

Memorandum

Subject Ecological Walkover – MMB Wombwell (Cloughfields) CSO

To Britta Hennrich

From Larissa Masterson, Ecologist – MM
Madeline Ford, Ecologist – MM

Checked by Nicola Johnson, Principal Ecologist – MM

Approved by Rebecca Purslow, Technical Director Ecology – MM

Our reference 100381144-002

Date 21/02/2025

Your reference UX02-11

Notes Rev B

1 Background

Mott MacDonald Bentley (MMB) have been commissioned on behalf of Yorkshire Water (YW) Services to undertake an ecological survey at Wombwell, Cloughfields, located in Barnsley, South Yorkshire, hereafter referred to as the 'Site' (Ordnance Survey (OS) National Grid Reference(NGR): SK 36620 99959). This location is being surveyed as part of the Storm Spillway Reduction Programme, including proposed tank and test site locations. An overview of the Site is shown in Figure 1.1. The Site is immediately adjacent to Clough Fields road, to the south, with residential areas directly opposite and to the east. Wooded areas are present on Site with an area of woodland to the east separating the Site from the residential area.

This memo is solely for the guidance and use by Mott MacDonald Bentley Contractors (MMBC) and YW Services, and reports on the ecological constraints of the works, which informed the recommendations detailed in section 4. The recommendations were provided to be implemented during the ground investigation (GI) (commenced in August 2023 and completed) and main works (commenced in July 2024 and are ongoing) to minimise the impacts to the ecological receptors present.

Figure 1.1 – Location Plan showing the location of Site 1.



Source – MMB/YW 2025

The Site comprises of:

- The installation of a new storm spillway storage; and
- Creation of surface water separation and attenuation system.

The GI works and main works required vegetation clearance, the digging of trial pits and bore holes.

2 Methodology

2.1 Survey methodology

A desk study was undertaken using information from Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) maps website (<https://magic.defra.gov.uk/>) and the YW ecological database, which was provided to Mott MacDonald Bentley (MMB) by YW. Ecological records within 2km of the Scheme were used to inform this assessment.

An ecology walkover at the Site was undertaken on 12-13 July 2023 by an ecologist and graduate ecologist from Mott MacDonald, both experienced in protected species surveyors (including bats, water vole, badger and otter) and having the minimum of Qualifying membership of the Chartered Institute of Ecology and Environmental Management (CIEEM). During the walkover all habitats within the Zone of Influence (Zoi) were surveyed using standard UK Habitat Classification methodology (UKHab, 2020). The Zoi for this proposed Scheme is defined as the area of works and immediate surrounding habitat which could potentially

be affected by the works which are shown by the yellow highlighted areas in Figure 1.1. Habitats were classified to level 4 where possible. In addition, any potential for (habitat suitability), or evidence of protected or notable species or invasive non-native species were recorded. Where suitable habitat existed, the ZOI was extended for certain protected and notable species, including up to 30m for bat species as well as 500m desk study search for ponds to consider potential impacts on great crested newts. UKHab results from the walkover were reported using the DAFOR (Dominant, Abundant, Frequent, Occasional, Rare) scale, indicating the cover of vegetation.

2.2 Limitations

Ecological records obtained during the desk study do not represent a comprehensive list of species potentially found in the area. Records from within the last 20 years only are considered in this memo, with records earlier than this being considered historic and therefore less relevant.

Ecological surveys are limited to factors which affect the presence of plants and animals, such as time of year, migration patterns, weather, and behaviour. With a single Scheme visit, it is possible that certain species may have been overlooked or under-recorded during the assessment, as optimal survey periods vary from species to species.

It should be noted that this report does not:

- constitute an Ecological Impact Assessment;
- assess waterbodies within 500m of the Scheme for suitability for great crested newt (GCN) *Triturus cristatus*
- assess watercourses up to 30m from the Scheme for suitability for otter *Lutra lutra* and water vole *Arvicola amphibius*; and
- assess habitat suitability for badger *Meles meles* or record badger field signs within 50m of the Scheme.

The survey does, however, provide a snapshot of the ecological features present on the day of the survey.

With reference to CIEEM's "Advice note on the Lifespan of Ecological Reports and Surveys" the data collected as part of the survey effort undertaken for this report is valid for 18 months, after which the data should be assessed by an experienced ecologist and a repeat survey may be required.

It should be noted that this updated report is retrospective to GI and main works commencing, with MMB completing the necessary Ecological Clerk of Works (ECoW) for the Site. Recommendations are those that were made by Mott MacDonald at the time of submitting the initial report in 2023.

3 Results

3.1 Desk Study

A search of the YW ecological records database returned 837 ecological records of 46 species, including amphibian, bird, insect (butterfly and moth), reptile, terrestrial mammal and flowering plant species, within a 2km radius of the Scheme in the last 20 years. Records were returned for protected species and are described further below. In addition, records of west European hedgehog *Erinaceus europaeus*, the closest record being 352m from the Site in a private garden, and brown hare *Lepus europaeus*, with the closest record being 1.74km for the Site were returned. Notable plant species returned from the desk study included bluebell *Hyacinthoides non-scripta*, and cornflower *Centaurea cyanus*.

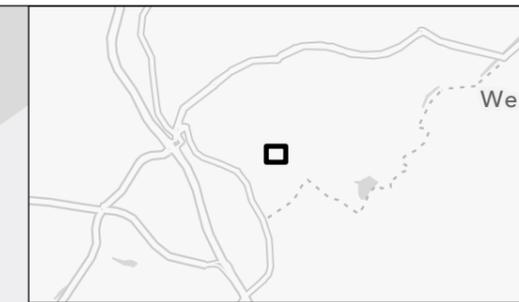
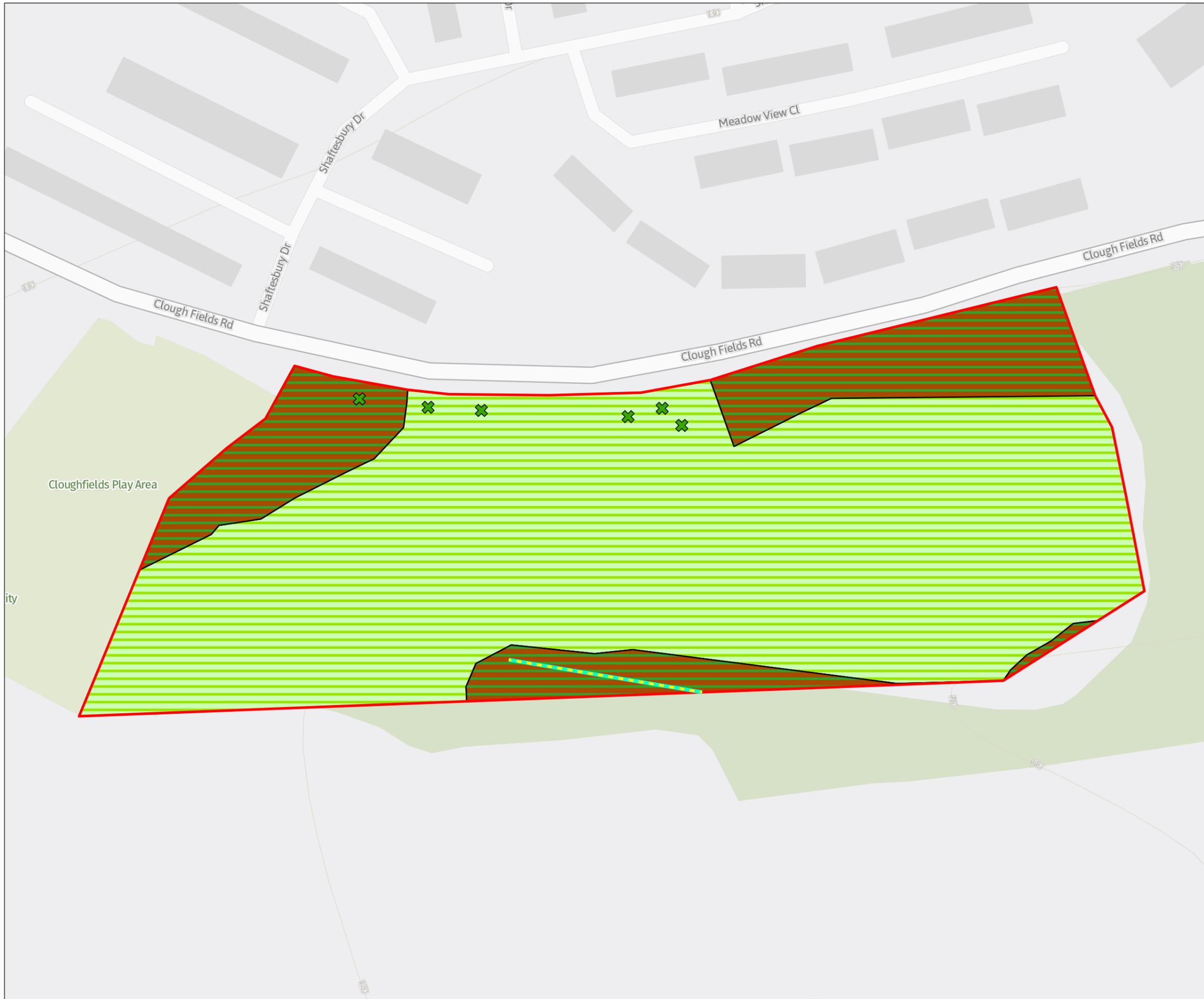
Three statutory designated sites; Dearne Valley Wetlands Sites of Special Scientific Interest (SSSI) (located c.1.09km north); Elsecar Reservoir Local Nature Reserve (LNR) (located c.1.24km southeast) and Potter Holes Plantation LNR (located c.1.45km west) were identified on YW records within 2km of the Scheme. Dearne Valley Wetlands is a SSSI due to aggregations of breeding birds and the ecologically important habitats present including fen, marsh and swamp, standing open water and canals, and woodland (mixed broadleaved and yew woodland). The two other sites are deemed important due to extensive woodland, with Potter Holes Plantation having semi-ancient woodland developed in and around old bell-pits with newer planted woodland adjacent.

3.2 Habitats

Habitats identified throughout the ZOI of the Site include other neutral grassland (g3c), other neutral grassland which comprised of scattered trees (g3c, 11), mixed deciduous woodland (w1f), mixed deciduous woodland which comprised of a ditch (w1f,191) that was considered to be seasonally wet (119).

Figure 3.1: Site 1 – Cloughfields CSO, UK Habitat Classification map

Source: Mott MacDonald, 2025



Red Line Boundary

Rural tree

r1, 50 - Ditch

g3c - Other neutral grassland

w1f - Lowland mixed deciduous woodland

Coordinate system: British National Grid; Datum: OSGB 1936

Data sources: Contains OS data © Crown Copyright and database right 2025
 Contains data from OS Zoomstack, Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS; Scheme data and UK habitat classification, Mott MacDonald 2025

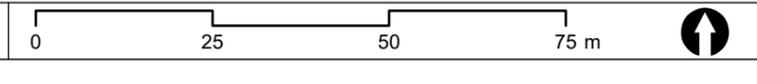
MMB
 MOTT MACDONALD BENTLEY

Mott MacDonald Bentley
 Bank House
 27 King Street
 Leeds
 LS1 2HL
 T 0113 397 2769
 W mottmacbentley.co.uk/mmb



**Cloughfields CSO
 UK Habitat Classification**

Drawn G Rhodes	GIS Checked S Glover	Checked N Johnson	Approved R Purslow
Scale at A3 1:1,000	Status INF	Revision 02	Security STD



UX0211-MMB-WTN-NCS-DR-E-0001

3.2.1 Other neutral grassland (g3c)

Other neutral grassland was present, the grassland had a sward measuring approximately 30cm high and looked to be less regularly (possibly annually) managed with some well-walked areas indicating a commonly used pathway. The grassland was dominated by perennial rye grass *Lolium perenne*, abundant cover of Yorkshire-fog *Holcus lanatus* and frequent cover of meadow foxtail *Alopecurus pratensis*, cocksfoot *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius* and rough meadow grass *Poa trivialis*. Occasional species included meadow buttercup *Ranunculus acris*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, creeping thistle *Cirsium arvense*, birds-foot trefoil *Lotus sp.* and ribwort plantain *Plantago lanceolata*. The grassland had rare cover of red bartsia *Odontites vernus*, broad-leaved dock *Rumex obtusifolius*, ragwort *Senecio sp.*, common vetch *Vicia sativa*, greater willowherb *Epilobium hirsutum*, black medick *Medicago lupulina*, cow parsley *Anthriscus sylvestris*, and horsetail *Equisetum sp.* Other neutral grassland also contained scattered hawthorn *Crataegus sp.* saplings.

3.2.2 Lowland mixed deciduous woodland (w1f)

Lowland mixed deciduous woodland present was dominated by immature, semi mature and mature ash *Fraxinus excelsior*, with frequent occurrences of hawthorn and lime *Tilia sp* and occasional English oak *Quercus robur*. Deadwood was also present including a fallen mature lime tree (Photo 5).

Ground flora consisted of bracken, bramble scrub (h3d), with frequent cleavers *Galium aparine* and common nettle *Urtica dioica*. A seasonally wet ditch continued throughout the woodland, with shallow (approximately 1 metre depth), muddy flowing water further west.

3.3 Protected Species

Protected and / or notable species that could potentially use the habitats that are present within the footprint of the Site include nesting birds (including Schedule 1 species), bats – roosting, commuting and / or foraging, badger and widespread reptiles, water vole, brown hare and west European hedgehog..

3.3.1 Badger

Three records of badger within 2km of the Site were returned, comprising of a field observation and sett evidence from 2010, 2017 and 2020 (details of the location are withheld from this report as badgers are still subject to persecution within some regions).

The lowland mixed deciduous woodland within the Site provides suitable habitat for badger sett construction. However, no evidence of badger was identified during the Site walkover.

Further inspection of woodland for badger activity may be required if works are likely to impact the woodland. via direct impact or through heavy construction works and large excavation – see recommendations.

Badgers are protected in the UK under the Protection of Badgers Act 1992, which makes it an offence to: wilfully capture, kill or injure (or attempt to capture, kill or injure) a badger; intentionally or recklessly damage, destroy or block access to their setts; and disturb badgers in setts.

Penalties for breaking the law can include large fines, imprisonment and the seizure of equipment.

3.3.2 Bats

Bat species records including noctule bat *Nyctalus leisleri*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared *Plecotus auratus*, and whiskered bat *Myotis mystacinus* were returned from the YW desk study. The most recent record of bat species occurred in 2020

including unidentified bat, noctule bat, common pipistrelle and soprano pipistrelle species. Species including unidentified bat, noctule bat, common pipistrelle and soprano pipistrelle species were also the closest recorded at 1.3km from the Site.

The lowland mixed deciduous woodland habitat and seasonally wet ditch present within the Site, was assessed as having Low suitability to support foraging and / or commuting bats according to Bat Conservation Trust (BCT) guidelines. The impacts to roosting bats, if present, are not significant as works will be occurring during the day and GI works will not be significant enough to cause disturbance.. The main works (which commenced July 2024) are also unlikely to have a significant impact on the habitats present, as there has been and will not be loss of suitable foraging and commuting habitat or disturbance of flight-paths through noise, vibration and light spill, therefore bat activity transect surveys are not considered to be required at this time.

Suitable roosting features were identified within the Zol within the lowland mixed deciduous habitat including a mature ash tree (T1 - SK 36633 99910), with a rot hole on a branch 19m high on the northwest side, mature ash (T2 - SK 36619 99901), having two rot holes 10-12m high and a split branch on south side and a mature oak (T3 - SK 36646 99908), with a hollow space at the trunk of the tree on southern side. Trees T1, T2 and T3 were assessed as having Moderate suitability to support roosting bats, with reference to the BCT guidelines. If the trees are to be removed as part of the proposed works or impacted during the works, then additional bat surveys (e.g. dusk emergence and / or dawn re-entry surveys) may be required.

All bat species are protected under the 1981 Act and the Habitats Regulations 2017 (as amended). In summary it is an offence to intentionally or recklessly kill, injure, disturb or capture any bats or damage, destroy or obstruct access to any structure used for breeding or resting by them. Seven species are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006 as species of principal importance (SPI) for nature conservation.

3.3.3 Great crested newt and other amphibians

The YW desk study has returned common toad *Bufo bufo* and ten records of GCN, including eggs, within 2km of the Scheme located in Birdwell, Tankersley Common, Hoyland North and Potter Holes Plantation LWS LNR. The nearest record included a male GCN and 'lots of eggs' in Tankersley pond seven, which was 937m from the Site.

The seasonally wet ditch in the lowland mixed deciduous woodland and surrounding habitat is considered to have some suitability for amphibians due to damp conditions. However, it is likely to be unsuitable for breeding GCN, due to the limited depth of the water (less than 1m) and seasonal depth not aligning with GCN breeding period (mid March to mid June).

Two unknown ponds (located 467m and 254m south of Site 1), another unknown pond within the grounds of Hoyland Common Primary School (334m west from Site 3), two unknown ditches (312m and 341m southwest) and one unknown stream (473 northwest of Site 3) were identified via the desk study. Further surveys to assess waterbodies within 500m of the site maybe required depending on the scope of the works, see Section 4 for further details.

GCN are fully protected as European Protected Species (EPS) and are protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to: intentionally or recklessly capture, kill, disturb, or injure GCN; or damage, destroy or obstruct a resting, breeding or sheltering place. They are also an SPI.

3.3.4 Nesting birds (including Schedule 1 species)

YW ecological records returned twenty-five species of bird, of which twelve were Schedule 1 bird species, including brambling *Fringilla montifringilla*, fieldfare *Turdus pilaris*, garganey *Anas querquedula*, kingfisher *Alcedo atthis*, red kite *Milvus milvus*, barn owl *Tyto alaba*, peregrine *Falco peregrinus*, black redstart *Phoenicurus ochruros*, redwing *Turdus iliacus*, whooper swan *Cygnus cygnus*, Cetti's warbler *Cettia cetti*, and greylag goose *Anser anser*. Most recent records included redwing, skylark *Alauda arvensis*, cuckoo *Cuculus canorus*, reed bunting *Emberiza schoeniclus*, house sparrow *Psittacus domesticus*, and yellowhammer *Emberiza citrinella*. The closest of which was a reed bunting 1.5km away.

There is potential for nesting birds within scattered trees, other neutral grassland and lowland mixed deciduous woodland throughout the Site. Areas within the Site and adjacent to the Site which are not to be directly impacted by works, need to be considered as, should Schedule 1 nesting birds be present, there could be significant disturbance caused by work noise and vibration.

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to kill, injure or take any wild bird or to take, damage, or destroy a nest (whilst being built or in use) or eggs. Schedule 1 species of the same act are afforded additional legal protection from disturbance 'whilst it is building a nest or is in, on or near a nest containing eggs or young'. This protection from disturbance also extends to dependent young of Schedule 1 species.

3.3.5 Otter

No records of otter were returned within 2km of the Scheme.

There were no areas identified within the Scheme which were considered to provide suitable aquatic or terrestrial habitat for otters, therefore otters are not considered further within this report.

Otter is fully protected as an EPS and are protected under the 1981 Act (as amended), making it an offence to: intentionally or recklessly capture, kill, disturb or injure an otter; or damage, destroy or obstruct a resting, breeding, or sheltering place. They are also an SPI.

3.3.6 Water vole

No records of water vole were returned within 2km of the Scheme.

The seasonally wet ditch within the ZOI was assessed as providing limited suitable habitat for water vole for foraging, commuting, shelter and breeding, due to the ditch only being seasonally wet as well as lack of vegetation cover or structure. No incidental water vole field signs were identified within the terrestrial habitats immediately adjacent to the ditch during the walkover survey.

Water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in England and Wales. The legislation makes it an offence to: intentionally capture, kill or injure water voles; damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care); disturb them in a place of shelter or protection (on purpose or by not taking enough care); and possess, sell, control or transport live or dead water vole or parts (not water voles bred in captivity). They are also an SPI.

3.3.7

Widespread reptiles

Five records of grass snakes *Natrix helvetica* within 2km of the Scheme were returned between 2010 and 2016 from Worsbrough, Barrow Colliery Barnsley, Barnsley MBC and Tankersley.

The 'other neutral grassland' and woodland habitats have the potential to support basking, commuting, and/or foraging reptiles including the four 'widespread' species of reptile in the UK, which consist of the common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake and adder *Vipera berus*.

These species are afforded partial protection under Schedule 5 of the 1981 Act, it is prohibited to intentionally kill, injure, or trade these species. All UK reptile species are SPI.

3.4 Invasive non-native species

Data records reviewed during the desk study indicated Canada geese *Branta canadensis* and grey squirrel *Sciurus carolinensis* within 2km of the Scheme. Other invasive non-native species (INNS) within 2km of the Scheme include Japanese knotweed *Reynoutria japonica*, the closest of which was a large stand recently treated with herbicide but with some regrowth visible 918m away from the Site, and Indian balsam *Impatiens glandulifera*, with the closest record being 459m from the Site.

No habitats within the Scheme were identified as comprising of INNS. Even though INNS were not identified during the walkover, it is considered possible that some INNS species could be present at a later date.

4 Recommendations

The following recommendations were made below, informed by the desk study and walkover. MMB completed the ECoW for the GI and main works

- A Precautionary Works Method Statement (PWMS) should be produced to capture the precautionary approach to works.
- As no ponds or other possible aquatic habitats are to be removed, and due to the limited size and scope of the works a precautionary approach, methodology including fingertip search, was suggested for ground investigation works (August 2023). This approach would also be effective for the main works (Spring 2024) however this could also prove to be labour intensive. A more efficient approach might to undertake eDNA surveys of ponds and other waterbodies within 500m of the site (timing of the works allowing), however, this could be assessed closer to the time of the works, when the proposals have been finalised. Should GCN be encountered during the works, all work must cease immediately, and advice sought from a suitably qualified ecologist. Further surveys and a GCN mitigation licence may be required prior to further works progressing, dependant on the final scope of the works.
- Where practicable, a distance of 10m should be maintained from any watercourse with the potential for water voles in the future to reduce risk of water vole disturbance. If this cannot be maintained and works are likely to impact the watercourse and/or water vole, then further surveys are recommended.
- Vegetation and tree removal should be conducted outside of the bird nesting season, where possible e.g., removed between October and February, inclusive. Some birds nest outside the core breeding season, such as barn owls and pigeons Columbidae and therefore an ecologist should be consulted prior to removing any vegetation.

- Should vegetation removal be required during the nesting bird season e.g., between March and September inclusive, then it is possible that delays could occur if nesting birds are identified as being present. Should active nests be identified, a demarcation zone will be implemented by the ecologist (zones are species specific but typically no less than a five-metre radius from the nest), within which no works can take place until the chicks have naturally fledged (to be confirmed by the ecologist). The demarcation zone is likely to be larger for certain species and particularly for Schedule 1 species. Schedule 1 birds may also require additional compensation, such as species-specific nest boxes.
- A badger walkover survey should be conducted approximately three months prior to any works commencing on site, including any ground investigation or enabling works. This survey will check for signs of badger activity and setts within 30m of the site, whilst allowing enough time to apply for a Natural England licence to close a sett should it be necessary.
- Even though invasive species were not found on the Scheme, there is evidence of invasive species 2km from the Scheme, the closest being Indian balsam recorded 459m from the Site, and there is potential for them to be present on site. It is therefore recommended that an invasive species management plan is written and agreed prior to construction works in Spring 2024 commencing on the Scheme.
- Any proposals to remove trees T1-T3, or should any impacts to these trees be likely, then dusk emergence / dawn re-entry bat surveys are recommended.
- It is recommended to avoid night working and therefore the use of artificial lighting, where possible. If night working and / or artificial lighting is required, then an ecologist must be consulted prior to commencement of these works. Any artificial lighting which may be required for works should be directional towards the works to avoid disturbance to nocturnal species and may also benefit from the use of cowls.
- Any excavations should be back filled before the end of the day, where this is not possible open excavations should either be covered overnight or fitted with a timber ramp at a 45° angle to prevent entrapment of any animals (secured in place). Scheme personnel should check the excavation prior to works starting the following day for any animals before starting works. Personnel must not attempt to handle or move trapped animals prior to consulting with the ecologist, who will provide instruction of appropriate action.
- To minimise the risk of injuring or impacting reptiles that may be present on the Scheme, any long grass and tall vegetation removal between March and October inclusive, should be done by means of a 'phased cut'. This entails the vegetation being cut to 15cm and then left overnight before cutting it down to ground level the following day or being checked by an ecologist prior to it being cut to ground level. This will be undertaken in a directional manner towards retained suitable habitat. Should a reptile be found during the works, it should be left to move away on its own accord.
- Any spillages of any harmful chemicals or substances should be cleaned up immediately with a spill kit and prevented from entering the watercourse in line with CIRIA 2001. Any spillages which do enter the watercourse should be reported to the Environment Agency for further advice and action.

5 Scheme Photographs

Table 1: Scheme Photographs

Photo Reference Number	Description	Photographs
1	Other neutral grassland	
2	Lowland mixed deciduous woodland	
3	Ground flora of lowland mixed deciduous woodland	
4	Seasonal wet ditch	

Photo Reference Number	Description	Photographs
5	Fallen lime tree	
6	T1	
7	T2	

Photo Reference Number	Description	Photographs
8	T3	

References

Butcher B., Carey P., Edmonds R., Norton L., and Treweek J. (2020). UK Habitat Classification User Manual Version 1.1. Available at: <http://www.ukhab.org> . Last accessed: 18/02/2025.

CIEEM (2019). Advice note on the Lifespan of Ecological Reports and Surveys

Collins, J. ed., (2016). Bat surveys for professional ecologists: good practice guidelines. Bat Conservation Trust.

Construction Industry Research and Information Association (CIRIA) (2001). Control of water pollution from construction Schemes. Guidance for consultants and contractors (C532).

Department for Environment, Food and Rural Affairs (DEFRA), Natural England (c2023). Magic Maps. Available at: <https://magic.defra.gov.uk/MagicMap.aspx> . Last accessed 14/04/2023 Last accessed:18/02/2025

Oldham R.S., Keeble J., Swan M.J.S. and Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4). 143-155.

Yorkshire Water (2023) Yorkshire Water desk study 2023, results provided by MMB 20/07/2023.

Appendix

Appendix A: Overview of the Scheme ZOI – Site 1



Source – MMB/YW 2023