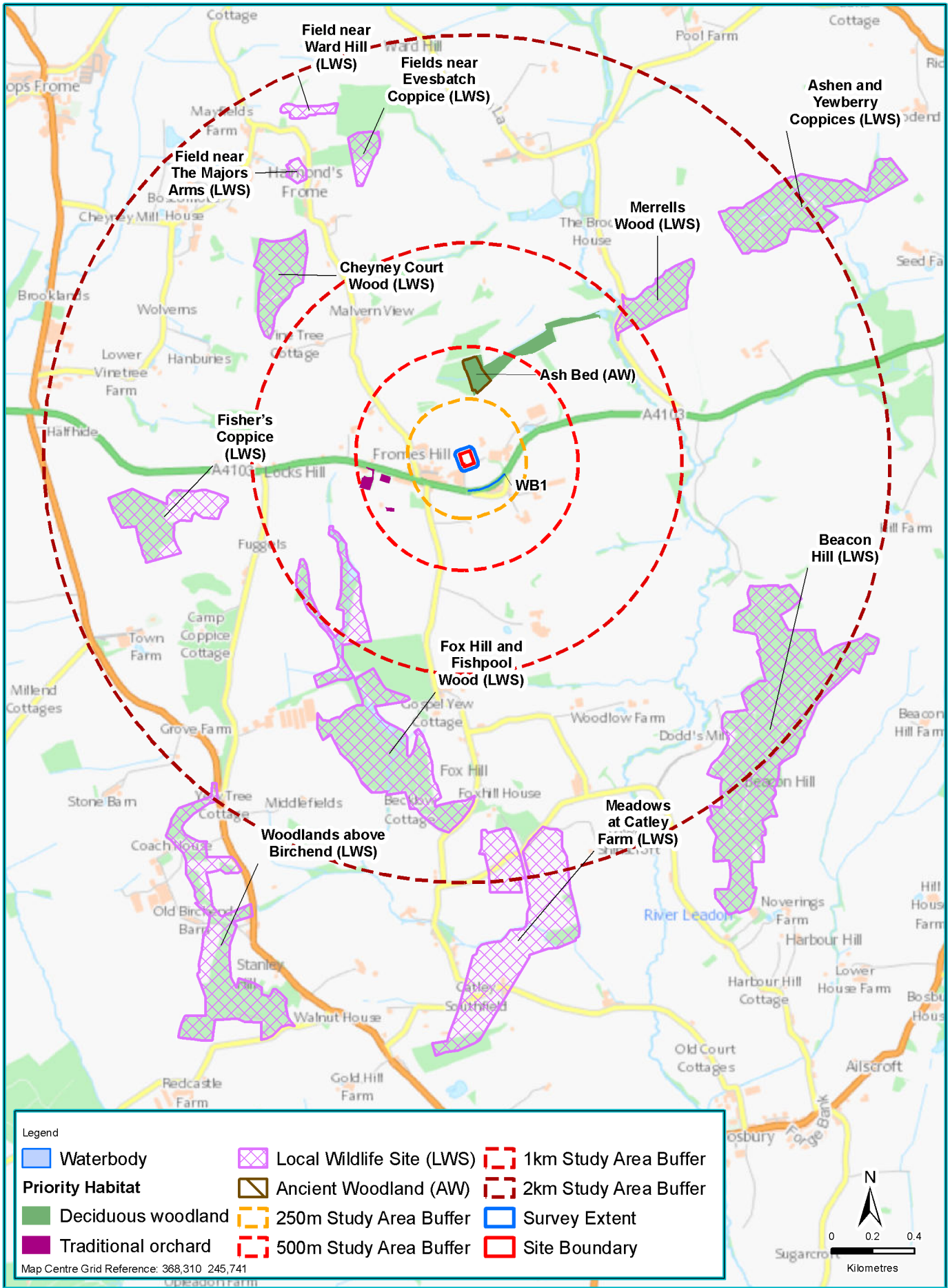
Criteria used in the table below- Needs to be actioned:	
Before the work can proceed – *(a licence/permission is required which means that the project can only proceed when obtained)*	
ECOW input during the project to ensure compliance. or prior to the works to check for changes, or may require additional advice during the works	
Best practice guidance in delivery of the work	

Ecological Feature	Timing of any actions	Section	Risk
1. Non-statutory Designated Sites	-	4	
2. Statutory Designated Sites	-	4	
3. Waterbodies	-	4	
4. Priority Habitats	-	4	
5. Ancient Woodland	-	4	
6. Bats	Endoscope survey - any time of year	4/5	
7. Great crested newt	HSI (any time of year) and eDNA (mid-April – beginning of July)	4/5	
8. Badger	Badger survey within three months of work commencing.	4/5	
9. Dormouse	Habitat suitability assessment	5	
10. Reptiles - if hedgerow/woodland/grassland vegetation removal is required to facilitate works	ECoW – immediately prior to de-veg	4/5	
11. Common amphibians	ECoW – immediately prior to de-veg	4/5	
12. Nesting birds – if removal of suitable habitat is required to facilitate works or disturbance to suitable barn owl nesting habitat likely	ECoW works if in breeding bird season (March - August, inclusive)	4/5	
13. Priority and other mammals – rabbit burrows present	ECoW – hand dig	4/5	
14. Otter, water vole and white-clawed crayfish	-	4/5	
15. INNS – Recommended further survey at optimal time to year (April – October)	INNS survey between April - October	4/5	

3. Maps



Client: Severn Trent		Drawing Ref: SEV001-014/404371/1	Thomson environmental consultants www.thomsonec.com enquiries@thomsonec.com
Figure Number: 1		Scale at A4: 1:50,000	
Figure Title: Site Location	Drawn: SC Date: 24/01/2024	Checked: AS Date: 24/01/2024	



Client: Severn Trent		Drawing Ref: SEV001-014/404372/1	
Figure Number: 2		Scale at A4: 1:25,000	
Figure Title: Site Location, Study Area and Desk Study Results		Drawn: SC	Checked: AS
		Date: 25/01/2024	Date: 25/01/2024

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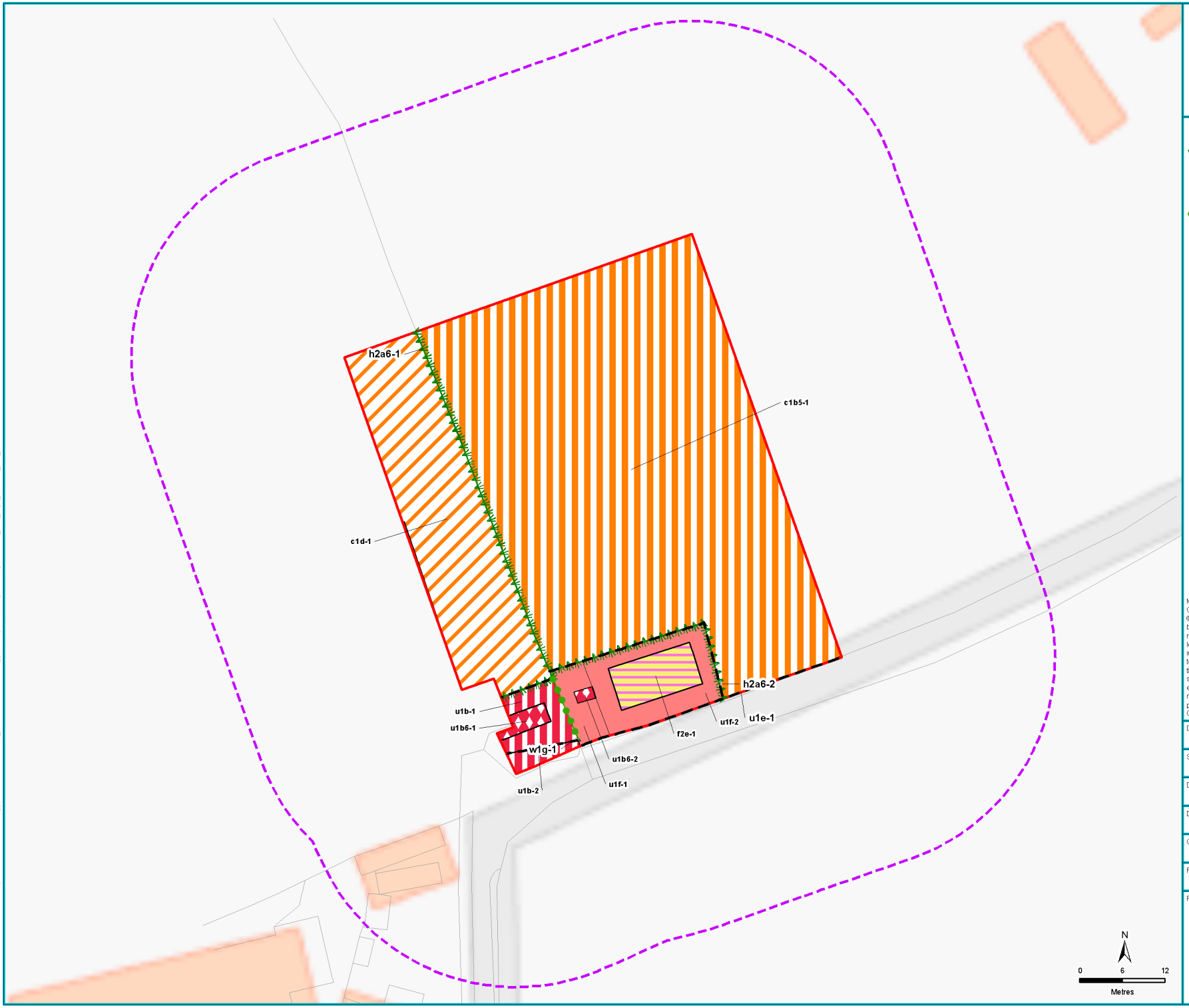

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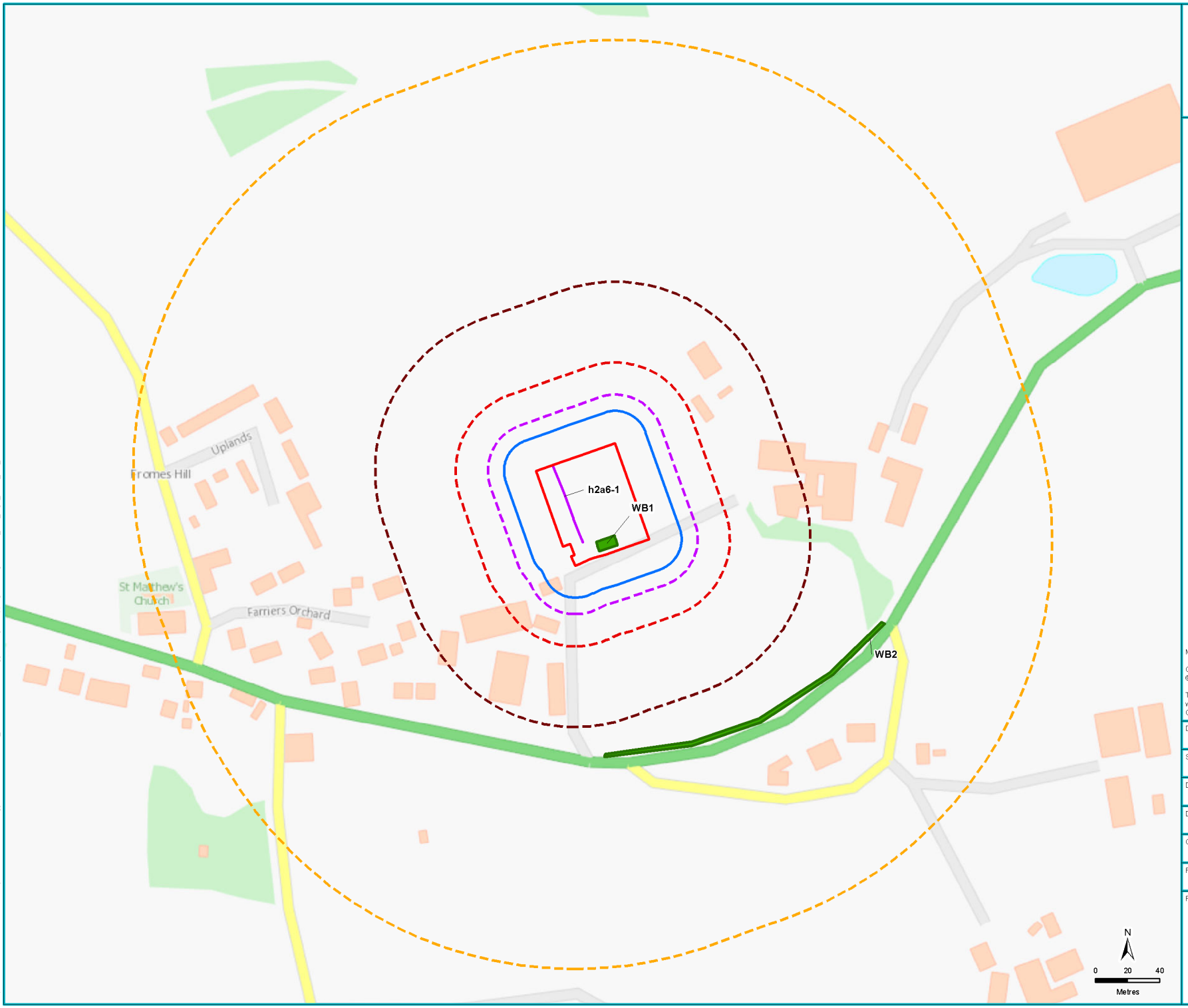
Legend

- h2a6 - Other Native Hedgerow
- u1e - Built Linear Features
- w1g - Other Broadleaved Woodland
- c1b5 - Rye-grass and Clover Ley
- c1d - non-cereal crops
- f2e - Reedbeds
- u1b - Developed Land, Sealed Surface
- u1b6 - Other Developed Land
- u1f - Sparsely Vegetated Urban Land
- 30m Study Area Buffer
- Site Boundary

Map Centre Grid Reference: 368,270 246,645

Drawing Ref	SEV001-014/404419/1
Scale at A3	1:500
Drawn: MA	Checked: AS
Date: 31/01/2024	Date: 31/01/2024
Client	Severn Trent
Figure Number	3
Figure Title	UK Habitat Classification Survey Results

Filepath: \\thomson.int\Data\Live Projects\Terrestrial Ecology\Leeds\SEV001-014_1 - Fromes Hill Ecology Surveys\Mapping\Working\SEV001_014_Fig3_UKHab_MA_310124.mxd



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Legend

Waterbodies

- Screened In
- Screen Out
- 30m Study Area Buffer
- 50m Study Area Buffer
- 100m Study Area Buffer
- 250m Study Area Buffer
- Survey Extent
- Site Boundary

Map Centre Grid Reference: 368,270 246,645

Drawing Ref	SEV001-014/404373/1
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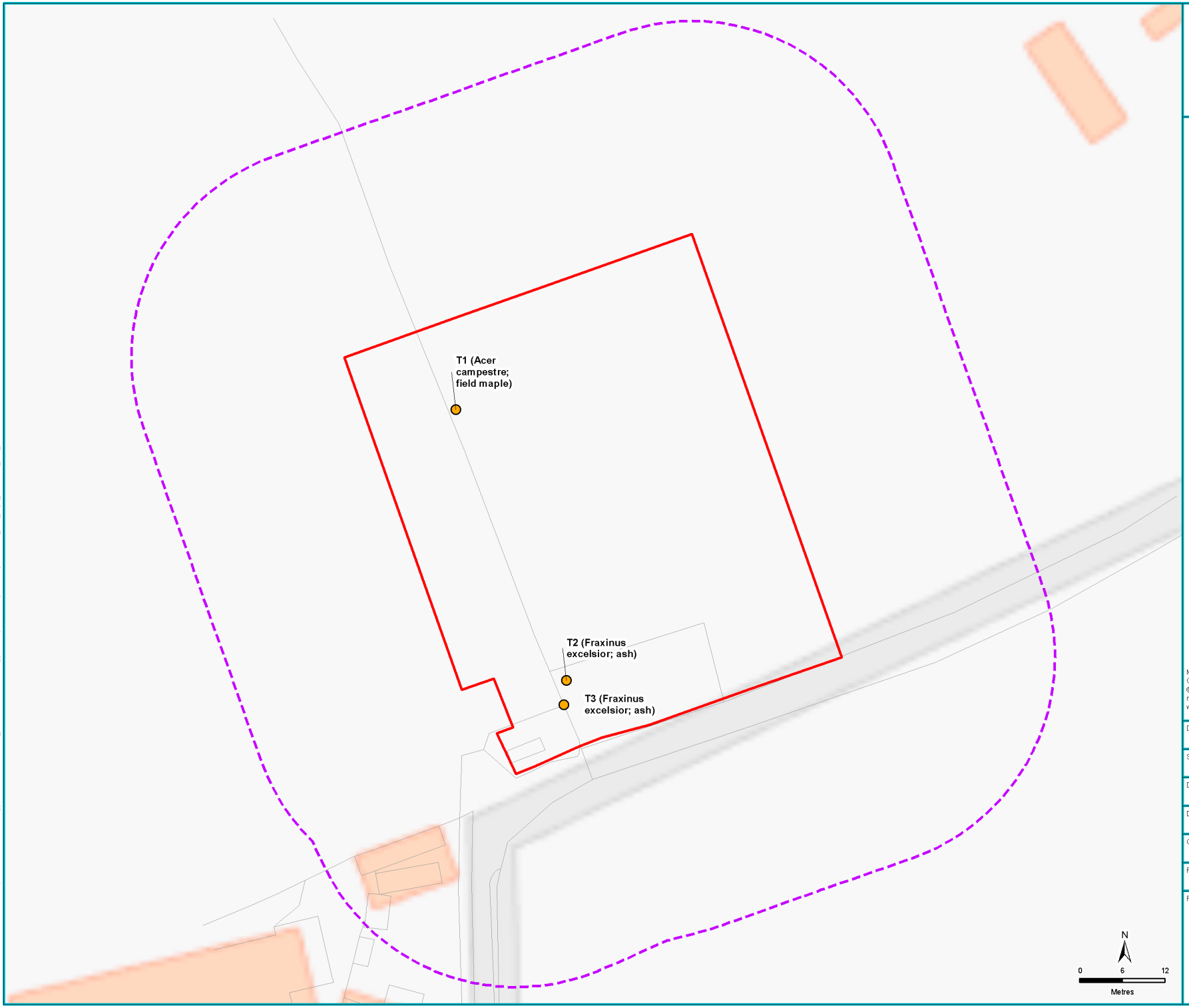
Date: 25/01/2024	Date: 25/01/2024
Client	Severn Trent
Figure Number	4
Figure Title	GCN Waterbodies

Filepath: \\thomson.int\Data\Live Projects\Terrestrial Ecology\Leeds\SEV001-014_1 - Fromes Hill Ecology Surveys\Mapping\Working\SEV001_014_Fig4_GCN_SC_250124.mxd



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Legend

- Further Assessment Required (FAR)
- 30m Study Area Buffer
- Site Boundary

Map Centre Grid Reference: 368,270 246,645

Drawing Ref	SEV001-014/404420/1
Scale at A3	1:500
Drawn	MA
Checked	AS
Date	31/01/2024
Date	31/01/2024
Client	Severn Trent
Figure Number	5
Figure Title	Bat Ground Level Tree Roost Assessment

Filepath: \\thomson.int\Data\Live Projects\Terrestrial Ecology\Leeds\SEV001-014_1 - Fromes Hill Ecology Surveys\Mapping\Working\SEV001_014_Fig5_BGLTRA_MA_310124.mxd

4. Evaluation of the combined field survey findings & desk-based research, with project specific advice.

Table 1 Summary of UK habitats and their areas

Habitats main code	Secondary codes	Amount (Ha)
c1d-1 Non cereal crops	-	0.06
c1b5-1 Rye-grass and clover ley	-	0.23
f2e-1 Reedbeds	-	0.01
u1b-1 Developed land, sealed surface	-	0.01
u1b-2 Developed land, sealed surface	800 – Road	0.002
u1b6-1 Other developed land	-	0.002
u1b6-2 Other developed land	-	0.0001
u1f-1 Sparsely Vegetated Urban Land	510 – Bare ground	0.01
u1f-2 Sparsely Vegetated Urban Land	-	0.01

Table 2 Summary of Linear UK habitats and lengths

Habitats main code	Secondary codes	Amount (Km)
h2a6-1 Other native hedgerow	32 – Scattered trees 521 - Unmanaged	0.04
h2a6-2 Other native hedgerow	10 - Scattered scrub 32 - Scattered trees 50 - Ditch 502 – Seasonally wet	0.05
w1g-1 Other broadleaved woodland	10 – Scattered scrub 33 – Line of trees	0.01
u1e-1 Built linear features	612 - Fence	0.05

Table 3 Designated Sites, Priority Habitats, Ancient Woodland and Watercourses

Site Names.	Designations	Distance from site	Size	Interests Features
Non-statutory designated sites				
Fox Hill and Fishpool Wood	Local Wildlife Site (LWS)	0.68km	27.9ha	An area of ancient woodland with patches of conifer. Oak and ash are the dominant trees with hazel coppice. Orchids, sanicle (*Sanicula* sp.) and goldilocks buttercup (*Ranunculus auricomus*) are present in the ground flora. The site supports a large rookery and palmate newt has been recorded.
Merrells Wood	Local Wildlife Site (LWS)	0.89km	6.3ha	An ancient semi-natural woodland, mostly oak and ash, but with a good variety of other species, including holly and yew.
Cheyney Court Wood	Local Wildlife Site (LWS)	1.07km	6.3ha	An ancient semi-natural woodland, mostly oak and ash with hazel (*Corylus avellana*) coppice. Other species include holly (*Ilex aquifolium*) and cherry (*Prunus* sp.), with primrose (*Primula* sp.) present in the

				ground flora.
Fisher's Coppice	Local Wildlife Site (LWS)	1.13km	10.1ha	An ancient woodland with some larch. Oak (*Quercus robur*) and ash (*Fraxinus* excelsior) are dominant, with some hawthorn (*Crataegus monogyna*) and elder (*Sambucus nigra*).
Fields near Evesbatch Coppice	Local Wildlife Site (LWS)	1.37km	2.5ha	Two areas of unimproved pasture, one of which is also cut for hay. The rich flora includes adder's-tongue (*Ophioglossum* sp.), lady's-mantle and orchid.
Beacon Hill	Local Wildlife Site (LWS)	1.45m	46.6ha	An area of ancient woodland, some of which is still semi-natural. Oak and ash are dominate, with hazel understorey.
Field near The Majors Arms	Local Wildlife Site (LWS)	1.52km	0.8ha	An unimproved pasture, with a good range of flora which includes quaking-grass (*Briza* sp.) and burnet-saxifrage (*Pimpinella saxifraga*).
Ashen and Yewberry Coppices	Local Wildlife Site (LWS)	1.62km	16.3ha	An ancient woodland, the eastern part of which is still semi-natural, mostly ash coppice, but the western part is coniferous.
Field near Ward Hill	Local Wildlife Site (LWS)	1.75km	1.2ha	A damp unimproved pasture with some invasion by bracken (*Pteridium*) and scrub. The flora includes devil's-bit scabious (*Succisa pratensis*) and common fleabane (*Erigeron*). The small pond has abundant stonewort (*Charales* sp.).
Meadows at Catley Farm	Local Wildlife Site (LWS)	1.75km	28.4ha	A series of unimproved pastures and hay meadows, with some marshland. The rich flora includes ragged-robin (*Silene flos-cuculi*), marsh valerian (*Valeriana dioica*) and marsh cinquefoil (*Comarum palustre*). Breeding birds such as curlew (*Numenius arquata*), lapwing (*Vanellus vanellus*) and reed bunting (*Emberiza Schoeniclus*) have been recorded, and the site is noted for its rich invertebrate fauna.
Woodlands above Birchend	Local Wildlife Site (LWS)	1.93km	20.5ha	An area of ancient woodland, some of which is still semi-natural. Birchend is in two distinct parts. One area is dominated by ash and field maple (*Acer campestre*), coppice with standards; the other by mature beech (*Fagus sylvatica*) with ash and yew (*Taxus baccata*). The ground vegetation is extremely rich, including orchids (*Orchidaceae* spp.) and green hellebore (*Helleborus viridis*). The adjacent limestone grassland has a variety of species such as wild thyme (*Thymus*

				serpyllum), fairy flax (*Linum catharticum*) and dyer's greenweed (*Genista tinctoria*). The abundant insect life includes marbled white butterfly (*Melanargia galathea*).

Priority Habitats	Number of parcels within 2km	Distance of closest parcel	Size of closest parcel	Grid reference
Deciduous woodland	4	0.26km (west)	4.34ha	SO6849447148
Traditional orchard	1	0.35km (west)	0.16ha	SO6787946550
Ancient Woodlands within 500m		**Distance from site**	**Size**	**Grid reference**
Ash Bed		280m (north)	1.21ha	SO6831647050
Watercourses within 250m		**Distance from site**	**Type**	**Grid reference**
WB1		118m (south)	Ditch	SO 68369 46518

There are no statutory designated sites within 2km of the site. Statutory designated sites will not pose a constraint to the works.

The closest non-statutory designated site is Fox Hill and Fishpool Wood LWS, approximately 680m from the site. Due to sufficient distance and lack of connectivity, the works are not deemed to pose an risk to non-statutory designated sites however pollution prevention measures should be followed.

There is one ancient woodland within 500m; Ash Bed which is 280m from site, however seven of the non-statutory designated sites within 2km of the site also contain ancient woodlands. Due to sufficient distance and lack of connectivity, the works are not deemed to pose a risk to non-statutory designated sites however pollution prevention measures should be followed.

The unnamed watercourse (WB1; see Figure 2 and Figure 4) is located approximately 122m south of the site, running along the north of the A1403. There are four parcels of deciduous woodland, the closest located 260m from site, and one parcel of traditional orchard located 350m from site. It is unlikely that the watercourse and priority habitats will be impacted directly by the works, however there is potential for indirect impacts if pollution prevention guidelines are not followed.

Appropriate pollution prevention measures should be included within a Construction and Environmental Management Plan (CEMP) to ensure no adverse indirect impacts on the local non-statutory sites, unnamed watercourse or ancient woodland.

Habitats

Non-cereal crops – c1d-1

To the east lies an arable field, approximately 0.06ha in size, in which radish (*Raphanus sativus*) is currently being grown.

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Rye-grass and clover ley – c1b5-1

A field to the east, approximately 0.23ha in size, comprises temporary grasses dominated by perennial rye-grass (*Lolium perenne*). The area appears to have previously been used as cropland, as the area outside the survey boundary still exists as such, growing radishes. Clearance of an area north of hedgerow h2a6-1 appears to have been completed, which has since been colonised by grasses.

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Reedbed – f2e-1

A man-made reedbed, approximately 0.01ha in size, is present in the eastern part of the site. The reedbed is dominated by common reed (*Phragmites australis*), with rare common nettle (*Urtica diocia*) and great willowherb (*Epilobium hirsutum*) present at the edges. The substrate at the time of the survey was wet; however, there was little standing water.

The condition of the reedbed is Moderate, scored down due to the presence of artificial drainage.

Other broadleaved woodland (Line of Trees) – w1g-1 (10, 33) (Scattered scrub, line of trees)

A line of ash (*Fraxinus excelsior*) trees approximately 10 metres long, lies at the centre of the site between the reedbed (f2e-1) and structure (u1b6-1). There is bramble (*Rubus fruticosus* agg.) and holly (*Ilex aquifolium)* occasionally present throughout and common ivy (*Hedera helix*) covers the ground layer and some of the trees. The trees are growing to a height of approximately 8-10m and are mostly in good condition; however some rot holes were identified.

The condition of the other broadleaved woodland is Moderate, scored down as it does not meet the criteria of an undisturbed naturally-vegetated strip of at least 6 m on both sides, to protect the line of trees from farming and other human activities.

Other native hedgerow – h2a6-1 (32, 50, 502) (Scattered trees, ditch, seasonally wet)

A hedgerow associated with a ditch runs from north to south through the centre of the site, approximately 51 metres long and separating two fields (c1b-1 and c1b5). The hedgerow is comprised of native species, predominantly ash, field maple (*Acer campestre*), hawthorn and blackthorn (*Prunus spinosa*). Bramble and common ivy are present throughout.

The hedgerow appears to have been historically managed to a height of approximately 2-3m, but the highest section is unmanaged and is regenerating. There is a vegetated strip approximately 1-1.5m wide along the hedgerow which is comprised of predominately Yorkshire fog (*Holcus lanatus*), frequent bramble and occasional cow parsley (*Anthriscus sylvestris*), common nettle and cleavers (*Galium aparine*). There are some patches of bare ground present, mostly to the south where rabbit warrens exist (TN1). The ditch was mostly dry, with rare patches of standing water.

The condition of the hedgerow is Good, only failing to meet one criteria; species indicative of nutrient enrichment of soils dominate more than 20% cover of the area of undisturbed ground.

Other native hedgerow – h2a6-2 (32, 521) (Scattered trees, unmanaged)

A hedgerow runs from west to east behind the Severn Trent site, approximately 48 metres long. The hedgerow is comprised of native species but lacks the species richness of h2a6-1. Species present include ash, field maple, hazel and hawthorn. Bramble and common ivy are present throughout. The

hedgerow appears to have been historically managed to a height of approximately 2-3m, but the highest section is unmanaged and is regenerating.

The condition of the hedgerow is Moderate, scored down due to a lack in variation of tree age classes and species indicative of nutrient enrichment of soils dominate more than 20% cover of the area of undisturbed ground.

Developed land, sealed surface – u1b-1

An area of hard standing, approximately 0.01ha in size, encircles a metal structure associated with the water treatment works (u1b6-1) and is contained by metal fencing (u1e-1).

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Developed land, sealed surface – u1b-2 (800) (Road)

A single-track road runs adjacent to the site, which joins the A1403 to the south.

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Other developed land – u1b6-1

A metal dome-shape structure associated with the water treatment works lies within a hard standing area (u1b-1) encircled by secure fencing (u1e-1).

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Other developed land – u1b6-2

A brick structure with associated concrete steps and metal handrails exists within an area of bare ground (u1f-1) adjacent to the reedbed (f2e-1).

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Built linear features – u1e-1 (612) (Fence)

Secure metal fencing encircles the structure (u1b-1) and hard standing area (u1b-1) to the south-east of the survey area, and wooden post and wire fencing encircles the reedbed (f2e-1) area, hedgerows (h2a6-1and h2a6-2) and extends along the road to the south of field c1b5-1.

No condition assessment for this habitat is necessary as per the methodology of the Statutory Biodiversity Metric.

Sparsely vegetated urban land – u1f-1 (510) (Bare ground)

An area of bare ground, approximately 0.01ha in size, is present between a line of trees (w1g-1) and the reedbed (f2e-1) and surrounds a brick structure (u1b6-2). The area was generally devoid of vegetation and covered in leaf litter from overhanging trees, with some moss present in places.

The condition of the habitat is Poor, scored down for a lack of varied vegetation structure and plant species deemed beneficial for wildlife, for example flowering species.

Sparsely vegetated urban land – u1f-2

Adjacent to u1f-1 and surrounding the reedbed (f2e-1), is a parcel of artificial unsealed substrate which is mostly unvegetated, with an unknown moss species occasionally present.

The condition of the habitat is Poor, scored down for a lack of varied vegetation structure and plant species deemed beneficial for wildlife, for example flowering species.

Target Notes

TN1 – Adjacent to hedgerow h2a6-1 there is an area of bare ground as a result of digging by mammals, likely rabbits due to the number and size of the entrances. The area extends approximately 4-5m. Grid ref: SO 68261 46629.

Habitat Recommendations

Records were returned for two types of priority habitat within 1km of the site boundary. Priority habitats are listed under Section 41 of the Natural Environments and Rural Communities (NERC) Act 2006 as a habitat of principal importance. Under the National Planning Policy Framework (NPPF) 2023, priority habitats can be of material importance to plans, and should promote the conservation, restoration, and enhancement of priority habitats.

The priority habitat types noted in the desk study; deciduous woodland and traditional orchard, are unlikely to be affected by the proposed works due to the distance between these priority habitats and the site. However, the hedgerows (h2a6-1 and h2a6-2) and reedbed (f2e-1) noted during the habitat survey are also a priority habitat and could be directly impacted by the works.

It is therefore recommended that in the first instance the reedbed habitats should not be impacted by the development and should be left in situ. However, if the removal of the reedbeds is required, the habitat should be replaced on a like-for-like basis.

Where possible the hedgerows should be left in situ. However, if this is not possible any area removed should be replaced on a like-for-like basis, ideally in the same location to retain connectivity of habitats within the site, and a hedgerow survey should be undertaken before removal, to determine if this hedgerow qualifies as an Important Hedgerow, under the Hedgerow Regulations 1997.

Protected and Notable Species

Otter, Water Vole and White-clawed Crayfish

The desk study found no evidence of otter (*Lutra lutra*), water vole (*Arvicola amphibius*) or white-clawed crayfish (*Austropotamobius pallipes*). No signs of these species were observed during the survey. There is no suitable habitat within the site or 30m survey buffer to support such species and therefore it is unlikely they will be impacted by the works.

In the unlikely event that an otter, water vole or white-clawed crayfish is encountered during the works, works must cease, and an ecologist should be contacted for advice. Site personnel should not approach the animal.

Bats

The desk study returned four records of evidence of bat species within the 2km study area; common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*). The closest record was of two soprano pipistrelles, approximately 130m east in the adjacent field (Grid ref: SO684466).

A search of MAGIC returned two European Protected Species Licences for bats within 2km of the site over the last 10 years; 2016-22980-EPS-MIT for and 2016-27344-EPS-MIT which allowed the destruction of resting places for common pipistrelle, brown long-eared (*Plecotus auritus*) and Brandt's bat (*Myotis brandtii*).

During the survey, the trees and buildings on site and within the 30m survey buffer were assessed for their potential to support roosting bats using best practice guidance (Collins, ed. 2023). Three trees (T1, T2 and T3 on Figure 5) were recorded as 'further assessment required' (FAR). T1 has multiple features with the potential to be used by individual bats, so was recorded as PRF-I. T2 and T3 both have a singular PRF towards the base of their trunk that could support multiple bats, so were recorded as PRF-M.

The two structures on site were assessed as having negligible potential for roosting bats.

The site may have the potential to be used as foraging and commuting habitat by bats due to the presence of hedgerows, a line of trees, arable fields and a reedbed. The hedgerow and associated

ditch may be utilised as part of a wider foraging and commuting resource by bats that are present in the surrounding area.

All bat species are protected by the Conservation of Habitats and Species Regulations 2017 (as amended). In addition to the protection given to bats under the Conservation of Habitats and Species Regulations 2017 (as amended) already described, bats are also partially protected in England under the Wildlife and Countryside Act 1981 (as amended).

Best practice measures in relation to foraging/commuting bats include:

- If undertaking works at night, sensitive lighting should be implemented, directed away from the buildings and foraging habitats; and
- Machinery/vehicles should not be left idling near buildings or vegetation.

Further survey is recommended in Section 5.

Great Crested Newt

The desk study returned no records of great crested newt (GCN). A search of MAGIC also returned no GCN records.

There is one waterbody on site (f2e-1 reedbeds on Figure 3 and WB2 on Figure 4) and one waterbody within 250m of the site (WB1 on Figure 4) which could be suitable for GCN.

There is also a ditch on site (h2a6-1) which was mostly dry at the time of survey, with some smaller areas of standing water due to recent rainfall. It appears the ditch will be dry in the summer months and therefore unsuitable for breeding GCN.

The hedgerow and trees on site offer suitable terrestrial habitat for GCN.

GCN are protected by the Conservation of Habitats and Species Regulations 2017 (as amended). In addition to the protection given to GCN under the Conservation of Habitats and Species Regulations 2017 (as amended) already described, GCN are also partially protected in England under the Wildlife and Countryside Act 1981 (as amended).

Further survey is recommended in Section 5.

Hazel Dormouse

The desk study returned no dormouse records. Additionally, no European Protected Species Licences were found using MAGIC.

The site is within the known range of hazel dormouse. Additionally, the woodland and hedgerows on site offer suitable habitat for dormouse. There are also hedgerows connecting the site to larger areas of woodland.

Dormouse are protected by the Conservation of Habitats and Species Regulations 2017 (as amended). In addition to the protection given to dormouse under the Conservation of Habitats and Species Regulations 2017 (as amended) already described, dormouse are also partially protected in England under the Wildlife and Countryside Act 1981 (as amended).

Further survey is recommended in Section 5.

Other Mammals

Singular records for Eurasian hedgehog (*Erinaceus europaeus*), polecat (*Mustela putorius*) and Eurasian water shrew (*Neomys fodiens*) were returned in the desk study. The hedgehog was located 0.2km east of site, the polecat was located 0.6km east of the site and the water shrew was located 0.46km south of the site.

Although not considered protected species, hedgehog and polecat are species of conservation concern and all three species are protected under the Wild Mammals (Protection) Act (1996) which prevents cruel forms of killing.

Suitable habitat for hedgehog and rabbit (*Oryctolagus cuniculus*) were recorded on the site with the hedgerows (h2a6-1 and h2a6-2) and arable field margins (c1d-1 and c1b5-1) providing suitable commuting, foraging and shelter habitat.

Rabbit entrances were located within the site (TN1) along the hedgerow boundary (h2a6-1). Rabbits are also protected under the Wild Mammals (Protection) Act (1996), therefore suitable mitigation to avoid contravening legislation should be implemented.

As it is likely that the rabbit warrens will need to be excavated as part of the works, it is recommended that the excavations are undertaken using hand tools in this area and supervised by an Ecological Clerk of Works (ECoW).

If vegetation clearance is to occur, it is recommended that any habitat suitable for sheltering hedgehog and polecat should be checked prior to works. Should either of these be discovered on site at any time during their active period (April to October inclusive), they should be allowed to move away on their own volition or if in danger moved carefully with gloved hands to a sheltered area (e.g. dense scrub). Should hedgehogs be discovered on site outside of the active season (April to October inclusive), an ecologist should be contacted for advice on how to proceed.

To prevent harm to mammal species visiting the works area during the construction phase the following precautions are recommended:

- Secure storage of materials and chemicals within a designated area;
- Deep excavations should be covered at night or a suitable escape ramp should be provided to prevent animals becoming trapped;
- Task lighting should be purposefully directed away from retained habitats and focussed on the work area to reduce potential impacts or disturbance to mammals.

Birds

Four records of barn owl (*Tyto alba*) within 1km of the site were returned in the desk study, the closest record being 0.13km to the north-east within a farm building (Grid ref: SO 68338 46728).

All wild birds, eggs and their nests are protected from damage and destruction under the Wildlife and Countryside Act 1981 (as amended). Barn owls are afforded additional protection under Schedule 1 of the act, protecting them from disturbance when nesting. There is suitable foraging habitat on site for barn owl in the form of arable fields (c1d-1 and c1b5-1) and their margins, however no suitable nesting habitat was identified on site or within the 30m buffer.

There is also habitat suitable for common species of nesting bird within the site, comprising hedgerow (h2a6-1 and h2a6-2), reedbeds (f2e-1) and rural trees.

Therefore, any vegetation clearance required of habitats suitable for breeding birds, should be undertaken in the period September to February inclusive, outside of the breeding bird season. If works are undertaken during the breeding bird season (i.e. between the months of March and August, inclusive) in the habitat deemed suitable for breeding birds, then vegetation clearance must take place under an ecological watching brief by an ECoW. It is not expected that the works will disturb barn owl nesting sites however the species should be considered by the ECoW and should a barn owl be disturbed, works shall cease.

If no active nests are identified, works can proceed without further consideration for breeding birds. If an active nest is present, the nest should be protected with a suitable buffer until the young have fledged or the nest is no longer active.

Amphibians

The desk study returned no records for amphibians. Habitat on site was identified that could be suitable for common amphibians, comprising arable field margins (c1d-1 and c1b5-1), hedgerows (h2a6-1 and h2a6-2) and associated ditches, and reedbed (f2e-1).

Common amphibians, such as common toads (*Bufo bufo*) are protected under the Wildlife and Countryside Act 1981 (as amended).

Any vegetation clearance required in habitats suitable for common amphibians should be fingertip searched by an ecologist to determine if any common amphibians are present within the habitats. Any refugia should ideally be left in situ, however, if not possible, should be dismantled by hand. If no common amphibians are identified, then works can proceed with respect to the species. If amphibians are identified, they should be moved to suitable on-site habitat that will not be impacted by the works.

Reptiles

The desk study returned no records for reptiles within 1km of the site. Habitats suitable for common reptiles, including common lizard (*Zootoca vivipara*), grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*), such as arable field margins (c1d-1 and c1b5-1), reedbed (f2e-1) hedgerows (h2a6-1 and h2a6-2) and associated ditches were identified on site.

All native reptile species are protected from killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981, as amended, and are listed as Species of Principal Importance (SPI) in Section 41 of the NERC Act 2006.

If vegetation clearance is required, removal of habitat suitable for supporting reptiles during the development could result in the killing or injury of reptiles which would be an offence in the absence of appropriate mitigation. Any vegetation clearance required in habitats suitable for reptiles should be fingertip searched by an ecologist and any refugia should ideally be left in situ, however, if not possible, should be dismantled by hand. If no common reptiles are identified, then works can proceed with respect to the species. If common reptiles are identified, they should be moved to suitable on-site habitat that will not be impacted by the works.

Notable and Invasive Non-Native Species (INNS)

No records of INNS were returned within 1km of the site boundary.

No INNS were recorded within the site or 30m survey buffer during the survey; however, the survey visit was undertaken in January, which is outside the main flowering season. As such, it is possible that some invasive non-native species may have been missed.

If INNS are found during the development, an ecologist should be contacted, and a buffer zone and biosecurity measures implemented. Ideally, an INNS survey should be completed in the optimal months (April – October) to ensure none are present on site.

5. Further Survey Methods for Protected Species, Notable Species and Habitats if highlighted as being required (red risk).

As the timings of the works are unknown, it is recommended that if the works have not commenced within a year of the survey, the site will need to be reassessed (CIEEM, 2017).

Bats

A field maple (T1 on Figure 5) within hedgerow (h2a6-1) was recorded as having hollow branches and rot holes present across three limbs, approximately 1.5-2m up. T1 was categorised as PRF-I, due to the presence of features capable of supporting individual bats only and therefore further surveys are no required. However, as it is likely this tree will be lost to the development, it will need to be checked by an ecologist immediately before it is felled and all PRFs must be mitigated for, such providing new roosting opportunities in the form of bat boxes.

In addition, two ash trees within the line of trees (w1g-1) were identified to have potential roosting features in the form of rot holes (T2 and T3 on Figure 5), approximately 0.5-1m up the stem. Both trees were categorised as PRF-M, due to the presence of larger features that could potentially support hibernation and maternity roosts. It is recommended that a suitably licenced bat worker undertakes inspections of these features using an endoscope as it may be the roost potential of the tree can be downgraded, lessening the number of surveys required. The aim of the inspection is to allow for a more detailed assessment of the features' likely suitability for bats and to look for more conclusive evidence, such as live or dead bats, droppings or staining (Collins ed. 2023).

Endoscope inspections can be completed all year round.

Dependent on the outcome of the endoscope survey, further surveys may then be required.

Badger

Although no evidence of badgers was identified during the survey, due to the suitable habitat on site and wider area and the mobile nature of badgers, a survey is recommended within 3 months of works commencing to assess if badger setts have been created on site. Such surveys can be performed at any time of year.

Hazel Dormouse

The hedgerows on site offer suitable habitat for dormouse. The current design proposals would involve the removal of these hedgerows and potentially destroy dormouse habitats. A habitat suitability assessment survey is recommended of the site and surrounding connected hedgerows. This can be undertaken at any time of year.

If dormouse are confirmed to be present, an application to Natural England for a European Protected Species Licence (EPSL) will be required before works can commence on site.

Great Crested Newt

Due to the presence of a reedbed on site (f2e-1) and a watercourse to the south within 250m of the site (WB1), Habitat Suitability Assessments for great crested newt (GCN) are recommended. Should the habitats be deemed to be of suitable condition to support breeding great crested newts, eDNA surveys should be undertaken during the GCN breeding season (mid-April to June).

If GCN are confirmed to be present, an application to Natural England for a EPSL will be required before works can commence on site.

References

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

Clark. 2007. Badgers. Whittet Books, Suffolk.

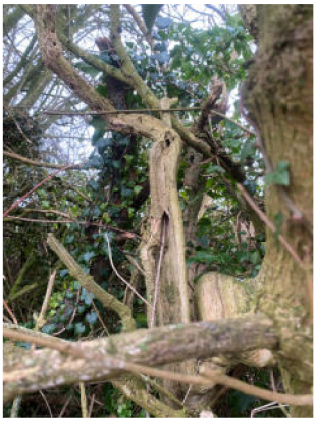
Collins, J (ed.) 2023. Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6.

Abbreviations

PEA	Preliminary Ecological Appraisal
GCN	Great Crested Newt
PRA	Preliminary Roost Assessment
PRF	Potential Roost Feature
ECoW	Ecological Clerk of Works
PWMS	Precautionary Working Method Statement
EPSL	European Protected Species Licence
MAGIC	Multi-Agency Geographic Information for the Countryside

APPENDIX 1

Appendix 1: Suitability for Bats

Type and Figure ID	Description	Distance/ direction from scheme (m)	Bat roost potential?	Photo
T1	Semi-mature field maple within hedgerow (h2a6-1). PRFs present in the form of three hollow branches. None of these PRFs appear to be deep enough to offer maternity or hibernation potential. Grid ref: SO 68249 46659	Within scheme boundary	Yes: PRF-I. Further assessment required (FAR on Figure 5).	  

Type and Figure ID	Description	Distance/ direction from scheme (m)	Bat roost potential?	Photo
T2	Mature ash tree within line of trees (w1g-1). PRF present in the form of a cavity within the trunk, approximately 1m up the stem (PRF-M). This tree could potentially support hibernation and maternity roosts. Grid ref: SO 68268 46624	Within scheme boundary	Yes: PRF-M. Further assessment required (FAR on Figure 5). .	
T3	Mature ash tree within line of trees (w1g-1). PRF present in the form of a cavity within the trunk, approximately 1m up the stem (PRF-M). This tree could potentially support hibernation and maternity roosts. Grid ref: SO 68269 46621	Within scheme boundary	Yes: PRF-M. Further assessment required (FAR on Figure 5). .	 

APPENDIX 2

Appendix 2: Target Notes

TN Number	Description	Photo
TN1	Adjacent to hedgerow h2a6-1 there is an area of bare ground as a result of digging by mammals, likely rabbits due to the number and size of the entrances. The area extends approximately 4-5m. Grid ref: SO 68261 46629.	

APPENDIX 3

Appendix 3: Detailed Survey Methods Used

Desk Study

A study area was defined as an area that encompassed the site and all land within 2km of the perimeter of the site, see Figure 1.

Records of designated sites were sought for the full study area, whereas records for species were sought for part of the study area encompassing the site and within 1 km of the perimeter of the site, except for bats which a search area of 2km were sought. A search for waterbodies within 250 m of the site was also undertaken.

Where multiple records of a species were identified, the record with the most recent date has been included (Table 8). Species records returned by the desk study that have been excluded from this report include:

- Species records whereby the most recent record is older than 10 years, except in circumstances whereby the record is deemed to offer important information;
- Bird species that are listed in the green or amber list only of Birds of Conservation Concern 5 (Stanbury et al., 2021), with no other protection afforded to them; and
- Fauna protected from sale only under Schedule 5 of the Wildlife and Countryside Act Wildlife and Countryside Act 1981, as amended, with no other protection afforded to it.

Habitat Survey

A survey area was defined as an area that encompassed the site. The survey area is shown on Figure 2.

A survey using the UKHab Classification System (Butcher et al., 2023) was conducted throughout the survey area. This is a nationally recognised habitat classification system that is compatible with the DEFRA Biodiversity Metric for calculating biodiversity net gain values (DEFRA, 2023a).

The UKHab has five hierarchical levels and includes the identification of priority habitats (Habitats of Principal Importance listed under the Natural Environment and Rural Communities Act 2006) and Annex I habitats as listed under the European Habitats Directive. The five levels are:

- Level 1 – Biomes/major ecosystems (terrestrial, freshwater and coastal);
- Level 2 – Ecosystem types (i.e. woodland, grassland, heathland and scrub);
- Level 3 – Broad Habitats, based on those of the UK Biodiversity Action Plan (UKBAP);
- Level 4 – Habitats, including 47 priority habitats; and
- Level 5 – Habitats, including Annex I habitats.

In addition, non-hierarchical secondary codes were used to provide supplementary information. These included mandatory codes for habitat mosaics/complexes, priority and Annex I habitats that occur in multiple primary habitats and habitat origins (codes 10 - 41), plus any additional relevant secondary codes.

During the field survey, all habitats mapped to the highest level possible.

The dominant and readily identified species of higher plant species from each habitat type within the survey area were recorded and their abundance was assessed on the DAFOR scale:

- D Dominant;
- A Abundant;
- F Frequent;
- O Occasional; and
- R Rare.

These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2019).

Target notes were made for any features which were too small to map or are of particular ecological interest.

Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support protected species and other species of conservation concern, including priority species. However, no specific faunal surveys were undertaken.

Ground Level Roost Assessment

Trees were subject to detailed inspection from the ground, systematically visually surveying the tree from all possible aspects, including close to the stem and further from the base (as required). Results were recorded using a GPS enabled mobile mapper or paper form, with photographs taken to support results.

The survey searched for and recorded any PRFs which could be viewed from the ground. Those which were apparently pointing upwards were included in the assessment, as were seasonally wet features because these factors do not necessarily preclude use without further investigation. Where higher level areas of the tree were viewable from the ground, a high-powered torch was used to search for PRFs. Features searched for are included in Table 1 below.

Table 1: Features defined according to Bat Roosts in Trees by the Bat Tree Habitat Key (BTHK, 2018)

Disease/Decay Formed PRFs	Damaged formed PRFs	Association formed PRFs
• woodpecker holes • squirrel holes • knot holes • pruning cuts • tear outs • wounds • cankers • compression forks	• butt rots • lightning strikes • hazard beams • subsidence cracks • shearing cracks • transverse snaps • welds • lifting bark • desiccation fissures • frost cracks	• fluting • ivy

All trees with identified PRFs and requiring further assessment were photographed and the following information recorded:

- GPS coordinates;
- UK Habitat Classification;
- Species, height, condition (alive, dead etc); and
- Approximate diameter at breast height.

Where PRFs were identified, they were recorded including PRF type, location on tree (stem or limb), height above ground and compass direction on the tree. Any evidence confirming or indicating use of a PRF was also recorded, including:

- Bat droppings, feeding remains and corpses (with notes made on quantity, freshness and type);
- Dark staining below an access point that may be caused by bat faeces or urine;
- Staining around a hole that may be caused by the natural oils in bat fur; and
- Noises made by bats.

If any bat droppings were found, their location, spread and approximate number and age were recorded. If necessary (and accessible), for identification, a sample of droppings was collected and retained for later DNA analysis.

Badger Survey

Since badgers are principally nocturnal, the surveyor concentrated on searching for evidence of badgers. The whole of the survey area was searched; however, survey effort was concentrated on sloping ground within woodland, scrub and along hedgerows, since these are the most likely locations for badger setts. Where the survey area is adjacent to, or within urban land, survey effort was concentrated along fence edges, within garden planting, and around bird feeders and bins.

The classification of badger setts used in this survey is based on definitions given in Clark (2007).

The survey comprised a search for signs of badger including the following:

- Setts and day nests;
- Paw prints;
- Paths and "squat-marking";
- Latrines, droppings and urine;
- Hairs caught on fences and vegetation;
- Scratching posts;
- Feeding signs and "snuffle-holes" in grassland;
- Broken up wasp nests; and
- Badger bones.

When a potential badger sett, consisting of one or more burrow entrances, was encountered, the area was searched for signs of current use by badger.

If signs of current use by badger were found the sett was then classified based on the number of entrances, apparent level of use and proximity to other setts. Badger sett classifications used include:

- Main sett – multiple entrances, potentially used and disused, with large spoil heaps, always active with well used paths
- Annexe sett – likely to have many well-used entrances and worn paths to the main sett, 50 - 150m away but not always in use.
- Subsidiary sett - with variable number of entrances and not connected to other setts by obvious paths and not always in use
- Outlier sett - with 1 or 2 holes and no defined path, often used only sporadically.
- Unknown – the sett type is undetermined.

If no signs of current use by badger were recorded then mammal burrows were recorded as:

- Potential badger sett
- Disused mammal burrows
- Fox earth
- Rabbit warren or burrow

Identification of Legal and Planning Policy Issues

Scope of Assessment

The first step is to identify any biodiversity features found on the site that are subject to legal or policy controls, as follows:

Designated Sites

The location of the site is compared to the distribution of sites with a statutory or non-statutory nature conservation designation using information derived from the desk study. Consideration is given to designated sites that could be affected directly or indirectly by the proposed development.

Habitats outside Designated Sites

The habitats known to occur on the site are compared to those which receive some protection, in law or policy, outside of designated sites i.e. hedgerows, uncultivated land and semi-natural areas, habitats listed as priorities in the home nation biodiversity strategies, habitats listed as Habitats of Principal Importance for the Conservation of Biodiversity by the Secretary of State and local priority habitats listed as requiring action (formerly under the Local Biodiversity Action Plans).

Ancient Woodland

The ancient woodland inventory is checked to determine whether any known ancient woodland occurs either on the site or nearby.

Protected Species

The species known to occur on the site as a result of the desk study and UKHab survey are compared with those listed in nature conservation legislation i.e. the Wildlife and Countryside Act 1981, as amended, the Conservation of Habitats and Species Regulations 2017, as amended.

In addition, the species known to occur on the site as a result of the desk study and UKHab survey are compared with those listed in animal welfare legislation, i.e. the Badgers Act 1992 and the Wild Mammals (Protection) Act 1996.

Priority Species

The species known to occur on the site are compared with those listed as priority species (i.e. Species of Principal Importance for the Conservation of Biodiversity in the country concerned) or those requiring action on the local priority species lists (Local Biodiversity Action Plans).

Other Species of Conservation Concern

The species known to occur on the site are compared with other nature conservation listings, such as red data books.

Invasive Plant Species

The species of plant present on the site are compared with those listed by government agencies as invasive non-natives, with particular attention given to those listed in the Wildlife and Countryside Act 1981, as amended.

Review of Legislation and Policy

If any of the above are found to occur on or near the site and are likely to be affected by the development in any way, the relevant legislation and planning policy (including national, regional, local policies) are examined to determine whether the proposed development is compliant.

Ecological Enhancement

Planning policy generally requires new developments to be enhanced for biodiversity. The existing proposals are considered to determine whether biodiversity enhancements are offered and whether they are adequate to meet the policy requirements. Again, national, regional and local policies are considered.

Identification of Potential Further Ecological Issues

Further ecological issues are those which cannot be resolved during the preliminary ecological appraisal for any reason, including the following:

- The development is near a designated site and consultation with the relevant regulator is required in order to determine whether further assessment is required;
- Suitable habitat is present on or near the site for a protected species/species of conservation concern and specialist survey techniques are required for their detection;
- Suitable habitat is present on or near the site for a protected species/species of conservation concern and the extended UKHab survey was not undertaken at a suitable time of year for their detection;
- A protected species/species of conservation concern was found on or near the site but further information on population size or distribution is required in order to resolve any legal and planning policy issues (such as obtaining licences).

Discussion of issues raised by 3rd parties, e.g. reports of protected species from the site by local people, may also be discussed under this heading.

The desk study is used as a guide to the protected species/species of conservation in the local area, however, the list is not taken to be exhaustive and it is borne in mind that some species may no longer occur in the locality.

No attempt is made to evaluate the importance of the site for species not yet confirmed to be on or near the site, nor to discuss the implications for the development if the species were to be found on the site.

APPENDIX 4

Appendix 4: National Legislation and Planning Policy

Feature	Summary of Legislation/Policy
Designated Sites for Nature Conservation	
General	Paragraph 180 of the National Planning Policy Framework, 2023 (NPPF) states that *'Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, **sites of biodiversity** or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)'.*
Special Areas of Conservation[1] (SACs) (international importance)	Special Areas of Conservation (SACs) are protected areas in the UK designated under the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). Paragraph 187 of the NPPF states that *'The following should be given the same protection as habitats sites:* *a) potential Special Protection Areas and possible Special Areas of Conservation;* *b) listed or proposed Ramsar sites[2] ; and* *c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.'*
Special Protection Areas (SPAs) (international importance)	Special Protection Areas (SPAs) are protected areas for birds in the UK classified under the Wildlife & Countryside Act 1981 (as amended) and the Conservation (Natural Habitats, & c.) Regulations 2017 (as amended) in England, Scotland and Wales.
Sites of Special Scientific Interest (SSSIs) (national importance)	SSSIs are protected under the Wildlife and Countryside Act 1981 (WCA), Countryside and Rights of Way Act 2000 (CRoW Act) and Natural Environment and Rural Communities Act 2006 (NERC Act). SSSIs are protected by law and planning guidance. Local Planning Authorities (LPAs) in England must consult Natural England on planning applications that might affect SSSIs. Operations that could damage special interests require consent by Natural England.

[1] SACs and SPAs were formally known as European sites forming part of the Natura 2000 site network. Following the UKs exit from the EU they are now referred to as National Sites and are part of the National Site Network. However, these sites can still be considered to be of international importance for nature conservation. Developments affecting these sites must be considered according to the requirements of the Habitats Regulations.

[2] Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites

are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site

Feature	Summary of Legislation/Policy
	Paragraph 186(b) of the NPPF states that '*When determining planning applications, local planning authorities should apply the following principles: (b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest'.* Natural England's Impact Risk Zones for Sites of Special Scientific Interest (Natural England, 2021) is a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The Impact Risk Zones (IRZs) also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on European /Ramsar sites.
National Nature Reserves (NNRs) (national importance)	NNRs are a selection of the very best parts of England's SSSI's, protected under the WCA and CRoW Act.
Local Nature Reserves (LNRs) (local importance)	Local Nature Reserves (LNRs) protected under the National Parks and Access to the Countryside Act 1949. LPAs are required to consult Natural England about all new proposals. An LNR can be given protection against damaging operations. It also has protection against development on and around it. This protection is usually given via the Local Plan, (produced by the planning authority), and often supplemented by local by-laws. Unlike national designations, the level and type of protection afforded an LNR is decided locally and varies from site to site.
Non-statutory designated sites (local importance)	These sites are not protected under legislation. However, LPAs take account of local sites when formulating local plans and when considering planning applications.
Habitats of Principal Importance	Under Section 41 of the NERC Act, the Secretary of State must, as respects England, publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. Section 40 of The NERC Act 2006 places a duty on all public bodies, including planning authorities, to have regard for biodiversity in exercising their functions. Planning authorities should have particular regard to the Habitats of Principal Importance (priority habitats) listed under Section 41 of the act which should be treated as a material consideration in the planning process.
Ancient woodland	Ancient woodland is any area that's been wooded continuously since at least 1600 AD. Ancient woodland as well as ancient and veteran trees, are regarded as an 'irreplaceable habitat'. Paragraph 186(c) of the NPPF states that *'When determining planning applications, local planning authorities should apply the following principles: c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists …..'*
Biodiversity in general	Natural Environment and Rural Communities (NERC) Act 2006 states that any *"public authority must, in exercising its functions, have regard … to the purpose of conserving*

Feature	Summary of Legislation/Policy
	biodiversity" and "conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat".
Invasive non-native species (INNS)	In the UK it is an offence under the Wildlife and Countryside Act 1981 (as amended) to "*plant or otherwise cause to grow in the wild*" any plant species listed in Schedule 9 of the Act.
Alien species	In the UK it is an offence under The Invasive Alien Species (Enforcement and Permitting) Order 2019 to "releases or allows to escape into the wild any specimen which is of a species of animal which— (a)is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state, (3) A person who plants or otherwise causes to grow in the wild any specimen which is of a species of plant which is included in Part 2 of Schedule 2 is guilty of an offence. (4) A person who— (a)sells, offers or exposes for sale, or has in his possession or transports for the purposes of sale, any specimen of a species included in Part 3 of Schedule 2, or (b)publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any specimen of a species included in Part 3 of Schedule 2
Species of Principal Importance	Under Section 41 of the NERC Act, the Secretary of State must, as respects England, publish a list of the living organisms which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. Section 40 of The NERC Act 2006 places a duty on all public bodies, including planning authorities, to have regard for biodiversity in exercising their functions. Planning authorities should have particular regard to the Species of Principal Importance (priority species) listed under Section 41 of the act which should be treated as a material consideration in the planning process.
Fish	Special areas of conservation (SACs), sites of special scientific interest (SSSIs) or Ramsar sites have features of special interest for freshwater or migratory fish, such as: • Atlantic salmon (*Salmo salar*) • bullhead (*Cottus gobio*) • lamprey (brook, river and sea) (*Petromyzontiformes*) • spined loach (*Cobitis taenia*) • European eel (*Anguilla anguilla*) Developers must comply with the legal protection of freshwater and migratory fish and their habitats under the Wildlife and Countryside Act 1981, Salmon and Freshwater Fisheries Act 1975 and Eels (England and Wales) Regulations 2009. Many species of fish are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Amphibians	Common amphibians are protected under the Wildlife and Countryside Act 1981 (as

Feature	Summary of Legislation/Policy
(common)	amended) from activities related to their sale and it is considered best practice to avoid harming or killing them. Common toad is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Amphibians (rare)	Rare amphibian species include natterjack toad (*Epidalea calamita*), great crested newt (*Triturus cristatus*) and pool frog (*Pelophylax lessonae*). These are listed under The Conservation of Habitats and Species Regulations, 2017 (as amended) makes it an offence to; • deliberately kill, injure, disturb or capture them • deliberately take or destroy their eggs • damage or destroy their breeding sites and resting places - even if GCN are not present • possess, control or transport them (alive or dead) It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly: • disturb GCN while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection These species are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Reptiles (common)	Common reptile species are partially protected under Schedule 5 (Sections 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from: • Intentional (or reckless in Scotland) killing and injury (Section 9(1); • Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species (Section 9(5). These are species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Reptiles (rare)	Rare reptile species include sand lizard and smooth snake. These are listed under The Conservation of Habitats and Species Regulations 2017 (as amended). This makes it an offence to: • deliberately kill, injure, disturb or capture them • deliberately take or destroy their eggs • damage or destroy their breeding sites and resting places • possess, control or transport them (alive or dead) it is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly: • disturb them while they occupy a structure or place used for shelter or protection

Feature	Summary of Legislation/Policy
	• obstruct access to a place of shelter or protection These are species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Birds	All wild birds are protected under the Wildlife and Countryside Act 1981. It is an offence to: • kill, injure or take wild birds • take, damage or destroy the nests of species that reuse them, such as osprey • take, damage or destroy a nest that's in use or being built • take or destroy the egg of any wild bird • possess or control any wild bird (alive or dead) • possess or control an egg or any part of an egg of a wild bird Additional protection applies to birds listed in schedule 1 of the Wildlife and Countryside Act 1981. It is an offence to intentionally or recklessly disturb a schedule 1 bird: • on or near a nest containing eggs or young • when it's building a nest • or its dependent young Some wild birds are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Bats	All bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to: • deliberately kill, injure, disturb or capture them • damage or destroy their breeding sites and resting places (even when bats are not present) • possess, control or transport them (alive or dead) It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly: • disturb bats while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection Several species of bats are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Badger	Badgers and their setts (tunnels and chambers where they live) are protected by the Protection of Badgers Act 1992. It is an offence to:

Feature	Summary of Legislation/Policy
	• take, injure or kill a badger - or attempt these actions • treat a badger cruelly • interfere with a badger sett • possess or control a live badger • mark or ring a badger
Hazel dormouse	Hazel dormouse is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to: • deliberately kill, injure, disturb or capture them • damage or destroy their breeding sites and resting places • possess, control, transport (alive or dead) It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly: • disturb hazel dormice while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection Hazel dormouse is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Otter	Otters are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to: • deliberately kill, injure, disturb or capture them • damage or destroy their breeding sites and resting places - even if otters are not present • possess, control or transport them (alive or dead) It is also an offence under the Wildlife and Countryside Act 1981 to intentionally or recklessly: • disturb otters while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection Otter is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision. They are also listed as “Species of Principal Importance” under Section 7 or the Environment (Wales) Act 2016.
Water vole	Water voles are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally: • kill, injure or take them

Feature	Summary of Legislation/Policy
	• possess or control them (alive or dead) It is also an offence to intentionally or recklessly: • damage or destroy a structure or place used for shelter or protection • disturb them in a place used for shelter or protection • obstruct access to a place used for shelter or protection Water vole is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Other mammals (e.g. rabbit, fox, hedgehog)	Protection under the Wild Mammals (Protection) Act 1996, makes it an offense to inflict any unnecessary suffering, including crushing or asphyxiation of a wild mammal.
White-clawed crayfish	White-clawed crayfish are partly protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to capture this species without a licence and also prohibits trade in this species. This species is listed as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.
Freshwater pearl mussel	Freshwater pearl mussels are protected by the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally: • kill, injure or take them • possess or control them (alive or dead) It is also an offence to intentionally or recklessly: • damage or destroy a structure or place used for shelter or protection • disturb them in a place used for shelter or protection • obstruct access to a place used for shelter or protection
Invertebrates	Some invertebrates are protected as European protected species (EPS) under The Conservation of Habitats and Species Regulations 2017 (as amended), these are: • large blue butterflies (eggs, caterpillars, chrysalises and adults) • Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults) • little ramshorn whirlpool snails For these species It is an offence to: • deliberately kill, injure, disturb or capture them • deliberately destroy their eggs • damage or destroy their breeding sites and resting places (even when invertebrates are not present) • possess, control or transport them (alive or dead) For these three species, it is also an offence under the Wildlife and Countryside Act (WCA) 1981 to intentionally or recklessly:

Feature	Summary of Legislation/Policy
	• disturb them while they occupy a structure or place used for shelter or protection • obstruct access to a place of shelter or protection Many other invertebrate species are protected under schedule 5 of the Wildlife and Countryside Act 1981. For those listed in schedule 5, it is an offence to intentionally: • kill, injure or take them • possess or control them (alive or dead) It is also an offence to intentionally or recklessly: • damage or destroy a structure or place used for shelter or protection • disturb them in a place used for shelter or protection • obstruct access to a place used for shelter or protection Many invertebrates are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision under the 'biodiversity duty'.
Plant species	Under the Wildlife and Countryside Act 1981, it is an offence to intentionally uproot any wild plant without the landowner's consent. For plants, fungi and lichens listed on schedule 8 of the Wildlife and Countryside Act 1981 it is an offence to intentionally pick, uproot or destroy them, unless it could not be reasonably avoided. That means it was an incidental result of a lawful action. Some plants are listed on schedule 5 of the Conservation of Habitats and Species Regulations 2017. For these species it is an offence to: • deliberately pick, collect, cut, uproot or destroy them • possess, control or transport them (alive or dead) Many plants, fungi and lichens are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act 2006. Local authorities must have regard for the conservation of Section 41 species as part of their planning decision.

APPENDIX 5

Appendix 5: Plant Species and Abundance

gc1d-1 Non cereal crops

Common Name	Scientific Name	Abundance
Radish	*Raphanus sativus*	D

c1b5-1 Temporary grass and clover leys

Common Name	Scientific Name	Abundance
Perennial rye-grass	*Lolium perenne*	D

f2e-1 Reedbeds

Common Name	Scientific Name	Abundance
Common reed	*Phragmites australis*	D
Great willowherb	*Epilobium hirsutum*	R
Common nettle	*Urtica diocia*	R

w1g-1 Other broadleaved woodland (Line of trees)

Common Name	Scientific Name	Abundance
Ash	*Fraxinus excelsior*	D
Bramble	*Rubus fruticosus* agg.	O
Holly	*Ilex aquifolium*	O
Common ivy	*Hedera helix*	O

h2a6-1 Other native hedgerow

Common Name	Scientific Name	Abundance
Ash	*Fraxinus excelsior*	F
Field maple	*Acer campestre*	F
Hawthorn	*Crataegus monogyna*	F
Blackthorn	*Prunus spinosa*	F
Bramble	*Rubus fruticosus* agg.	O
Common ivy	*Hedera helix*	O
Yorkshire fog	*Holcus lanatus*	A
Cow parsley	*Anthriscus sylvestris*	O
Common nettle	*Urtica diocia*	O
Cleavers	*Galium aparine*	O

h2a6-2 Other native hedgerow

Common Name	Scientific Name	Abundance
Ash	*Fraxinus excelsior*	F
Field maple	*Acer campestre*	F
Hazel	*Corylus avellana*	F
Hawthorn	*Crataegus monogyna*	F
Bramble	*Rubus fruticosus* agg.	O
Common ivy	*Hedera helix*	O
Yew	*Taxus baccata*	R

u1f-2 Sparsely Vegetated Urban Land

Common Name	Scientific Name	Abundance
Moss sp.	-	O