ECOLOGICAL IMPACT ASSESSMENT

Storwood

August 2023



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		(Hons)	

Site:

Storwood East Yorkshire YO42 4TG

Dates:

Site walkover: 01/08/2023

Client:

Tim & Carol Richardson Orchard House Storwood

Client's agent:

Gallagher Planning

Planning Authority:

ERYC

Our ref:

2023-1598

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1 Summary

An ecological appraisal of land in Storwood, East Yorkshire, comprising a data search and extended UKHABS survey has been undertaken. Planning permission is being sought for the conversion of the existing chicken coop and the provision of a glamping lodge on-site.

Habitats on-site comprise of a traditional orchard, containing other neutral grassland with scattered, mature orchard trees. The site is comprised of a priority habitat; species identified on-site are widespread. Some trees will be removed and there will be a loss of a small area of grassland to accommodate the new lodge and access; the majority will be retained. Restorative and formative pruning should be undertaken to ensure the longevity of the orchard trees, and planting of new trees should be undertaken to ensure succession of the habitat. Reduced/targeted mowing of the grass should also be conducted.

The site is located adjacent to sites with a number of designations, from international to local level. These include the Lower Derwent Valley (SAC, SPA, Ramsar, NNR) and River Derwent (SAC, SSSI). Advisory mitigation to reduce impacts to the designated areas has been included. These include noise restrictions, fenced exercise areas or dogs on leads policy for any visiting dogs to prevent access to adjacent designated sites, information board or similar shown on-site providing information for visitors regarding the nearby sites. Daylight working during construction should also be included. With these appropriate planning conditions, the development will have minimal impact on the protected areas due to the small scale of the development. Any cumulative impacts should be addressed by the planning authority at a strategic level.

There is one pond within 250m, however it is located on private land and not accessible. There are no ponds on-site, however there is some suitable habitat on-site (hedgerow bases, grassland) available for the terrestrial stage of GCN, and other herptiles. RAMs have been included to reduce the impact/harm to individuals during the construction phase.

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The presence of otter is presumed due to suitable nearby habitat (watercourses) and evidence of feeding remains. Evidence of mammal foraging was found in the grassland, and as a precaution it has been presumed that badger may access the site for foraging; no evidence suggests there is a sett on-site. Hedgehogs are also likely to forage on-site. As a result, mitigation for small mammals including fencing the construction site, covering of trenches/ramp and daylight working have been included.

Removal of trees may cause harm to breeding birds; therefore, vegetation removal works should be conducted outside of the bird breeding season, or a pre-works check for active nests conducted.

The chicken coop on-site has negligible risk of roosting bats; therefore, no further survey effort is required. Some mature trees on-site have suitable potential roosting features (knots, bark splits) and bats may also forage around the site, therefore a suitable lighting scheme should be implemented to reduce lighting impact on surrounding vegetation, including tree canopies and hedgerows.

To enhance the site, bird and bat boxes could be installed in the woodland along the riverbank.

Ecological Constraint	Value	Effect	Significance of effect prior to mitigation	Mitigation/ precautionary measures	Significance of residual effect
Designated sites	Area	Disturbance to adjacent designated sites through increased human presence	Likely negative (not significant)	Noise restrictions; fenced areas for dog exercise/dogs on leads; information about sites provided onsite for visitors; daylight construction works	Neutral (not significant)
Foraging bats	Site	Light disruption to foraging corridor.	Likely negative (not significant)	No lighting/appropriate lighting scheme; daylight working hours	Neutral (not significant)
Breeding birds	Site	Vegetation removal may impact breeding birds	Likely negative (not significant)	Vegetation removed outside of breeding season or pre-works check	Neutral (not significant)
Habitats	Site	Loss of grassland and some trees	Likely negative (not significant)	Enhancement of orchard, including pruning, tree planting and grassland management	Neutral (not significant)
Herptiles (including GCN)	Site	Harm/injury when conducting works	Likely negative (not significant)	RAMs, including: mowing of vegetation prior to works; covering of trenches/filling in on same day	Neutral (not significant)
Otter, badger, hedgehog	Site	Loss of foraging habitat	Likely negative (not significant)	Fenced construction area; trenches covered or ramp; daylight work hours; installation of 13x13cm holes in any fences if applicable.	Neutral (not significant)

2 Introduction

MAB Environment and Ecology Ltd was commissioned by Gallagher Planning Ltd to undertake an Ecological Impact Assessment (EcIA) of an orchard at Storwood to accompany a planning application for the conversion of the existing chicken coop onsite, and the sitting of a new glamping lodge and access.

This report was prepared by Alice Brown BSc (Hons).

The site comprises a traditional orchard. The site is located (OS Grid Ref: SE71154422). The site location is shown on Figure 1 and 2.

The objectives of this report are to:

- Identify species and habitats on site, with particular reference to protected and notable species.
- Assess the potential impact of the proposed development on habitats and protected or notable species.
- Identify potential opportunities for biodiversity enhancement.
- To outline any necessary or recommended mitigation and compensation proposals.

Ecologists from MAB Environment and Ecology Ltd are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct when carrying out ecological work.



Figure 1. Site location 1:25,000.



Figure 2. Site plan as existing with red line showing area subject to planning permission.

3 Methodology

3.1 Desktop study

3.1.1 North and East Yorkshire Ecological Data Centre (NEYEDC) were commissioned to provide records of protected or notable species within 2km of the site. The search was extended to include any statutory, non-statutory sites and notable habitats.

3.1.2 DEFRA's interactive MAGIC map was used for a baseline assessment of available environmental information of over 300 datasets including Priority Habitats & Species inventories, Designations, Environmental & Historic Landscape Agreements, SSSI impact zones, and Wildlife Licenses.

3.1.3 Aerial imagery from Google Earth and government websites 'MAGIC' and were used to search for ponds within 250m of the site.

3.2 Field survey

3.2.1 The site was surveyed by Alice Brown and Jordan Brandrick.

3.2.2 Alice is a consultant ecologist for MAB. She is a qualifying member of CIEEM and has a BSc (Hons) in Ecology and Conservation. She has worked for MAB since the beginning of 2022 and holds a Class Survey Licence CL17 (Bat Survey Level 1) registration number 2023-11025-CL17-BAT.

3.2.1 Jordan Brandrick is an Ecologist for MAB. She is a qualifying member of CIEEM and holds a BSc (Hons) in Biosciences from the University of Durham.

3.2.2 UK HABS habitat survey of the site was conducted following standard published guidelines (Butcher et al, 2020). This involved a walkover of the site, mapping all habitats present which fell into the appropriate Minimum Mapping Units (MMU). MMU's were decided upon pre survey. Small scale MMU's = Area 25m², linear feature 5m. The survey was extended to include records of protected or notable fauna and the habitats were evaluated for their potential to support such fauna. Any invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act were also recorded.

3.2.3 Hedgerows within or forming the external boundaries to the site which have a continuous length of or exceeding 20m were surveyed in accordance with the Hedgerow Regulations 1997. Survey results were used to determine whether any of the hedgerows meet criteria listed in Part II of Schedule 1 and would therefore be deemed an 'important' hedge under the regulations. Hedgerows forming the boundary of the curtilage of a dwelling-house are not covered by the regulations and were not surveyed. Hedgerow assessment criteria are appended.

3.2.4 Trees marked for removal or directly affected by the development scheme were assessed during the day from the ground using close focusing binoculars and a halogen torch (500,000 candle power). Features such as woodpecker holes, splits, cracks, rot holes, dense ivy, and peeling bark were looked for which are commonly used by bats for roosting and for shelter. Any features were then inspected for any signs of bat use, including scratches or staining around potential access points, bat droppings bats, and the sounds / smells of bat roosts.

3.2.5 Other trees within the site and areas of vegetation were also assessed for value to bats and birds, and their importance as foraging and commuting habitat.

3.2.6 Buildings onsite were assessed for their degree of potential to support roosting bats. This includes assessing the building design, materials and condition. See Table 1 for more information.

Colour code	Bat roost potential.	Roosting habitats	Commuting and foraging habitats
	Confirmed	Signs of roosting bats present (e.g. entry / exit points, accumulated bat droppings, visible bats).	
Red	High risk	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
Amber	Moderate risk	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only-the assessments in this table are made irrespective of species conservation	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as a line of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for

		status, which is established after presence is confirmed).	foraging such as trees, scrub, grassland or water.
Yellow	Low risk	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. Unlikely to be suitable for maternity or hibernation)	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or unvegetated stream, but isolated, i.e. Not very well connected to the surrounding landscape by other habitat. Suitable but isolated habitat that could only be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Green	Very low risk	All potential bat roost habitat <i>comprehensively</i> inspected and found to be clear of past or present bat usage.	
Grey	Negligible risk	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

Table 1: Guidelines for assessing the suitability of proposed development sites for bats. Adapted from BCT Bat surveys for Professional Ecologists, Good Practice Guidelines 2016.

3.2.7 The interior and exterior of the buildings were inspected during the day using a halogen torch (500,000 candle power). All normal signs of bat use were looked for, including bats, bat droppings, feeding waste, entry and exit holes, grease marks, dead bats, and the sounds/smells of bat roosts.

3.2.8 The location of the site and the surrounding habitat were also assessed for value to bats. This includes proximity of the site to good bat foraging habitat such as woodland and water bodies and if the site is linked to such habitats by linear features like hedgerows, woodland edges or rivers which bats use to commute around the environment.

3.2.9 All signs of breeding bird activity were looked for.

3.2.10 The site was surveyed for evidence of badgers. Field signs include setts (noting number of entrances and evidence/level of recent activity); latrines; well-worn pathways; footprints; snuffle holes; hairs caught in boundary fences; scratching posts; smells.

3.2.11 Habitat evaluation for reptiles was undertaken focusing on potential areas for reptile basking in sheltered locations. Potential refugia such as rabbit burrows, brash piles, cracks and gaps in rocks, stone piles etc were noted. Throughout the walkover survey, the site was walked slowly looking out for reptiles and listening for any rustles in the undergrowth.

3.2.12 The bank of the river was walked along where possible. All signs of water vole activity were looked for. Signs included latrines (discrete piles of droppings); feeding stations or chopped vegetation; lawns (grazed areas at entrances to the tunnels); tunnel entrances above and below the waterline; paths and runs at the water's edge; runs within the vegetation; footprints in the mud; and sightings/sounds of water voles entering the water. We will also assess habitat suitability for water voles.

3.2.13 The bank of the river was walked along where possible. Otter signs were looked for along the river corridor - this included looking for spraints and tracks in the soft mud. If spraints were found their age (fresh, recent, old) was noted. Any potential holt sites were also identified – tree root cavities or impenetrable vegetation. Feeding remains were also searched for these may include partially eaten fish, frogs, piles of mussel shells, or crayfish remains. Slides/haul out routes into and out of the water were also looked for.

3.2.14 Habitat evaluation for hedgehogs was undertaken; hedgehogs may seek shelter in vegetation under hedges, and some hedgerows may be suitable habitats for summer breeding nests and winter hibernacula. Field signs (e.g., tracks, droppings) were also looked for.

4 Constraints

No constraints.

5 Baseline ecological conditions

5.1 Designated sites

The site is located adjacent to and within 2km of the following internationally designated sites relating to the Lower Derwent Valley and River Derwent:

Designation	Name or location of site	Grid reference in relation to the search area
Special Areas of Conservation	Lower Derwent Valley	6 sections throughout search area – alongside River Derwent and at SE733454.
Special Areas of Conservation	River Derwent	Linear feature throughout the west of the search area.
Ramsar	Lower Derwent Valley	6 sections throughout search area – alongside River Derwent and at SE733454.
Special Protection Areas	Lower Derwent Valley	Throughout search area – alongside River Derwent and at SE733454.

Figure 3. Internally designated sites shown in Figure 4.



Figure 4. Internationally designated sites within 2km of the site.

Designation	Name or location of site	Grid reference in relation to the search area
SSSI	Derwent Ings	Five polygons surrounding the River Derwent.
SSSI	Melbourne and Thornton Ings	SE732454
SSSI	River Derwent	Linear feature throughout the west of the search area.
NNR	Lower Derwent Valley	Several polygons within the search area, most around River Derwent (River Derwent SSSI areas) and some near Melbourne and Thornton Ings.

The site is adjacent to and within 2km of the following nationally designated sites:

Figure 5. Nationally designated sites shown in Figure 6.



Figure 6. Nationally designated sites within 2km of the site.

The site is adjacent to the Yorkshire Wildlife Trust reserve Wheldrake Ings and is within 2km of the following locally designated sites shown in Figure 7 and 8. There are also two City of York SINCs on the 2km boundary: Elvington Wood and West Car Masks.

Site Name	Site Ref	Grid Reference	Status
General Lane, Rossmoor	SE7040-06	SE729438 - SE729434	Deleted LWS
Grange Meadow	SE7040-01	SE733448	Historic LWS
Great West Wood, Melbourne	SE7040-08	SE739429	Deleted LWS
Hagg Lane, Storwood	SE7045-10	SE718451 - SE723450	Deleted LWS
Kidd Lane, Rossmoor	SE7040-07	SE743436 - SE740432	Designated LWS
Melbourne & Thornton Ings	SE7045-06	SE728462	Deleted LWS
Pocklington Canal	SE7045-09	SE710444 - SE722456	Designated LWS
Quaker's Wood, Storwood	SE7040-02	SE722440	Historic LWS
Rossmoor Meadow	SE7040-04	SE735438	Deleted LWS
Sutton Rush	SE7045-08	SE719456	Designated LWS
Walloway Fields	SE7040-11	SE719417	Designated LWS
Farm Wood, New Covert and Park Wood	SE7040-15	SE732443	Designated LWS

Figure 7. Locally East Yorkshire LWS designated sites shown on Figure 8.



Figure 8. Locally designated sites within 2km of the site.

5.2 Habitats

5.2.1 Surrounding Habitats

A search of priority habitats within 2km of the site found the follow priority habitats in Figure 9 below. The site itself is a traditional orchard and lies alongside (but not within) coastal and floodplain grazing marsh.



Figure 9. Map showing areas of notable habitat listed on the Habitat Inventories.

Habitat type	Location description
Ancient & Semi-Natural Woodland	Woodland at SE732444 and part of Elvington Wood.
Plantation on Ancient Woodland Site	Part of Elvington Wood.

Figure 10. Ancient Woodland shown on Figure 9

Habitat type	Location description
Coastal and floodplain grazing marsh	Large number of polygons throughout River Derwent, Derwent Ings/Lower Derwent Valley, Melbourne and Thornton Ings.
Deciduous woodland	Several polygons scattered throughout the search area.
Lowland fens	One polygon within Wheldrake Ings, another few alongside Wheldrake Ings, one within grazing marsh at SE699427, and at SE728453.
Lowland meadows	Large number of polygons throughout Derwent Ings/Lower Derwent Valley and Melbourne and Thornton Ings.
Reedbeds	Small polygon at SE732451.
Traditional orchard	One small polygon at East Cottingwith, one at SE713428, one in Storwood, one near Wheldrake, two at Thicket Priory and at Broomhill Plantation north of Wheldrake Ings.

Figure 11. Priority Habitats shown on Figure 9.

Aerial imagery

The surrounding habitat is a mixture of arable fields, open grassland, rivers and ponds. The site lies on the eastern tree-lined bank of Pocklington Canal, which runs adjacent to The Beck. This also connects with the River Derwent, which runs through the neighbouring YWT Wheldrake Ings. Pockets of woodland are in the proximity, many of which are located to the east, and are home to a series of ponds towards the village of Melbourne. This range of habitats will provide ideal habitat for a variety of animal species to optimise in the area.



Figure 12. Aerial view of the site and surrounding area. Google Earth.

Ponds

A search on MAGIC revealed one pond (Pond 1) within 250m of the site. This was not accessed during the site visit as is located on private land. There are no ponds on-site.



Figure 13. OS map showing location of pond (location circled blue) within the local area and 250m search area.

5.2.2 Habitats on site.

Phase 1 survey

The habitats found on site are highlighted within the UKHAB habitat map Figure 14 and are described below including species present. Target notes (TN) are included in Table 4, which gives more detailed information about the habitats/features present.

Survey Metadata
Surveyor: Alice Brown BSc (Hons)
UK Habs edition: Professional
Minimum Mapping Unit (MMU): Areas: 25m ² , Linear features: 5m
Highest level of primary habitat achievable: Lvl 5
Map Projection: EPSG: 2770 British National grid
Year: 2023
Organisation: MAB Environment and Ecology Ltd

Table 2: Survey metadata.

G3c, 10, 32, 27, 106 – other neutral grassland, scattered scrub, scattered trees, traditional orchard, mown

Traditional orchard: trees of different ages, many mature with veteran features, include plum (*Prunus sp.*), apple (*Malus sp.*), pear (*Pyrus sp.*), walnut (*Juglans regia*), damson (*Prunus sp.*), cherry (*Prunus sp.*). Species identified in the grassland include timothy (*Phleum pratense*), perennial ryegrass (*Lolium perenne*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), false oat grass (*Arrhenatherum elatius*), hoary willowherb (*Epilobium parviflorum*), common dandelion (*Taraxacum officinale*), angelica (*Apiaceae sp.*), sorrel (*Rumex acetosa*), white clover (*Trifolium repens*), cranesbill (*Geranium molle*), meadow sweet (*Filipendula ulmaria*), hemp nettle (*Galeopsis tetrahit*), hogweed (*Heracleum*), silverweed (*Potentilla anserina*), cow parsley (*Anthriscus sylvestris*), prickly sow thistle (*Sonchus asper*), celandine (*Ficaria verna*), lords and ladies, broadleaved dock (*Rumex obtusifolius*), creeping thistle (*Cirsium arvense*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), dogrose (*Rosa canina*), cleavers (*Galium aparine*). Some scattered blackthorn (*Prunus spinosa*) whips to northeast corner.



Photo 1. G3c, 10, 32, 27, 106



Photo 3. G3c, 10, 32, 27, 106



Photo 5. G3c, 10, 32, 27, 106

Table 3. Hedgerows



Photo 2. G3c, 10, 32, 27, 106



Photo 4. G3c, 10, 32, 27, 106



Photo 6. G3c, 10, 32, 27, 106 (blackthorn whips)

Hedgerow	Photographs	Description
H1	Photo 7. H2a	Hawthorn (<i>Crataegus</i> <i>monogyna</i>) dominant hedgerow. Sycamore (Acer pseudoplatanus) also present.

Table 4. Target notes

Target note	Description and photographs	Notes on potential faunal /habitat value
1	Rubble pile Fubble pile Fhoto 8. TN1	Amphibian/reptile/small mammal shelter
2	Dilapidated corrugated metal pen Fhoto 9. TN2	N/A
3	Small timber hutch Fhoto 10. TN3	N/A
4	Silver weed patch	Invertebrates
5	Small timber hutch	N/A

	Photo 12. TNS	
6	Blackthorn whips Fhoto 13. TN6	Invertebrates
7	Canal View of the second seco	Otter, fish, waterfowl, invertebrates, amphibians
8	Clam shells Fhoto 15. TN8	Evidence of likely otter presence
9	Mammal foraging	Evidence of mammal foraging (potential badger)



Building Inspection Results

Building risk	Description	Features with potential bat roost habitat (PBRH).
Negligible	Brick and timber-built chicken coop. Exterior is	N/A
risk of	most access into the interior. Interior is	
supporting	cobwebbed. No evidence of bats found. Masonry	
bats	in good condition.	

Table 5: Visual inspection results.



Photo 18. Exterior



Photo 20. Interior



Photo 19. Rear



Photo 21. Interior



Figure 14. UKHAB map within the redline boundary.

5.3 Assessment of habitats

The site is a traditional orchard, which is a priority habitat. There are a number of mature trees, many with veteran features, within the orchard. The grassland is other neutral grassland, and has a range of species present; however, species are noted as common and widespread.

5.4 Designated sites

The site is located just to the east of the Lower Derwent Valley which is a designated Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site, and National Nature Reserve (NNR). The boundaries of these statutory sites are shown on the figure below. The site does not fall within the boundaries of the Lower Derwent Valley; however, it is within the SSSI impact zone.

The Lower Derwent Valley SPA qualifying features are breeding Northern shoveler (*Anas clypeata*), non-breeding Bewick's swan (*Cygnus columbianus*), Eurasian wigeon (*Mareca penelope*), Eurasian teal (*Anas crecca*), European golden plover (*Pluvialis apricaria*) and Ruff (*Philomachus pugnax*), and the assemblage of migratory birds. The SAC qualifying species include lowland hay meadows, alluvial forests with alder and ash, and otter.



Figure 15. Proximity of site to designated sites. MAGIC maps.

5.5 Species and species groups

Full results of the ecological data search for species records within 2km of the site are available upon request.

5.5.1 Plants

215 plant records were returned from the record search. None relate directly to the site, however two relate to the adjacent watercourses of Nuttall's waterweed (*Elodea nuttallii*) and Flat-stalked pondweed (*Potamogeton friesii*).

Species identified on-site are generally common and widespread, consisting of grasses and forb species, and are of relatively low botanical interest.

5.5.2 Great crested newt (GCN)

9 records of amphibians were returned from the record search, including 1 record of GCN (*Triturus cristatus*) from 2003 near Elvington. There is one pond within 250m, however this is located on private land and was not accessed during the site visit. There are no ponds on-site.

The site provides some suitable habitat for the terrestrial stage of GCN, such as in the grassland when tussocky and under rubbles piles (TN1).

5.5.3 Herptiles

Habitats on-site also provide some suitable habitat for other amphibians such as common toad (*Bufo bufo*) and common frog (*Rana temporaria*), of which some were identified during the site visit and there are records of nearby. No records of reptiles were returned from the record search; however, the grassland may offer some habitat if present.

5.5.4 Birds

314 bird records were returned from the record search, some of which relate to the adjacent YWT Wheldrake Ings of Kingfisher (*Alcedo atthis*), Bittern (*Botaurus stellaris*), red kite (*Milvus milvus*), and lapwing (*Vanellus vanellus*). The site exhibits a range of nesting opportunities for

birds including hedgerows and trees. No hedgerows will be lost to the development; however, some trees will be lost. Most trees will be retained for alternative nesting habitat, therefore the impact is considered low.

There will be a loss of bird foraging habitat, such as for birds of prey like barn owl (*Tyto alba*), however the majority of the grassland on-site will remain as is, thus the effect will be negligible.

5.5.5 Bats

48 bat records were returned from the record search. The closest records to the site are of two common pipistrelle (*Pipistrellus pipistrellus*) records, both from 2009 from properties to the north and south of the site.

The chicken coop on-site provides negligible roosting habitat for bats; therefore, no further survey effort is recommended. Some more mature large trees on-site provide some potential roosting habitat in bark splits and knots. The wider site also provides a range of foraging habitat including hedgerows, woodland, and the adjacent waterway.

5.5.6 Badgers

One record of badger (*Meles meles*) was returned from the record search ~2km east from the site in 2017. There is suitable foraging habitat on-site for the species, and some evidence of mammal foraging (potentially badger) was identified in the grassland (TN9). No evidence of a sett was found.

5.5.7 Water vole and otter

12 records of water vole (*Arvicola amphibius*) were returned from the record search, one of which was ~150m from the site in 2000. The adjacent canal (TN7) provides suitable habitat for the species; however, no signs (droppings, feeding remains) were identified along the bank when inspected. It is also unlikely water vole would enter the area of proposed works as generally stay along the banks of watercourses.

23 records of Otter (*Lutra lutra*) were returned from the record search. The nearest to the site is approximately 200m north under the bridge over the canal in 1997. The adjacent waterways provide ideal habitat for the species, and some feeding remains of clam shells were identified along the bank (TN8). No evidence of a holt was found.

5.5.8 Hedgehog

3 records of hedgehog (*Erinaceus europaeus*) were returned from the record search. Suitable foraging habitat is provided in grass and hedgerows. Hedgehogs are a SOPI under the 2006 NERC act, and therefore are scoped into the assessment.

6 Description of the proposed development

The proposed development is for the conversion of the chicken coop and the construction of an access track to an additional lodge.



Figure 16. Proposed development.

7 Assessment of effects and mitigation

7.1 Designated sites

7.1.1 Effects

The site lies adjacent to a number of designated sites including SACs, SPAs, SSSI, NNR, Ramsar, YWT reserve. The Lower Derwent Valley qualifying features/species include a number of waterfowl species, and visiting dogs may cause disturbance to these if allowed access; therefore, this should be restricted. While the development is at a small scale, there may be minor impacts due to increased human activity within the area causing disturbance such as noise and increased public access to designated sites including dog walking. However, the proposed development is on the other side of The Beck from the designated areas, and there is no public access by footpath connecting the site with the designated areas.

7.1.2 Mitigation measures

Restrictions should be put in place to reduce impacts to the designated areas. These should include:

- Rules to visitors of the site such as:
 - noise restrictions (no amplified music outdoors or fireworks).
 - a dogs on leads policy at the site.
- The area around the development should ideally be fenced to prevent dogs from accessing the canal side.
- Informative signs and/or leaflets could also be placed on-site to educate visitors of the adjacent sites, such as YWT Wheldrake Ings, and how to access the sites and other information, such as promoting dogs on leads around these areas.
- A new soak away will also be installed to prevent surface run-off into adjacent water courses.
- Construction works should be limited to daytime working only, to avoid both light and noise/vibration disturbance at night.

With these appropriate planning conditions, the development will have minimal impact on the protected areas due to the small scale of the development. Any cumulative impacts should be addressed by the planning authority at a strategic level.

7.1.3 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.2 Habitats and plants

7.2.1 Impact and effects prior to mitigation

There will be a loss of some trees and other neutral grassland (traditional orchard) to facilitate the development, however there will be an abundance retained on the remainder of the site. There will be no loss of hedgerows.

The species identified are common and widespread, and of relatively low botanical interest. Overall impacts on habitats and plants have been assessed as 'negative' (not significant).

7.2.2 Mitigation measures

7.2.3 The grassland is currently mown; it is recommended that it, or areas (excluding tree bases), are left to become tussocky, with a mowing regime implemented to provide a range of microclimates through varied sward height.

7.2.4 Restorative pruning of more mature trees to maintain longevity of the fruit trees should also be undertaken.

7.2.5 Additional planting of young trees should also be undertaken where proportionate to increase succession of the habitat.

7.2.6 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.3 Herptiles, including GCN

7.3.1 Impact and effects prior to mitigation

The development may cause harm to any individuals present when conducting works. Effect prior to mitigation is considered 'negative' (not significant).

7.3.2 Mitigation measures

To mitigate the construction risks to amphibian and reptile species Reasonable Avoidance Measures (RAMs) should be incorporated for the proposed works.

Precautionary and 'Reasonable Avoidance Measures' (RAM's):

• Work should ideally take place during the newt active season which runs from February to October (avoiding the hibernation period).

- The area of works across the orchard for the access track and proposed lodge should be kept mown short for 6 weeks prior to construction to make the area less attractive to amphibians and reptiles.
- Piles of cleared vegetation should be removed from the site in the same day or placed in their final location on-site.
- Building materials should be stored on pallets.
- Materials should be put in skips immediately or stored on pallets.
- Any trenches dug should be filled in the same day or covered to prevent any amphibians/reptiles from falling in.
- If any great crested newts are found during the works, then all works must cease, and further advice sought from the ecologist or Natural England.

7.3.3 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.4 Bats

7.4.1 Impact and effect prior to mitigation

Lighting on-site may impact foraging bats. Effect prior to mitigation is considered 'negative' (not significant).

7.4.2 Mitigation measures

It is recommended that any lighting of trees or hedgerows is avoided post-development. Low levels of lighting should be used around the lodges, limited to downward illumination and not the wider landscape e.g. tree canopies, to maintain the ecological functionality of the site for potential commuting and foraging. See below for lighting recommendations if required.

- a) Metal halide and fluorescent sources of light should not be used and lack UV elements.
- b) LED lighting should be used where possible due to their sharp cut-off, lower intensity, good colour rendition, and dimming capabilities.
- c) A warm-white spectrum (ideally less than 2700 Kelvin) should be adopted to reduce the blue light component.

- d) Lighting should feature peak wavelengths higher than 550nm to avoid the component most disturbing to bats.
- e) Column heights should be carefully considered to minimise light spill.
- f) Lights should always be mounted on the horizontal, ie no upward tilt.
- g) Accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it to only where it is needed.

7.4.3 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.5 Breeding birds

7.5.1 Impact and effect prior to mitigation

Removal of trees may impact breeding birds. Effect prior to mitigation is considered 'negative' (not significant).

7.5.2 Mitigation measures

Removal of significant vegetation should be undertaken outside the bird breeding season (March-August), or a pre-works check conducted. Should active nests be found, works should cease to the areas until all chicks are fully fledged.

7.5.3 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.6 Hedgehogs

7.6.1 Impact and effect prior to mitigation

There may be an impact to foraging hedgehogs. Effect prior to mitigation is considered 'negative' (not significant).

7.6.2 Mitigation measures

7.6.3 Works should be restricted to daylight working.

7.6.4 As a precautionary measure, during construction deep trenches and excavations should be covered overnight, or left with a plank or similar, with a slope of no more than 45 degrees to allow hedgehogs, and small mammals escape if they fall in.

7.6.5 If any fencing is installed around the lodges, holes will be put into the bases, allowing hedgehogs to move across the site and into the surrounding landscape.; holes should be 13cm x 13cm.

7.6.6 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.7 Otter and water vole

7.7.1 Impact and effect prior to mitigation

In the absence of mitigation measures, construction activities on-site could result in disturbance to otter (feeding areas and commuting routes) due to increased noise, vibration, lighting, and visual effects. Effect prior to mitigation is considered 'negative' (not significant).

7.7.2 Mitigation measures

7.7.3 Works should be restricted to daylight working.

7.7.4 Where possible, construction compounds will be fenced off to minimise the risk of otter entering them.

7.7.5 Excavations will also have an access ramp erected and secured in place to allow mammals to escape if they fall in.

7.7.6 Works will be restricted to daylight hours where possible.

7.7.7 Any required lighting will be positioned and directed to minimise intrusion and disturbance of river corridors.

7.7.8 If otter is encountered. All work within 30m will cease as soon as it is safe to do so, and a suitably qualified ecologist will be contacted.

7.7.9 Residual effect post-mitigation

'Neutral' (not significant) at site level.

7.8 Badger

7.8.1 Impact and effect prior to mitigation

Due to potential evidence of badger foraging on-site, mitigation has been included as a precaution for their presence and the chance that works may disrupt badger foraging and commuting habitat during the construction phase; most of the grassland will remain available for continued foraging post-development. There is no evidence to suggest the works will impact a badger sett.

The effect on badger foraging/commuting prior to mitigation is considered 'negative' (not significant) at site level.

7.8.2 Mitigation

7.8.3 Works should be restricted to daylight working.

7.8.4 Where possible, construction compounds will be fenced off to minimise the risk of badger entering them.

7.8.5 Excavations should be covered overnight or have an access ramp erected secured in place to allow mammals to escape if they fall in.

7.8.6 Residual effect post-mitigation

Neutral' (not significant) at site level.

7.9 Residual effects

The measures proposed within the above sections will mitigate all negative effects to a level where the ecological constraint is not considered significant or negative. There should be no residual effects as a result of the development.

8 Recommendations for ecological enhancement & compensation

8.1.1 Professional quality bird and bat boxes could be installed on trees on-site within the woodland.

9 Conclusions

The application area has been subjected to appropriate ecological assessment which is proportionate to the scale of development and inherent value of the site.

The Ecological Impact Assessment confirms that, in the absence of mitigation, there may be a negative impact on designated sites, habitats, herptiles (including GCN), foraging bats, otter, birds, badger and hedgehog. Mitigation measures have been designed to safeguard the status of these, reducing impact to neutral effects, these are detailed in Section 7.

The enhancement measures outlined in Section 8 will secure positive gains to local biodiversity when compared to baseline conditions.

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Appendix 1: Relevant policy and legislation

Planning policy

National Planning Policy Framework (England) NPPF July 2021

National planning guidance for ecological issues is set out in the updated July 2021 National Planning Policy Framework (NPPF). The requirements are consistent with those specified in the updated February 2019 NPPF; which advocate biodiversity net gain and improvement where possible, as evidenced below.

Paragraph 179 refers to the requirement of plans to "protect and enhance biodiversity and geodiversity" In order to do this, "plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

In paragraph 180 the NPPF indicates that "when determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- 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;

- 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; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."

The accompanying ODPM / Defra Circular 06/2005 remains pertinent; circular 06/2005 is prescriptive in how planning officers should deal with protected species, see paragraphs 98 and 99:

The presence of a protected species is a material consideration when considering a proposal that, if carried out, would be likely to result in harm to the species or its habitat (see ODPM/Defra Circular, para 98)

LPAs should consider attaching planning conditions/entering into planning obligations to enable protection of species. They should also advise developers that they must comply with any statutory species protection issues affecting the site (ODPM/Defra Circular, para 98)

The presence and extent to which protected species will be affected must be established before planning permission is granted. If not, a decision will have been made without all the facts (ODPM/Defra Circular, para 99)

Any measures necessary to protect the species should be conditioned/planning obligations used, before the permission is granted. Conditions can also be placed on a permission in order to prevent development proceeding without a Habitats Regulations Licence (ODPM/Defra Circular, para 99).

The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances.

Further to NPPF and OPDM Circular 06/2005, Section 40 of the Natural Environment and Rural Communities Act (2006) states that 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of

conserving biodiversity'. Section 40(3) also states that 'conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'.

Appendix 2: Glossary of bat roost terms

Bat Roost Definitions:

Day roost: a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.

Night roost: a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

Feeding roost: a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.

Transitional / occasional roost: used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Swarming site: where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.

Mating sites: where mating takes place from later summer and can continue through winter.

Maternity roost: where female bats give birth and raise their young to independence.

Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.

Satellite roost: an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Appendix 3: Standard good working practices in relation to bats

Bats are small, mobile animals. Individual bats can fit into gaps 14-20mm wide. They can roost in a number of places including crevices between stonework, under roof and ridge tiles, in cavity walls, behind barge boards, in soffits and fascias and around window frames. Builders should always be aware of the potential for bats to be present in almost any small gap accessible from the outside in a building. The following guidelines are provided in order to reduce the risk of harm to individual bats.

- Roofs to be replaced, or which are parts of a building to be demolished, should be dismantled carefully by hand. Ridge tiles, roof tiles and coping stones should always be lifted upwards and not slid off as this may squash/crush bats.
- Re-pointing of crevices should be done between April and October when bats are active. Crevices should be fully inspected for bats using a torch prior to re-pointing.
- Any existing mortar to be raked should be done so by hand (not with a mechanical device).
- Look out for bats during construction works. Bats are opportunistic and may use gaps overnight that have been created during works carried out in the daytime.
- If any bats are found works should stop and the Bat Conservation Trust (0845 1300 228) or a suitably qualified bat ecologist should be contacted.

If it is necessary to pick a bat up always use gloves. It should be carefully caught in a cardboard box and kept in a quiet, dark place. The Bat Conservation Trust or a suitably qualified bat ecologist should be contacted.

Natural Environment and Rural Communities (NERC) Act 2006 – Habitats and Species of Principal Importance (England and Wales)

The NERC Act came into force on 1st October 2006. Sections 41 and 42 (S41 and S42) of the Act require the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England and Wales respectively. The list has been drawn up in consultation with Natural England (NE) and Countryside Council for Wales (now NRW) as required by the Act. In accordance with the Act the secretary of state keeps this list under review and will publish a revised list if necessary, in consultation with NE and NRW.

The S41 and S42 lists are used to guide decision makers such as public bodies, including local and regional authorities, and utilities companies, in implementing their duty under Section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England and Wales, when carrying out their normal functions, including development control and planning. This is commonly referred to as Biodiversity Duty.

EcIA: August 2023

Guidance for public authorities on implementing Biodiversity Duty has been jointly published by Defra and the Welsh Assembly. One of the key messages in this document states that "conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them". In England, local authorities are required to take measures "to promote the preservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species" linking to national and local targets through policy and by association, therefore, through development control.

In 2007, the UK biodiversity Action Plan (BAP) Partnership published an updated list of priority UK species and habitats covering terrestrial, freshwater and marine biodiversity to focus conservation action for rarer species and habitats in the UK. The UK post 2010 Biodiversity Framework, which covers the period from 2010 – 2020 now succeeds the UK BAP. The UK priority list contained 1150 species and 65 habitats requiring special protection and has been used as a reference to draw up lists of species and habitat s of principal importance in England and Wales.

In England, there are 56 habitats of principal importance and 943 species of principal importance on the S41 list. These are all the habitats and species that are found in England that were identified as requiring action in the UK BAP and which continue to be regarded as conservation priorities in the subsequent UK post -2010 Biodiversity Framework.

In Wales, there are 54 habitats of principal importance and 557 species of principal importance on the S42 list. This includes three marine habitats and 53 species that were not on the list of UK BAP priority habitats, but which are recognised as of principal importance for Wales.

Government Circular 06/2005 and Standing Advice from NE

Paragraph 99 of Government Circular 06/2005 advises that "it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted".

The reasoning behind this statement stems from the fact that, without appropriate protected species surveys to confirm presence or likely absence and where an effect upon the species is considered likely should the development proposal proceed, planning permission may be inadvertently granted for an action that would contravene protected species legislation or the local planning authority may not have due regard to its duty in respect of protected species in advance of determination and this could result in issues in the ability to implement the planning permission. For example, if a situation were to arise where protected species were discovered after planning permission had been granted, it may not be possible to incorporate mitigation measures into the scheme, at least without a major change to the scheme design that would require re-submission to the planning authority.

Paragraph 118 of the NPPF advises that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying certain principles. One of these principles advises that if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

Paragraph 98 of Circular 06/2005 advises that "the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult with NE before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should advise developers that they must comply with any statutory species' protection provisions affecting the site concerned...."

Standing advice from NE provides advice to planners on deciding if there is a 'reasonable likelihood 'of protected species being present. It also provides advice on survey and mitigation requirement s. When determining an application for development that is covered by standing advice, in accordance with guidance in Government Circular 06/2005, Local planning authorities are required to take the standing advice into account. NE advises that standing advice is a material consideration in the determination of applications in the same way as a letter received from NE following consultation.

European Protected Species (Animals)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates the various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

"European protected species" (EPS) of animal are those which are present on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 41 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together these pieces of legislation make it an offence to:

- a) Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
- b) Possess or control any live or dead specimens or any part of, or anything derived from these species
- c) Deliberately disturb wild animals of any such species
- d) Deliberately take or destroy eggs of such an animal or
- e) Intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct such a place

For the purposes of paragraph c), disturbance of animals includes in particular any disturbance which is likely

- a) To impair their ability
 - I. To survive, to breed or reproduce, or to rear or nurture their young, or
 - II. In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- b) To affect significantly the local distribution or abundance of the species to which they belong.

Although the law provides strict protection to these species, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by NE for development works. In accordance with the requirements of the Regulations (2017), a licence can only be issued where the following requirements are satisfied:

- a) The proposal is necessary "to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance to the environment
- b) There is no satisfactory alternative
- c) The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

Wild mammals

Under the Wild Mammals (Protection) Act 1996, it is an offence to kill or injure any wild mammals by various means, including crushing and suffocating; therefore, consideration must be given to the humane exclusion or destruction of foxes and rabbits before work starts.

Birds

All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use of being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

The conservation of Habitats and Species (Amendment) Regulations 2012 has placed new duties on Local Authorities and National Park Authorities (and others) in relation to wild bird habitat. Regulation 9A(2) and (3) require that "in the exercise of their functions as they consider appropriate" these authorities must take steps to contribute to the "preservation, maintenance and reestablishment of a sufficient diversity and area of habitat for wild birds in the UK, including by means of upkeep, management and creation of such habitat....."These authorities are also required, under Regulations 9A(8) to "use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds".

UK Biodiversity Action Plan

The UK Biodiversity Action Plan (BAP) identified a number of species and habitats as priorities of conservation. Those of particular relevance to this site are:

- Soprano pipistrelle bat (Pipistrellus Pygmaeus)
- Brown long-eared bat (Plecotus auritus)
- Noctule bat (Nyctalus noctula)
- Brown hare (Lepus europaeus)
- West European hedgehog (Erinaceus europaeus)
- Otter (Lutra lutra)
- Common toad (Bufo bufo)
- Great crested newt (Triturus cristatus)
- Grass snake (Natrix natrix)
- Common Lizard (Zootoca vivipara)