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Ecological Appraisal

Heighington Lane

May 2023

Olive Compliance

Client	Olive Compliance
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	Name	**Position**	**Date**
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Reviewed	James Streets	Director	May 2023

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Tables

Summary

OS Ecology Ltd were commissioned by Olive Compliance in May 2023 to undertake an Ecological Appraisal of a plot of land off Heighington Lane. The site is proposed for the development of an industrial unit with associated parking.

Summary Table	
Habitat Assessment	The site is dominated by ephemeral / short perennial vegetation and bare ground which has been subject to previous disturbance with spoil piles still evident. A small parcel of grassland is present in the north eastern corner with scattered scrub present across the site. Several areas of open water have developed on site; these are generally shallow in depth and some are likely to be ephemeral. An immature hedgerow defines the southern boundary. Habitats are considered to be predominantly of local value comprising bare ground, ephemeral / sort perennial vegetation, ephemeral waterbodies and immature scattered scrub. The small area of semi improved neutral grassland is considered to be of Parish value.
Bats	Overall, the site is considered to be of low suitability to foraging and commuting bats. The woodland off-site to the north is considered likely to provide higher quality habitat and will not be directly affected by the proposals. There are no structures of trees within the site with suitable roosting features and as such roosting bats are considered likely to be absent. Overall, the site is considered to be of up to local value to bird species, however it may be used by species listed on Schedule 1 of the Wildlife and Countryside Act 1981, namely little ringed plover
Birds	The site provides limited nesting and foraging opportunities for birds although the vegetation around the waterbodies may provide some cover. The pond off-site to the south is likely to attract a variety of birds that may also use the site for foraging. The woodland off-site to the north is considered likely to be of higher quality for nesting birds.
Great Crested Newts	There are no ponds or areas of standing water within the site. The Demons Beck to the south of the site was predominantly dry during the survey apart from a small section. Aerial imagery and Ordnance Survey maps identified several ponds within 500m, the closest of which lies approximately 20m from the site boundary with the remainder lying over 400m from the site, and consultation with the Local Records Centre identified the presence of this species within ~430m of the development. The closest pond to the site lies approximately 20m from the site boundary. eDNA survey of this pond in 2020 returned a positive result for great crested newts. In addition, great crested newt eggs were recorded within the pond

	during the survey visit to collect the samples for eDNA analysis in 2020, indicating that this pond is used by the species for breeding. The plot is located within a larger parcel of land for which there is a District Level Licence in place (2021-00102-EPS-DLL).
Badger	No setts were recorded within the development plot during the survey and habitats are considered to be sub optimal for sett creation, with the woodland block to the north providing higher quality habitats. No other field signs of badger were recorded on site however there is potential for badger to forage across the site on occasion. Overall, the development site is considered to be of low value to this species.
Otter	No evidence of otter was recorded on site during the survey. The Demons Beck was predominately dry limiting connectivity between the site and the wider area. Overall, the value of the site to otter is considered to be low.
Water Vole	A small section of the Demons Beck was holding water at the time of the survey. No field signs of water vole were recorded and due to the small area of suitable habitat available it is considered likely that this species is absent from the site. The large waterbody to the south has the potential to support this species however this feature will not be affected by the development.
Priority Butterfly Species	The ephemeral / short perennial vegetation, bare ground and grassland habitats have the potential to support priority butterflies, with larval food source plants scattered throughout the development site. A summary of the survey of the site in 2021 by OS Ecology is as follows: no evidence of dingy skipper butterflies or other butterflies of conservation importance were recorded on site. Although small areas of bird's-foot trefoil were recorded on site, there are larger areas of the species offsite within the area of habitat creation to the south of the site. Overall the value of the site to dingy skipper butterflies is considered to be low, with the value of the site to butterflies as an assemblage considered to be low.[1] As the site has not altered significantly since the survey by OS Ecology in 2021 no further survey is considered necessary.
Other Protected Species	Due to a lack of habitat within the site or the immediate surroundings white-clawed crayfish are considered likely to be absent. Although the site has the potential to support reptile species, the nearest consultation record is over 1.9km from the site. The site has undergone significant disturbance with vegetation having been stripped previously. It is considered that reptiles are likely to be absent for the development areas.

[1] 19167 Butterfly Survey, OS Ecology, 2021

	There is potential for hedgehog and common toad to be present within the development site on occasion
Impact Assessment	• Loss of a small area of semi improved grassland of Parish value • Loss of ephemeral / short perennial vegetation of scattered scrub of local value. • Loss of areas of standing water. • Loss of potential bat foraging and commuting habitat through site clearance. • Disturbance to foraging and commuting bats species should lighting affecting areas of woodland or hedgerow be proposed on site. • Harm or disturbance to nesting bird species should site clearance work be undertaken during the nesting season. • Loss of core and intermediate terrestrial habitat used by great crested newts. • Harm or disturbance to great crested newts during site clearance works and through entrapment in gully pots on site during the operation of the site. • Risk of harm through entrapment in trenches etc to badger and hedgehog should they be present within the site during works.
Impacts on Designated Sites	• There are no statutorily designated sites within 2km of the development site. The site is located within a SSSI Impact Risk Zone however development of industrial units is not listed as a potential pathway for impacts to the designated sites.
Recommendations	• External lighting that may affect suitability of adjacent habitats to bats (in particular the northern woodland) will be avoided. If required this will be limited to low level, avoiding use of high intensity security lighting. • Works will not be undertaken during the nesting bird season (March to August inclusive) unless the site is checked by an appropriately experienced ecologist and nests are confirmed to be absent. • Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°. • All works on site will take place under the district level licence from Natural England for great crested newts and associated conditions attached to the licence. • Where possible, soft landscaping will incorporate native species of benefit to wildlife including nectar producing flowers and berry bearing species.

1. Introduction

Site Location

1.1 The site is located to the south of Newton Aycliffe, County Durham at an approximate central grid reference of NZ2681 2240. The site location is illustrated within figure 1 in the appendices.

Site Description

1.2 The site is made up of an area of previously cleared land (Google Earth imagery shows it was cleared between 2008 – 2014)[2]. Most of the site is bare earth with large areas of standing water with rushes and ephemeral and ruderal vegetation.

Objectives of the Study

1.3 The objectives of this report are:

- To provide an ecological update of the site.

Development Proposals

1.4 Proposals include the development of the plot of land with industrial units and associated parking areas.

[2] Google Earth Pro accessed May 2023

2. Methodology

Scope of Study

2.1 The site was surveyed to identify whether the following were present for legislative and planning purposes:

- Habitats of Conservation Value
- Priority Habitats
- Protected and Priority Species

2.2 A summary of relevant legislation is provided within Appendix 2.

2.3 The ecological characteristics of the site were reviewed to identify the scope of the assessment, with the zone of influence determined through professional judgement.

2.4 The survey area comprised the "site" defined within figure 2 (Appendix 4). The desktop study included a data search covering the site and a 2km buffer zone while habitats within the local area were reviewed via aerial imagery.

2.5 Access permitting, all potential bat roosting sites within the survey area were assessed. Guidance regarding the assessment of the suitability of sites for use by bats is provided within Appendix 1.

Planning Policy

2.6 Planning policy relevant to this site, specifically the National Planning Policy Framework and the Darlington Local Plan, can be found within Appendix 2.

Desk Study

2.7 Desk study was undertaken to assess the nature of the surrounding habitats and included:

- Assessment of aerial imagery and Ordnance Survey mapping.
- A search of the MAGIC website[3] for statutorily designated sites for nature conservation, habitat listed within the Priority Habitat Inventory or the Ancient Woodland Inventory and European protected species licensing records within 2km of the survey area.
- A data search request submitted to the Local Record Centre.

[3] Multi Agency Geographic Information for the Countryside (www.magic.gov.uk)

Field Survey

Habitats/Protected Species

2.8 The site was subject to a walk over, during which habitats were assessed in line with the habitat classifications detailed within the UK Habitat Classification User Manual[4]. Definitions of broad habitat types and commonly recorded habitat types are provided within the appendices.

2.9 For plant species, abundance has been recorded using the DAFOR scale as detailed in the following table.

Table 2.1: DAFOR Scale		
Abundance		**Percentage Cover**
D	Dominant	50-100%
A	Abundant	30-50%
F	Frequent	15-30%
O	Occasional	5-15%
R	Rare	<5%

2.10 Mandatory Secondary Codes within the UK Habitat Classification have been used as defined within the User Manual.

2.11 During the survey the site was checked for evidence of protected species and habitats were assessed for their potential to support such species.

2.12 Survey was undertaken by Gemma Cone ACEIIM, an experienced surveyor who holds protected species licences for a range of species including bats and great crested newts.

2.13 The following equipment was utilised during survey:

- Zeiss 8x30 binoculars.
- Digital camera.

2.14 The survey was undertaken on the 2nd May 2023 in the following weather conditions:

Table 2.2: Survey Conditions				
Date	**Temperature**	**Cloud Cover**	**Precipitation**	**Wind Conditions**
02.05.23	7°C	100%	None	F2

Limitations to Survey

2.15 There were considered to be no major constraints to survey.

[4] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at http://www.ukhab.org/

Assessment Methodology

2.16 Guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) is utilised to provide habitat valuations.

2.17 The level of value of specific ecological receptors is assigned using a geographic frame of reference. For, example international value being most important (SACs, SPAs and pSPAs), then national (SSSIs), regional, county (LWS), district (LNR), local and lastly, within the immediate zone of influence of the site only (low).

2.18 In terms of species, for example breeding birds, should the population within the site constitute greater than 1% of the geographic population, it would be considered significant at that level. In addition, presence of designated sites, scarce species and or quality[5]/diversity of habitats are used to guide that valuation

2.19 Assessment methods for bats have been undertaken with reference to Wray et al. (2007)[6], which correlates with the geographic frame of reference. Within which they define the relative rarity of each species based on the known distribution[7] at the time and the value of the roost type, assuming that roosts such as feeding perches are of lower value that maternity roosts or sites that have a high level of fidelity.

2.20 Examples of ecological receptors at various levels of value are provided within Appendix 3.

[5] Quality can be subjective and vary in different geographic areas. Reasoned professional judgement is therefore used to inform the assessment.
[6] Wray et al (2007) Valuing Bats in Ecological Impact Assessment. In Practice. Based on a presentation at the Mammal Society – Specific Issues with Bats
[7] It should be noted that there are regular changes to our understanding of distribution as further studies are undertaken.

eDNA Survey

2.21 The eDNA survey was completed in line with the guidance provided within Defra's technical advice note[8].

2.22 The purpose of eDNA survey is to determine the presence/absence of great crested newts within a pond by taking water samples during a single daytime visit and analysing them for environmental DNA (eDNA).

2.23 eDNA is DNA that is released by organisms into the environment in which they are found. In aquatic environments, the eDNA can be from shed skin cells, cells released during reproduction, waste products etc. This eDNA will persist for several weeks and can therefore still be detected if samples are taken during or immediately following the breeding season, when newts are most likely to have been active in the ponds.

2.24 To give confidence in a negative result, the samples must be collected between the 15th April and 30th June, as per the guidance provided by Natural England[9].

2.25 Sample kits were obtained from the laboratory and stored as per the instructions prior to use. One sample kit was used per pond surveyed. All equipment within the kit is sterile.

2.26 Gloves are worn throughout the collection process to reduce the risk of contamination of the samples and are changed between the collection of the samples and transfer to preserving tubes.

2.27 Samples of water were taken from 20 locations, aiming to include all habitat types, around the edge of the pond, where access was available. Care was taken to mix the water column but avoid disturbing the substrate.

2.28 Once collected the samples were combined in a sterile bag and shaken for at least ten seconds to ensure the samples were well mixed and to prevent eDNA settling to the bottom.

2.29 Following this 15ml of sampled water was pipetted into each of six tubes which already contain 35ml of ethanol to preserve the sample. Each tube was then shaken for 10 seconds to ensure the two were mixed.

2.30 The samples were then stored as per the instructions provided with the kit and returned to the laboratory for analysis.

[8] Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths Ra, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

[9] https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects (Accessed December 2019

2.31 The visit to collect the samples was undertaken by James Streets and Mandy Rackham, both experienced surveyors licensed to survey for great crested newts.

2.32 The eDNA survey was undertaken on the 20th June 2020 under the following conditions:

Table 3: eDNA Survey Conditions				
Date	**Temperature**	**Cloud Cover**	**Precipitation**	**Wind Conditions**
20th June 2020	17°C	75%	None	None

Limitations to Survey

2.33 There were considered to be no major constraints to the habitat survey.

2.34 Only an eDNA survey could be completed of the nearby pond due to the timing of commission. As such a population assessment could not be made.

Assessment Methodology

2.35 Guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) is utilised to provide habitat valuations.

2.36 The level of value of specific ecological receptors is assigned using a geographic frame of reference. For, example international value being most important (SACs, SPAs and pSPAs), then national (SSSIs), regional, county (LWS), district (LNR), local and lastly, within the immediate zone of influence of the site only (low).

2.37 In terms of species, for example breeding birds, should the population within the site constitute greater than 1% of the geographic population, it would be considered significant at that level. In addition, presence of designated sites, scarce species and or quality[10]/diversity of habitats are used to guide that valuation.

2.38 Assessment methods for bats have been undertaken with reference to Wray et al. (2007)[11], which correlates with the geographic frame of reference. Within which they define the relative rarity of each species based on the known distribution[12] at the time and the value of the roost type, assuming that roosts such as feeding perches are of lower value that maternity roosts or sites that have a high level of fidelity.

[10] Quality can be subjective and vary in different geographic areas. Reasoned professional judgement is therefore used to inform the assessment.
[11] Wray et al (2007) Valuing Bats in Ecological Impact Assessment. In Practice. Based on a presentation at the Mammal Society – Specific Issues with Bats
[12] It should be noted that there are regular changes to our understanding of distribution as further studies are undertaken.

3. Results

Desk Study

Designated Sites

3.1 A search of the Multi Agency Geographic Information for the Countryside Website[13] indicated that there are no statutorily designated sites within 2km of the development site.

3.2 The site is located within a SSSI Impact Risk Zone however development of industrial units is not listed as a potential pathway for impacts to the designated sites.

Priority Habitats

3.3 A search of the MAGIC website identified that deciduous woodland, a priority habitat is located adjacent to the northern boundary as well as scattered throughout the landscape within 2km.

European Protected Species Licensing

3.4 The MAGIC website identified three granted protected species licences within 2km of the development site. Two of these licences are for the destruction of common pipistrelle resting places. The third licence is for the damage and destruction of a great crested newt resting place.

General Land Use

3.5 A review of aerial imagery and Ordnance Survey mapping highlighted that the general land use in the surrounding area is dominated industrial development to the north, east and south. Land to the west comprises a mixture of arable, pasture and blocks of woodland.

Data Search

Local Records Centre

3.6 Consultation with the Environmental Records Information Centre for the North East (ERIC NE) found that there are five non-statutorily designated sites within 2km of the development site. These are School Aycliffe Wetland, The Snipe, Cumby Pond, Aycliffe Quarry and Aycliffe Nature Park Durham Local Wildlife Sites.

3.7 The table below details the protected and notable species records provided by ERIC NE. Several bird records were also provided however non were within the site. Full records are available upon request.

[13] Multi Agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk (Accessed May 2020)

Table 4: Records from LRC Data Search			
Taxon	**Species**	**No. of Records within Search Area**	**Nearest Record (m)**
Amphibians	Common Toad	7	542
	Great Crested Newt	26	431
Mammals (excluding bats)	Brown Hare	3	1493
	Eurasian Badger	2	1992
	European Otter		1737
	European Water Vole		135
	West European Hedgehog	47	1301
Bats	Bats	2	1640
	Common Pipistrelle	4	2012
	Noctule Bat	1	2012
	Soprano Pipistrelle	1	939
Butterflies	Dark Green Fritillary	2	452
	Dingy Skipper	17	896
	Small Heath	18	452
	Wall	11	1404
	White-letter Hairstreak	2	1207
Reptiles	Common Lizard	2	1946

Field Survey

Habitats

Table 5: Habitat Descriptions	
Overview of habitats The site `is dominated by ephemeral / short perennial vegetation and bare ground which has been subject to previous disturbance with spoil piles still evident. Several large areas of standing water were recorded within the site; some with aquatic vegetation including rushes and bulrush. An immature planted hedgerow defines the southern boundary. The habitats within the site are illustrated within Figure 3.	
Ephemeral / Short Perennial The site is dominated by areas of disturbed ground with bare ground mixed with ephemeral / short perennial vegetation. Species recorded included occasional Yorkshire fog *Holcus lanatus*, common mouse-ear *Cerastium fontanum,* field rose *Rosa arvensis*, barren strawberry *Potentilla sterilis*, teasel *Dipsacus fullonum* marsh thistle *Cirsium palustre*, creeping thistle *C. arvense*, red fescue *Festuca rubra*, ragwort *Jacobaea vulgaris*, creeping buttercup *Ranunculus repens*, soft rush *Juncus effusus*, hard rush	

J. inflexus, daisy *Bellis perennis*, scentless mayweed *Tripleurospermum inodorum*, colt's-foot *Tussilago farfara* and rosebay willowherb *Chamaenerion augustifolium.*	
Hedgerow An immature planted hedgerow is present along the southern boundary. Species recorded include hawthorn (*Crataegus monogyna*), dog rose (*Rosa canina*), blackthorn and guelder rose (*Viburnum opulus*). Occasional common knapweed (*Centaurea nigra*) soft rush, hard rush and glaucous sedge was also recorded at the base of the hedgerow.	

Target Notes

Table 6: Target Notes	
Target Note 1 The section of the Demons Beck running along the southern boundary was holding a small amount of water at the time of the survey. The ditch is heavily vegetated and species present include willowherb sp., red campion, blackthorn, soft rush, hard rush, greater reedmace (*Typha latifolia*) and brooklime (*Veronica beccabunga*).	
Target Note 2 A small area of marshy grassland is present adjacent to the southern boundary. There was no standing water present at the time of the survey. The following species were recorded in this area; brooklime *Veronica beccabunga*, cuckoo flower *Cardamine pratensis*, tufted hair grass *Deschampsia cespitosa*, glaucous sedge *Carex flacca*, bulrush *Typha latifolia* and common spike rush *Eleocharis palustris*.	

Target Note 3 A block of woodland is present to the site (off-site). Species recorded include hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, ash *Fraxinus excelsior*, oak *Quercus* sp., alder *Alnus glutinosa*, pine *Pinus* sp., silver birch *Betula pendula* and horse chestnut *Aesculus hippocastanum*.	
Target Note 4 A large waterbody is present to the south of the site (off-site). Bulrush and scrub dominate the margins of the waterbody. Moorhen and coot were recorded at the time of the survey.	
Target Note 5 Areas of shallow standing water within the site. Some with aquatic vegetation.	

Protected Species

Bats

3.8 There are no structures or mature trees present within the site. As such roosting bats are considered likely to be absent from the development area.

3.9 The woodland block to the north has the potential to include trees with suitable roosting features. The edges of the woodland block also have the potential to provide suitable connectivity around the boundaries of the site and into the wider area.

3.10 Foraging opportunities within the site are limited to the margins of the adjacent woodland and the pond off-site.

Birds

3.11 The site is dominated by bare ground and ephemeral vegetation which provides limited cover for a number of ground nesting bird species. It ma provide opportunities for species such as little ringed plover however.

3.12 The woodland block to the north has the potential to provide higher quality opportunities.

3.13 During the survey common gull were recorded within the site. Coot and moorhen were recorded on the water of the pond off-site to the south.

Great Crested Newts

3.14 There were areas of open water within the site although the survey carried out in May 2020 did not record any significant waterbodies suggesting they are ephemeral. The section of the Demons Beck running adjacent to the southern boundary was holding a small amount of water at the time of the survey.

3.15 A large waterbody is present ~20m south of the site at the closest point. eDNA survey of this pond in 2020 returned a positive result indicating that the species is present. In addition, great crested newt eggs were recorded during the visit in 2020 to collect samples and it was therefore concluded that the pond was used for breeding by the species.

3.16 Ordnance Survey maps and aerial imagery identify a further seven ponds to the south of the site and a single pond to the east of the site.

3.17 The site overall lacks suitable vegetation cover for this species, however the hedgerow and areas with longer sward along the southern boundary may provide some dispersal opportunities.

Badger

3.18 No setts or other field signs of badger were recorded within the site during the survey.

3.19 Habitats within the site are considered to be suboptimal for sett creation however the grassland areas in the wider area have the potential to support foraging badger.

Otter

3.20 The Demons Beck runs adjacent to the southern boundary. The majority of the Beck is dry with only a small section holding a small amount of water at the time of the survey.

3.21 No evidence of otter was recorded on site during the survey due to the limited connectivity between the site and the wider area. The potential for otter to be present within the site is considered to be low.

Water Vole

3.22 The small section of the Demons Beck adjacent to the southern boundary was heavily vegetated and holding only a small amount of shallow water at the time of the survey. No field signs for this species were recorded and due to the overall limited stretch of suitable habitat available the potential for water vole to be present within the ditch is considered to be low.

3.23 The large water body to the south of the site has the potential to support this species however this waterbody will not be affected by the proposals.

Priority Butterflies

3.24 No priority butterfly species were recorded on site during the survey.

3.25 The large areas of ephemeral / short perennial vegetation mixed with bare ground recorded within the site has the potential to support basking with the site also noted to include small quantities of larval food source plants.

Other Protected Species

3.26 Due to a lack of habitat within the site or the immediate surroundings white-clawed crayfish are considered likely to be absent.

3.27 Although the site includes areas of ephemeral vegetation which have the potential to support reptile species, the nearest data search record is over 1.9km from the site. The site has also undergone significant disturbance with vegetation having been stripped previously. It is considered that reptiles are likely to be absent for the development areas.

3.28 There is potential for hedgehog and common toad to be present within the development plot on occasion.

4. Site Assessment

Assessment of Survey Findings

Habitats

4.1 Habitats are considered to be predominantly of local value comprising bare ground, ephemeral / sort perennial vegetation and ephemeral areas of standing water.

Bats

4.2 Overall, the site is considered to be of low suitability to foraging and commuting bats. The woodland to the north and the pond to the south is considered likely to provide higher quality habitat and will not be affected by the proposals.

4.3 There are no structures of trees within the site with suitable roosting features and as such roosting bats are considered likely to be absent.

Birds

4.4 The site provides limited nesting and foraging opportunities for birds. The woodland to the north of the site is considered likely to be of higher quality. The site lacks vegetation cover due to large areas of bare ground. The pond off-site to the south is likely to attract a variety of species that may also use the site for foraging. Overall, the site is considered to be of up to local value to bird species, however it may be used by species listed on Schedule 1 of the Wildlife and Countryside Act 1981, namely little ringed plover.

Great Crested Newts

4.5 There were areas of open water within the site although the survey carried out in May 2020 did not record any significant waterbodies suggesting they are ephemeral. The section of the Demons Beck running adjacent to the southern boundary was holding a small amount of water at the time of the survey.

4.6 Aerial imagery and Ordnance Survey maps identified several other ponds within 500m and consultation with the Local Records Centre identified the presence of this species within ~430m of the site.

4.7 The closest pond lies approximately 20m from the site boundary, with the remainder lying 400m or more from the site. Survey work has indicated that great crested newts are breeding within this pond.

4.8 Areas of grassland and scrub at the edges also has the potential to support this species during its terrestrial phase.

4.9 The site is located within a larger parcel of land that had previously been trapped for great crested newts under licence (2014-1598-EPS-MIT) as part of the previous development to the south. The newt fence remains in place around the larger parcel of

land. The newt fence provides a barrier between the development parcels and the ponds within 500m, however the pond closest to the site has been colonised by the species. The habitats within the site are considered to be sub-optimal for the species comprising mostly bare ground. Small numbers of newts are likely to be present within the site at times through the year as a result of the proximity of the sites to a nearby breeding pond.

Badger

4.10 No setts were recorded within the site during the survey and habitats are considered to be sub optimal for sett creation, with the woodland block to the north providing higher quality habitats.

4.11 No other field signs of badger were recorded on site however there is potential for badger to forage across the site on occasion. Overall, the site is considered to be of low value to this species.

Otter

4.12 No evidence of otter was recorded on site during the survey. The Demons Beck was predominately dry limiting connectivity between the site and the wider area. Overall, the value of the site to otter is considered to be low.

Water Vole

4.13 A small section of the Demons Beck adjacent to the southern boundary was holding water at the time of the survey. No field signs of water vole were recorded and due to the small area of suitable habitat available it is considered likely that this species is absent from the development plots. The large waterbody to the south has the potential to support this species however this feature will not be affected by the development.

Priority Butterfly Species

4.14 The ephemeral / short perennial vegetation, bare ground and grassland habitats have the potential to support priority butterflies, with larval food source plants scattered throughout.

4.15 A summary of the survey of the site in 2021 by OS Ecology is as follows: no evidence of dingy skipper butterflies or other butterflies of conservation importance were recorded on site. Although small areas of bird's-foot trefoil were recorded on site, there are larger areas of the species offsite within the area of habitat creation to the south of the site. Overall the value of the site to dingy skipper butterflies is considered to be low, with the value of the site to butterflies as an assemblage considered to be low.[14]

[14] 19167 Butterfly Survey, OS Ecology, 2021

Other Protected Species

4.16 Due to a lack of habitat within the site or the immediate surroundings white-clawed crayfish are considered likely to be absent.

4.17 The nearest consultation record is over 1.9km from the site. The site has undergone significant disturbance with vegetation having been stripped previously. It is considered that reptiles are likely to be absent for the development area.

4.18 There is potential for hedgehog and common toad to be present on occasion.

Designated Sites

4.19 There are no statutorily designated sites within 2km of the development site. The site is located within a SSSI Impact Risk Zone however development of industrial units is not listed as a potential pathway for impacts to the designated sites.

5. Impacts

5.1 Based on the understanding that the client wishes to develop the land with industrial units with associated carparking and as a result of the assessment completed, the likely impacts, without appropriate avoidance measures, mitigation and/or compensation scheme, are:

- Loss of ephemeral / short perennial vegetation of local value.
- Loss of potential bat foraging and commuting habitat through site clearance.
- Disturbance to foraging and commuting bats species should increased lighting be proposed on site.
- Harm or disturbance to nesting bird species should site clearance work be undertaken during the nesting season.
- Loss of core (within 50m of a breeding pond) and intermediate (50-250m from a breeding pond) terrestrial habitat suitable for great crested newts.
- Harm or disturbance to great crested newts during site clearance works and through entrapment in gully pots on site during the operation of the site.
- Risk of harm through entrapment in trenches etc to badger and hedgehog should they be present within the site during works.

5.2 The impacts on great crested newts through habitat loss have already been addressed under the outline planning permission and subsequent Natural England licences for the site, which allowed for the creation of habitats to the south of the site including a number of ponds, hedgerow and grassland. There is also a current Natural England District Level Licence in place on site (2021-00102-EPS-DLL). As a result, impacts relating to habitat loss are not considered here.

6. Recommendations

Further Survey

6.1 In relation to bat surveys, impacts on bats were assessed as part of the outline application and as such no additional updating work has been proposed. This is on the basis that no significant areas of bat habitat are to be lost to the proposals and adjacent areas of habitat are to be protected by the mitigation and avoidance measures below.

Avoidance Measures

6.2 The following key measures should be incorporated into the design of the scheme to avoid impacts on wildlife:

- External lighting that may affect suitability of adjacent habitats to bats (in particular the northern woodland) will be avoided. If required this will be limited to low level, avoiding use of high intensity security lighting.
- Works will not be undertaken during the nesting bird season (March to August inclusive) unless the site is checked by an appropriately experienced ecologist and nests are confirmed to be absent.
- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°.

Mitigation Measures

6.3 The following key measures should be incorporated into the design of the scheme to mitigate impacts on wildlife:

- All works on site will take place under the district level licence from Natural England (2021-00102-EPS-DLL) for great crested newts and associated conditions attached to the licence.

Compensation Measures

6.4 The following key measures should be incorporated into the design of the scheme to compensate impacts on wildlife:

- Where possible, soft landscaping will incorporate native species of benefit to wildlife including nectar producing flowers and berry bearing species.

Appendix 1 – Bat Suitability and Survey Effort

Classifications of suitability are based on those provided within the Bat Conservation Trust Good Practice Survey Guidelines[15], with the table below taken from page 35 of the guidelines (table 4.1).

Table 7: Guidelines for assessing the potential suitability of proposed development sites for bats (based on the presence of habitat features within the landscape, to be applied using professional judgement)

Suitability	**Description**	
	Roosting Habitats	**Commuting and foraging habitats**
Negligible	Negligible habitat features on site, likely to be used by roosting bats	Negligible habitat features on site, likely to be used by commuting and foraging bats
Low	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[a] 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[b]. A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential[c].	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 be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[a] 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 status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	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[a] 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 watercourse and grazed parkland. Site is close to and connected to known roosts.

[15] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

a. For example in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.
b. Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of potential for larger numbers of this species to be present during the autumn and winter in larger buildings in highly urbanised environments.
c. The system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015)

The classification of the suitability relates to the level of further survey recommended.

Table 8: Survey effort and timing depending on suitability of the structure or tree (Tables 7.1-7.3 in the BCT Guidelines

	Low roost suitability	**Moderate roost suitability**	**High roost suitability**
Survey Effort	One survey visit One dusk emergence or dawn re-entry survey	Two separate visits One dusk emergence and a separate dawn re-entry survey	Three separate visits At least one dusk emergence and a separate dawn re-entry survey. The third can be either dusk or dawn.
Timings	May-August (structures) No further survey (trees)	May to September. At least one must be in the optimum period (May to August)	May to September. two must be in the optimum period (May to August)
If bats are recorded	If bats emerge from or enter a building during surveys, the survey schedule will be adjusted to increase the survey effort so that enough information can be collected to characterise the roost and provide data should a Natural England Licence be required.		

Appendix 2 – Policy and Legislation

Planning Policy

National Planning Policy Framework (NPPF)[16]

The revised National Planning Policy Framework sets out the government's planning policies for England and how these are expected to be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. Planning law requires that applications for planning permission be determined in accordance with the development plan. The key paragraphs from the relating to the natural environment are detailed below.

Ecologically Relevant Paragraphs of the NPPF	
Paragraph	**Statement**
8	Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure; b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and c) an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy
174	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); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

[16] National Planning Policy Framework July 2021 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf)

Ecologically Relevant Paragraphs of the NPPF	
Paragraph	**Statement**
	d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate
175	Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries
179	To protect and enhance biodiversity and geodiversity, 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.
180	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 reasons63 and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.
181	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 sites64; and

Ecologically Relevant Paragraphs of the NPPF	
Paragraph	**Statement**
	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
182	The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

Government Circular ODPM 06/2005 Biodiversity and Geological Conservation[17] (England only)

This Circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England.

Part IV - Conservation of Species protected by Law details that the presence of a protected species is a material consideration when considering a development proposal that may result in harm to the species or its habitat and that planning authorities must have regard to species protected under the Habitat Regulations.
It goes on to say 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.*

Natural Environment and Rural Communities (NERC) Act 2006[18] [19]

Section 40 – To conserve biodiversity

This section puts a duty on public authorities to conserve biodiversity when undertaking its duties and functions.

Section 41 – Biodiversity list and Action

Requires the Secretary of State *to 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*. They must also *take such steps as appear to the Secretary of State to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section or promote the taking by others of such steps*.

The 2007 lists were superseded by the UK Post-2010 Biodiversity Framework.

[17]ODPM Circular 06/2005 Office of the Deputy Prime Minister Eland House, Bressenden Place, London SWIE 5DU Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System
[18] https://www.legislation.gov.uk/ukpga/2006/16/section/40
[19] https://www.legislation.gov.uk/ukpga/2006/16/section/41

UK Priority Habitats (excl. marine habitats)[20]	
UK BAP Broad Habitat	**UK BAP Priority Habitat**
Rivers and Streams	• Rivers
Standing Open Waters and Canals	• Oligotrophic and Dystrophic Lakes • Eutrophic Standing Waters • Ponds • Aquifer Fed Naturally Fluctuating Water Bodies • Mesotrophic Lakes
Arable and Horticultural	• Arable Field Margins
Boundary and Linear Features	• Hedgerows
Broadleaved, Mixed and Yew Woodland	• Traditional Orchards • Upland Mixed Ashwoods • Wood-Pasture and Parkland • Wet Woodland • Upland Oakwood • Lowland Mixed Deciduous Woodland • Lowland Beech and Yew Woodland • Upland Birchwoods
Coniferous Woodland	• Native Pine Woodlands
Acid Grassland	• Lowland Dry Acid Grassland
Calcareous Grassland	• Lowland Calcareous Grassland • Upland Calcareous Grassland
Neutral Grassland	• Lowland Meadows • Upland Hay Meadows
Improved Grassland	• Coastal and Floodplain Grazing Marsh
Dwarf Shrub Heath	• Lowland Heathland • Upland Heathland
Fen, Marsh and Swamp	• Upland Flushes, Fens and Swamps • Purple Moor Grass and Rush Pastures • Lowland Fens • Reedbeds
Bogs	• Lowland Raised Bog • Blanket Bog
Montane Habitats	• Mountain Heaths and Willow Scrub
Inland Rock	• Inland Rock Outcrop and Scree Habitats • Calaminarian Grasslands • Open Mosaic Habitats on Previously Developed Land • Limestone Pavements
Supralittoral Rock	• Maritime Cliff and Slopes
Supralittoral Sediment	• Coastal Vegetated Shingle • Machair • Coastal Sand Dunes

[20] http://jncc.defra.gov.uk/page-5706

Ecologically Relevant Policies of the Darlington Borough Local Plan[21]	
Policy No.	**Policy**
ENV 4	**Green and Blue Infrastructure (Strategic Policy)** Green and blue infrastructure will be protected, and where appropriate, improved and extended to provide a quality, safe and accessible network of well connected, multi-functional open spaces for recreation and play and to enhance visual amenity, biodiversity, landscape and productivity. This will be achieved by: a. Development proposals within, or adjacent to an existing green corridor (as defined on the Policies Map) should conserve and enhance its function, setting, biodiversity, landscape, access and recreational value as appropriate to that location; b. Development proposals that are crossed by an existing or proposed green corridor (as defined on the Policies Map) should incorporate it into the sites layout and design having regard to green infrastructure functions appropriate to that location; c. Capitalising on opportunities to enhance and/or create green links between green and blue infrastructure features; d. Expecting development to improve local water quality wherever possible, taking into account the Northumbria River Basin Management Plan; e. Working with partners and the community to bring forward priority projects and measures identified in Darlington's Green Infrastructure Strategy and the Northumbria River Basin Management Plan; f. Providing green infrastructure as part of new residential and non-residential developments in line with Policy ENV 5; g. Refusing planning permission for development that would result in the loss of existing green space(42) unless it can be demonstrated that the loss of the space would not cause significant harm to the character and appearance of the area or to local biodiversity (in line with Policy ENV 7), and one or more of the following criteria are met: i) there is an identified surplus of that type of green space in the area and that its loss would not adversely affect the recreational needs of residents; ii) satisfactory replacement green space is provided in a suitable location, accessible to current users and at least equivalent in terms of size, usefulness, attractiveness and quality; iii) the proposal involves the development of an alternative sports and recreational provision, the benefits of which clearly outweigh the loss of the current or former use.
ENV 7	**Biodiversity and Geodiversity and Development (Strategic Policy)** The Council will ensure that sites and features of biodiversity and geodiversity importance are given full and appropriate recognition and protection. The Council will also permit proposals where the primary objective is to conserve or enhance biodiversity where they accord with other relevant policies in the Plan. Development will be refused if significant adverse effects to biodiversity or geodiversity, either alone or in combination, cannot in the first instance be avoided, adequately mitigated, or, as a last resort, compensated for. Development will be expected to minimise the impact on and provide net gains for biodiversity, including establishing coherent and resilient ecological networks, by:

[21] Darlington Borough Local Plan 2016-2036, Darlington Borough Council, February 2022

Ecologically Relevant Policies of the Darlington Borough Local Plan[21]	
Policy No.	**Policy**
	a. Avoiding or mitigating adverse impacts upon BAP priority or protected species. Any potential adverse impact upon the ability of protected species to survive, reproduce and maintain or expand their current distribution will be monitored through application of the derogation tests detailed in the Habitats Regulations, and; b. Significantly and demonstrably enhancing the quality, extent and mix of priority and protected habitats and species identified in the NERC list(54) through: i. Incorporating native habitats, or habitat opportunities, within or around the site and/or as part of building design; and/or ii. Creating, improving or extending ecological networks; and/or iii. Contributing to the implementation of the management plans of the Tees Valley Nature Partnership within the Borough. Enhancement measures must be compatible with existing biodiversity and ecosystems. In circumstances where the enhancement of biodiversity would place the viability of the development in question, the developer will be required to demonstrate their case to the Council's satisfaction. Development proposals located within the areas listed below are encouraged, where relevant, to support the achievement of these specific actions as follows: A) River Tees Existing Green Corridor Encourage the protection and enhancement of connections between different parts of the ecological network through: i. Creating quality riverside habitat in buffer zones (see Policies ENV 4 and ENV 5); ii. Managing agriculture less intensively; iii. Planting native trees and ground plants; iv. Diversifying the mix of wetland and wet woodland habitats; v. Management of invasive species; and vi. Creating artificial habitats such as otter holts and bird boxes. B) River Skerne Proposed Green Corridor Encourage improvements to the value and ecological mix to: i. Provide quality priority habitats and species in the buffer zone; ii. Restore the natural river course, systems and character, e.g. meanders and earth bank sides; iii. Retain the natural floodplains; iv. Incorporate sustainable drainage systems; v. Plant more native broadleaved trees, grassland and wetlands to accommodate a range of protected and priority habitats and species; vi. Incorporate green features, such as green roofs and green walls; and vii. Manage invasive species. C) Rural area Promote the reinstatement of traditional species rich field margins, hedgerows and trees, along with new opportunities for mixed habitats, including meadows, woodland and wetlands, to provide greater connectivity for wildlife (see Policies H 3, H 7 and E 4). D) Nationally and locally designated wildlife sites Protect, maintain and where appropriate manage (as it depends upon ownership) and extend, in accordance with their management plans. Sites will be protected as follows: i. Sites of Special Scientific Interest (SSSIs) Development likely to have an adverse effect on any of the Borough's or neighbouring SSSIs either individually or in combination with other developments, will not normally be permitted

Ecologically Relevant Policies of the Darlington Borough Local Plan[21]	
Policy No.	**Policy**
	unless it can be demonstrated that the benefits of the proposed development in that particular location, clearly outweigh its likely impact on the features of the site that make it of special scientific interest and any broader impacts on the network of sites. ii. Local Nature Reserves and Local Wildlife Sites Development likely to result in significant harm to any of the Borough's Local Nature Reserves or Local Wildlife Sites should be avoided by being relocated to an alternative site of less harmful impacts. Where this is not possible, and it is demonstrated development is required in that location it will only be permitted if the significant harm can be overcome by adequate mitigation or as a last resort appropriate compensation measures. Designate new Local Nature Reserves which meet the Natural England Criteria to ensure the protection of land and species, including Red Hall Wetland, Mill Lane (spanning the Skerne) and Cocker Beck. Local Wildlife Sites are identified and selected for their local nature conservation value. They protect threatened species and habitats acting as buffers, stepping stones and corridors between nationally-designated wildlife sites. Darlington has sites such as Blackwell Meadows, Coatham Grange and West Cemetery. iii. Community Woodlands and Ancient Woodland New development will be expected to retain existing woodlands. Development will not be permitted that would result in the loss of woodland unless the benefits clearly outweigh the loss and suitable replacement planting can be undertaken which provides woodland types matching those identified as Priority Habitats in the NERC List (55) that are found locally. Ancient woodlands, ancient and veteran trees are irreplaceable habitats and new development will not be permitted that would result in their loss, fragmentation, isolation or deterioration unless there are wholly exceptional reasons (as defined in national policy) and a suitable compensation strategy exists. E) Local Geological Sites (LGSs) Protect the existing sites at Killerby (North Lane Quarry), Houghton-le-Side (Disused Quarry, Side Hill) and High Coniscliffe Quarries (Disused) and designate new sites, as appropriate. F) Wildlife friendly green spaces, parks and parklands Protect and improve the wildlife value of green spaces, parks and parklands.
ENV8	**Assessing a Development's Impact on Biodiversity** Development proposals will be required to provide net gains in biodiversity (prevailing in national policy) and demonstrate achievement of this using the Defra Biodiversity Metric. Development proposals that are situated within or adjacent to sites of biodiversity importance as identified in Policy ENV 7, or that are likely to have an adverse impact upon such sites(56) or upon sites that have a reasonable likelihood of hosting protected and/or priority species, will need to follow the sequence of actions set out below to identify how harm to biodiversity has been avoided, or failing that, adequately mitigated. Applicants should submit evidence that this process has been followed with any planning application: 1. Undertake a Phase 1 Habitat Survey to establish the type and mix of habitats and species present and any likely impacts; 2. For any habitats or species adversely affected, undertake an extended Phase 1 Habitat Survey and identity appropriate mitigation if possible; 3. Where protected species are present (including species protected under the Conservation & Habitats Regulations, and Wildlife and Countryside Act), further survey

Ecologically Relevant Policies of the Darlington Borough Local Plan[21]	
Policy No.	**Policy**
	work will be required to comply with Habitats Regulations including fulfilling the three derogation tests; and 4. Take account of, and reflect the detailed advice set out in, Darlington's Green Infrastructure Strategy and the revised Design of New Development SPD or successor documents. 5. Provide a masterplan, management and maintenance plan for applications of 100 dwellings or more where relevant showing how the quality of biodiversity features will be maintained in the long term. Maintenance contributions where required will be secured via a Section 106 agreement. Where a development proposal cannot avoid significant harm to biodiversity following the consideration of avoidance measures and mitigation, as a last resort, suitable compensatory measures must be incorporated, including the creation of priority habitats (57), with the first priority being on-site provision. Only with adequate reasoned justification will any off-site compensatory measures be permitted, with any such provision, agreed to be adequate and appropriate, secured by Section 106 contribution or Community Infrastructure Levy (or any other future delivery mechanism). Where adequate compensation measures cannot be provided, and significant harm avoided, planning permission will be refused. Where developers identify the presence of non-native invasive species on-site, measures will be required to contain the species and ensure it is effectively managed, or where possible, eradicated during development.

Protected Species Legislation

European Protected Species

European Protected Species (EPS) are species of plants and animals (other than birds) protected by law throughout the European Union. They are listed in Annexes II and IV of the European Habitats Directive and receive full protection under The Conservation of Species and Habitats Regulations 2017 (as amended). This make it an offence to:

- deliberately capture, injure or kill any European Protected Species (EPS)
- deliberately disturb any European Protected Species (EPS);
- damage or destroy a breeding site or place of rest or shelter used by any European Protected Species (EPS).

The Wildlife and Countryside Act 1981 (as amended) adds further protection by making it an offence to intentionally or recklessly[22] disturb an EPS while it is occupying a structure or place which it uses for shelter or protection, or to obstruct access to any structure or place the species uses for shelter or protection.

[22] Under the Countryside and Rights of Way Act 2000 (CROW Act) extended the protection to cover reckless damage or disturbance

Table 9: European Protected Species relevant to the UK			
Animals		**Plants**	
All bat species	Great Crested Newt	Yellow marsh saxifrage	Creeping marshwort
Large blue butterfly	Otter	Shore dock	Slender naiad
Wild cat	Smooth snake	Killarney fern	Fen Orchid
Dolphins, porpoises and whales (all species)	Sturgeon fish	Early gentian	Floating-leaved water plantain
Dormouse	Natterjack toad	Lady's slipper	
Sand lizard	Pool Frog		
Fisher's Estuarine Moth	Snail, Lesser Whirlpool Ram's-horn		
Marine turtles			

Other Protected Species

Table 10: Other Protected Species		
Species	**Legislation**	**Level of Protection**
Birds	Wildlife and Countryside Act 1981 (as amended)	Under the Wildlife and Countryside Act (1981) it is an offence if any person: • intentionally kills, injures or takes any wild bird • intentionally takes, damages or destroys the nest of any wild bird whilst that nest is in use of being built; • intentionally takes, damages or destroys eggs of any wild bird; Wild birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are protected from: • intentional or reckless disturbance whilst it is building a nest or is in, on or near a nest containing eggs or young; • disturbance of dependent young
Badger	Protection of Badgers Act 1992 Wild Mammals (Protection) Act 1996	The Protection of Badgers Act (1992) makes it an offence to wilfully or attempt to: • kill or injure a badger • possesses a dead badger or any part of, or anything derived from a dead badger; • digs for badgers; • damages a badger sett or any part of it; • destroys a badger sett • obstructs access to, or any entrance of, a badger sett; • causes a dog to enter a badger sett; • disturbs a badger whilst it is occupying a badger sett. Under the Wild Mammals (Protection) Act, badgers are protected from unnecessary suffering by a number of methods.

Appendix 3 – UK Habitat Classification

UK Habitat Classification Habitat Definitions (Broad Habitats)[23]	
Broad Habitat	**Definition**
Grassland (g)	Vegetation, not on waterlogged soils, with more than 75% cover of herbaceous species (grasses, sedges, rushes, herbs, forbs) with halophytic species absent or occasional. Includes pasture and semi-natural grasslands not on waterlogged soils and vegetation dominated by bracken.
Woodland and Forest (w)	Land with more than 25% cover of trees more than 5m in height. Includes recently felled woodland (but not clear felled forestry plantations unless re-planted), coppice, coppice-with-standards, lines of trees (but not hedgerows), wet woodland and bog woodland.
Heathland and Shrub (h)	Vegetation with more than 25% cover of dwarf shrub species <1.5metres high or woody species up to 5m high. Includes hedgerows of any height. Excludes lines of trees (w1g6), scattered scrub (secondary code (s.c.)10) and young trees (s.c. 56, 57).
Wetland (f)	Any habitat that is waterlogged (water table at surface with standing water for between 50% and 70% of the year). Excludes wet woodland/carr (w1d), wet habitats where the water table is always within 40cm of the surface and soil containing free water for most of the year and seasonally wet habitats, inundated for part of the year but becoming mesic in the summer.

[23] The UK Habitat Classification, Habitat Definitions Version 1.1, UKHab, September 2020

Cropland (c)	Regularly or recently cultivated agricultural, horticultural and domestic habitats. Includes ploughed land and intensive orchards.
Urban (u)	Constructed, industrial and other artificial habitats. Includes constructed, industrial and other artificial habitats in rural areas. Excludes grasslands, woodlands, heathlands, wetlands, rivers, lakes and sparsely vegetated land in urban areas.
Sparsely Vegetated Land (s)	Unvegetated, disturbed (regularly or drastically periodically) or sparsely vegetated habitats (permanently or periodically natural unvegetated areas) inhabited by stress tolerating vegetation. Includes inland rock, supralittoral rock, supralittoral sediment and coastal habitats (including dunes).
Rivers and Lakes (r)	Inland surface waters (freshwater ecosystems)
Marine Inlets and Transitional Waters (t)	Pelagic habitats: low/reduced salinity water (of lagoons), variable salinity water (of coastal wetlands, estuaries and other transitional waters) and marine salinity water (of other inlets). Benthic habitats: littoral rock and biogenic reed, littoral sediment, shallow sublittoral rock and biogenic reef and shallow sublittoral sediment.

UK Habitat Classification Habitat Definitions (Commonly Recorded Habitat Types)[23]	
Habitat Type	**Definition**
Grassland (g)	
g1c Bracken	Land with bracken *Pteridium aquilinum* at >95% canopy cover at the height of the growing season. Excludes patches of bracken <0.04ha which are included in the broad habitat type with which they are associated (s.c. 12)
g3c Other Neutral Grassland	Neutral grassland that does not meet the definition of either g3a (Lowland Meadow) or g3b (Upland Hay Meadow). Perennial rye-grass *Lolium perenne* is likely to be present at <30% with between 9 and 15 further species (/m2) also present.
g4 Modified Grassland	Vegetation dominated by a few fast-growing grasses on fertile, neutral soils. Frequently characterised by an abundance of rye-grass *Lolium spp*. and white clover *Trifolium repens*. Species poor <9 species/m2. Grass cover usually over 75%. Dominated by palatable grass species.
Woodland (w)	
w1 Broadleaved Mixed and Yew Woodland	Vegetation dominated by trees that are more than 5m high when mature, which form a distinct although sometimes open canopy with a canopy cover of greater than 25%. Includes stands of both native and non-native broadleaved tree species and Yew *Taxus baccata*, where the *percentage cover of these trees in the stand exceeds 20% of the total cover* of the trees present.
w1d Wet Woodland	Wet woodland occurs on poorly drained or seasonally wet soils, usually with Alder *alnus glutinosa*, birch *Betula spp*. and willows *Salix spp.* as the predominant tree species, but sometimes including ash *Fraxinus excelsior*, oak *Quercus spp.,* Scots pine, *Pinus sylvestris* and beech *Fagus sylvatica* on the drier riparian areas.
w1f Lowland Mixed Deciduous Woodland	Lowland mixed deciduous woodland includes woodland growing on the full range of soil conditions, from very acidic to base-rich. Occurs largely within enclosed landscapes, usually on sites with well defined boundaries, at relatively low altitudes, although altitude is not a defining feature.
w1g Other Woodland; Broadleaved	Broadleaved mixed and yew woodland not meeting the definition of w1a to w1f (Upland Oakwood, Upland Mixed Ashwoods, Lowland Beech and Yew Woodland, Wet Woodland, Upland Birchwoods and Lowland Mixed Deciduous Woodland).
w1g6 Line of Trees	A line of trees at least 20 metre in length with open habitat on each side. Includes grow out hedgerows, avenues, narrow windbreaks, willows and alders along watercourses. Excludes overgrown hedgerows still capable of being laid into a stockproof hedge.
w1h Other Woodland; Mixed	A mixture of broadleaved and coniferous trees in which neither make up more than 80% of the tree cover.
w2 Coniferous Woodland	Vegetation dominated by trees that are more than 5m high when mature, which form a distinct, although sometimes open canopy which has a cover of greater than 20%, with stands of both native and non-native coniferous trees species (with the exception of yew *Taxas baccata*) where the percentage cover of these trees in the stand exceeds 80% of the total cover of the trees present.
Heathland and Shrub (h)	
h2 Hedgerows	A boundary line of shrubs, provided that at one time the shrubs were stock proof and more or less continuous. Includes where gaps between trees and shrubs <20m and any tree or herbaceous vegetation <2m from the hedgerow centre.

UK Habitat Classification Habitat Definitions (Commonly Recorded Habitat Types)[23]	
Habitat Type	**Definition**
h2a Hedgerow (Priority Habitat)	Hedgerows consisting predominantly (ie 80% or more cover) of at least one woody UK native species. Climbers such as honeysuckle and bramble are not included in the definition of woody species.
h2b Other Hedgerows	Hedgerows that do not consist predominantly (ie 80% or more cover) of at least one woody UK native species.
h3 Dense Scrub	Patches of shrubs less than 5 metres tall with continuous (>90%) cover. Includes patches with occasional trees more than 5 metres tall (s.c. 11) and tree species less than 5m tall. Sub categories dependent on dominant species: h3d Bramble Scrub, h3e Gorse Scrub, h3f Hawthorn Scrub, h3h Mixed Scrub (no single species dominant)
Wetland (f)	
f2e Reedbeds	Wetlands dominated by stands of the common reed *Phragmites australis*, with the water table at or above ground level for most of the year.
Cropland (c)	
c1a Arable Field Margins	Herbaceous strips or blocks around arable fields that are managed specifically to provide benefits for wildlife. Usually sited on the outer 2-12m margin of the arable field.
c1c Cereal Crops	Crops in the cereal group of domesticated grasses: wheat, barley, oats and maize.
c1d Non-Cereal Crops	Crops other than those defined in c1c.
Urban (u)	
u1a Open Mosaic Habitats on Previously Developed Land	Each of the following five criteria must be met. 1) Open mosaic habitat at least 0.25ha in size. 2) Known history of disturbance or evidence that soil has been removed or severely modified by previous uses(s). Extraneous materials/substrates such as industrial spoil may have been added. 3) Site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of a) annuals, or b) mosses/liverworts, or c) lichens, or d) ruderals, or e) inundation species, or f) open grassland, or g) flower-rich grassland, or h) heathland. 4) Contains unvegetated, loose bare substrate and pools may be present. 5) The site shows spatial variation, forming a mosaic of one or more of early successional communities a-h above (criterion 3) plus bare substrate, within 0.25ha.
u1b Developed Land; Sealed Surface	Soil surface sealed with impervious materials as a result of urban development and infrastructure construction.
u1b5 Buildings	A relatively permanent enclosed construction over a plot of land, having a roof and usually windows and often more than one level, used for any of a wide variety of activity, as living, entertaining or manufacturing.
u1c Artificial Unvegetated, Unsealed Surface	Land cleared for development, infrastructure construction or other purpose, currently unvegetated, but the soil surface is not sealed with impervious materials.
u1d Suburban/Mosaic of	Small-scale mosaic of developed and natural surfaces, as in housing and gardens in suburban areas.

UK Habitat Classification Habitat Definitions (Commonly Recorded Habitat Types)[23]	
Habitat Type	**Definition**
Developed/Natural Surface	
u1e Built Linear Features	Roads, railways, walls, fences, surfaced paths.
Rivers and Lakes (r)	
r1 Standing Open Water and Canals	Natural systems such as lakes, meres and pools, as well as man-made waters such as reservoirs, canals, ponds and gavel pits.
r2 Rivers and Streams	Rivers and streams from bank top to bank top, or, where there are no distinctive banks or banks are never overtopped, it includes the extent of the mean annual floor. Includes, the open channel, water fringe vegetation and exposed sediments and shingle banks.

Appendix 4 – eDNA Results

SureScreen Scientifics

Folio No: E7954
Report No: 1
Purchase Order: 19167
Client: OS ECOLOGY
Contact: James Streets

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 23/06/2020
Date Reported: 29/06/2020
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
2514	Pond 1, Heighington Lane		Pass	Pass	Pass	Positive	1

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth **Approved by:** Sarah Evans

Forensic Scientists and Consultant Engineers
SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE
UK Tel: +44 (0)1332 292003 Email: scientifics@surescreen.com
Company Registration No. 08950940

SureScreen Scientifics

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

SIC: **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

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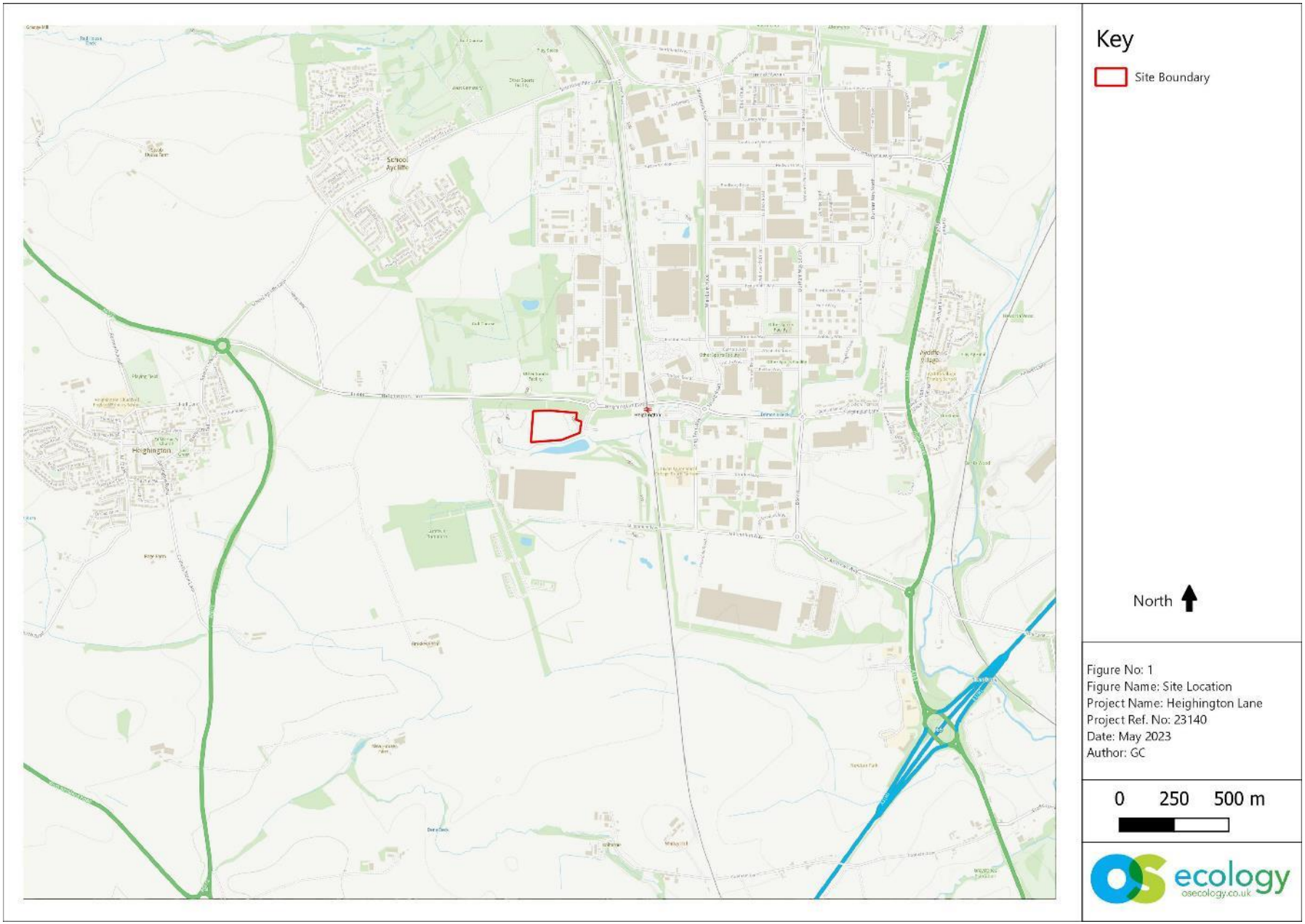
Appendix 5 – Figures


Key
Site Boundary
North
Figure No: 1
Figure Name: Site Location
Project Name: Heighington Lane
Project Ref. No: 23140
Date: May 2023
Author: GC
0 250 500 m


Key
Site Boundary
North
Figure No: 2
Figure Name: Site Boundary
Project Name: Heighington Lane
Project Ref. No: 23140
Date: May 2023
Author: GC
0 25 50 m


1
u1b6
14, 17, 73, 91
1
1
1
h2a
2
Key
Site Boundary
Target Notes
h2a - Native Hedgerow
u1b6 - Other Developed Land
Secondary Codes
14 Scattered rushes
17 Ruderal/ephemeral
73 Bare ground
91 Development site
North
Figure No: 3
Figure Name: UK Habs
Project Name: Heighington Lane
Project Ref. No: 23140
Date: May 2023
Author: GC
0
25
50 m


3
5
5
5
2
1
4
Key
Site Boundary
Target Notes
North
Figure No: 4
Figure Name: Target Notes
Project Name: Heighington Lane
Project Ref. No: 23140
Date: May 2023
Author: GC
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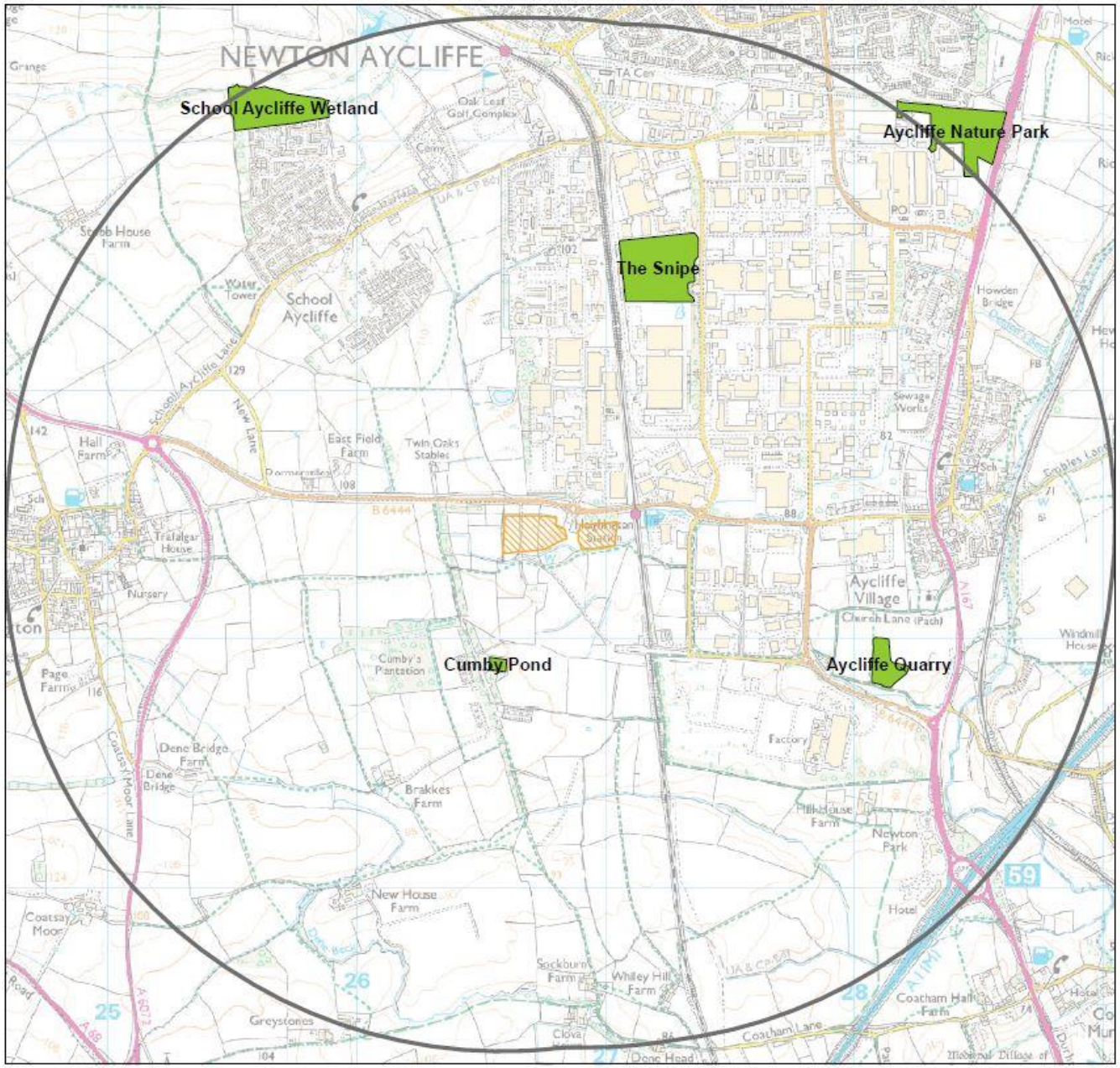
25
50 m



ECOLOGICAL DATA SEARCH - NON STATUTORY SITES

HEIGHINTON LANE

OS ECOLOGY

PLOT PRODUCED: 28 May 2020

- Site Boundary
- 2000m Search Area
- Durham Local Wildlife Sites

Produced by

Environmental Records Information Centre North East

Great North Museum: Hancock
Barras Bridge
Newcastle upon Tyne
Tyne & Wear
NE2 4PT