Cleator Moor Innovation Quarter

ECOLOGICAL APPRASIAL

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Copeland Borough Council

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Prepared on Behalf of Tetra Tech Group Limited.

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EXECUTIVE SUMMARY

Contents	Summary
Site Location	The 'site' is located in Cleator Moor, Cumbria and is centred at Ordnance Survey National Grid Reference NY 01570 15529. The site is approximately 34.9 hectares in size and lies on the north side of Leconfield Street east of Bowthorn Road and west of Birks Road.
Proposals	The proposals are for industrial-led mixed-use development on Leconfield Industrial Estate (referred to as Site A) and adjacent land to the north (Site B) which is currently under agricultural production and grassed land to the east (Site C). The Cleator Moor Innovation Quarter will host the Innovation Campus, accommodating light industrial, research and development, storage and warehouse and complimentary education and hotel, student accommodation uses.
Existing Site Information	Previous reports available for the site: • Tetra Tech (2021) – Leconfield Industrial Estate plus expansions – Update Ecological Appraisal • Tetra Tech (2021) – Leconfield plus extensions – Site Inspection Report • WYG (2020) – Leconfield Industrial Estate – Ecological Appraisal • White Young Green (2007) – Leconfield, Cleator Moor – Preliminary Ecological Appraisal
Scope of this Survey(s)	The scope of this survey was to record broad habitat types in accordance with the *Handbook for Phase 1 habitat survey*, *a technique for environmental audit* (JNCC, 2010). The scope of the survey also included a search for evidence of notable and protected species, and to record the potential for habitats recorded to support notable and protected species. The information gathered during the survey was supported by information from the Cumbria Biodiversity Data Centre (CBDC) and MAGIC, to contextualise results.
Results	**Designated sites** The nearest Natura 2000 site is the River Ehen SAC 1.3 km south east from site. There are also one Site of Scientific Interest, four County Wildlife Sites and three Sites of Invertebrate Significance within 2 km of the site. **Habitats** The site was comprised of broadleaved woodland, mixed woodland, dense scrub, scattered scrub, mixed scattered trees, unimproved neutral grassland, semi-improved neutral grassland, marshy grassland, amenity grassland, tall ruderal vegetation, swamp, ephemeral vegetation, bare ground, hard standing and buildings. Detailed NVC, Invasive Species and BNG report have been produced by Tetra Tech in 2021. **Protected and notable species**

	The site has habitat suitability for amphibians (including great crested newt), reptiles, bats, badgers, breeding birds, red squirrel, invertebrates and hedgehog. Detailed bat, breeding bird, reptile, GCN and invertebrate reports have been produced by Tetra Tech in 2021.
Recommendations	• Detailed Ecology Reports listed in the Appendix E should be referred to for detailed recommendations regarding specific species / groups of species and habitats recorded on site. • RAMs should be devised, and Ecological Clerk of Works (ECoW) checks should be conducted for amphibians, reptiles, nesting birds and other species that prior to any vegetation clearance / habitat removal and ground disturbance • A pre-works badger survey of the proposed development area to be undertaken at least three months prior to works. • A biodiversity planting scheme is recommended as part of the HLMP in order to provide suitable habitats for invertebrates and to offset the loss of the current nectar-rich habitats. • Any suitable trees proposed for removal as part of the proposed development should be checked for red squirrel dreys prior to removal. • Management measures detailed in the INNS Report should be followed to mitigate the impact of invasive species presence. • Improvement of the condition of selected retained habitats across all sites. • Creation of more distinctive habitat types including reedbeds, open water, woodland and species-rich grasslands in line with the BNG report. • The creation and implementation of additional hibernacula suitable for amphibian and reptile hibernation to be distributed through key areas of both Site A and C. • Suitable site management of the grasslands and woodlands to retain habitat suitability for amphibians, reptiles and invertebrates. Further planting and landscaping should include bat friendly species to increase the number of night flying insects for the benefit of bats. • The design of Site B has included several enhancements to benefit the amphibian, reptile and invertebrate populations onsite including open water, reed beds and species rich grassland which affords the entire site (A, B & C) no net habitat loss. • The installation of bat boxes within and around the proposed new buildings, existing buildings or trees are to be included to promote roosting potential around the site. • Provision of bird boxes to increase the range of nesting opportunities throughout the sites.

GLOSSARY

BCT	Bat Conservation Trust
BNG	Biodiversity Net Gain
BoCC	Bird(s) of Conservation Concern
BSI	British Standard Institute
BTO	British Trust for Ornithology
CBDC	Cumbria Biodiversity Record Centre
CEcol	Chartered Ecologist
CIEEM	Chartered Institute of Ecology & Environmental Management
CRoW Act	Countryside and Rights of Way Act 2000
CWS	County Wildlife Site
DEFRA	Department for the Environment, Food and Rural Affairs
EA	Ecological Appraisal
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EMP	Ecological Management Plan
EPS	European Protected Species
EPSL	European Protected Species Licence
GCN	Great Crested Newt
Habitats Regulations	Conservation of Habitats and Species Regulations 2017 (as amended)
HAP	Habitat Action Plan
Hedgerow Regulations	The Hedgerow Regulations 1997
HPI	Habitat(s) of Principal Importance
HRA	Habitats Regulations Assessment
INNS	Invasive Non-native Species
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
LPA	Local Planning Authority
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
Natura 2000 site	A European site designated for its nature conservation value
NE	Natural England
NERC Act	Natural Environment and Rural Communities Act 2006
NPPF	National Planning Policy Framework
NVC	National Vegetation Classification
PEA	Preliminary Ecological Appraisal
RLB	Red Line Boundary
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
SNCO	Statutory Nature Conservation Organisations
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site(s) of Special Scientific Interest
TPO	Tree Preservation Order
W&CA	Wildlife & Countryside Act 1981 (as amended

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Copeland Borough Council in May 2021 to undertake an Ecological Appraisal (EA) of the site known as Cleator Moor Innovation Quarter (CMIQ). This report is an update of an EA report (WYG 2020) completed for the Main Leconfield Site A (Site A). Expansion Sites B and C were not assessed in 2020 and are considered for the first time in this report.

This report has been prepared by Assistant Ecologist Elizebeth Wilcox and Assistant Ecologist Danny Burrows and the conditions pertinent to it are provided in Appendix A.

1.2 SITE LOCATION

The 'site' is located in Cleator Moor and is centred at Ordnance Survey National Grid Reference NY 01570 15529 – see Figure 1 for site location plan. The Main Leconfield Site A (Site A) comprises the Industrial Estate (17.6 ha in size) and lies on the north side of Leconfield Street. Additionally, two expansion areas are present; these comprise Expansion Site B (Site B) to the north-east and Expansion Site C (Site C) to the south-east of the main site.

Site A comprises 13 industrial / commercial buildings with associated hard standing, roads and amenity grassland. These are surrounded by pockets of habitats that include broadleaved and mixed woodland, plantation / screen planting, scattered trees, scrub, semi-improved neutral grassland, marshy grassland, swamp and tall ruderal vegetation.

Site B is approximately 13.3 ha in size and comprised semi-improved grassland, marshy grassland and hedgerows.

Site C is approximately 4 ha in size and comprised of broadleaved plantation woodland along the C2C cycle path, grassland and scrub habitats, as well as allotments and areas of hardstanding.

1.3 DEVELOPMENT PROPOSALS

The proposed description of the development is as follows:

"Provision of 44,350 sqm (GEA) floorspace for light industrial, general industrial and storage & distribution (Class E(g),B2, B8), Hotel (Class C1) and Student Accommodation (Sui Generis) with ancillary food/beverage (Class E(b)), education and community facility uses (Class F1(a & e)) with internal accesses, parking, service yards, attenuation basins, electricity substations and associated infrastructure, earthworks and landscaping."

Outline planning permission is sought for light industrial-led mixed-use development on the existing Leconfield Industrial Estate and adjacent land parcels to the north and east at Cleator Moor. Quantum, use, scale and access are sought for approval with all other matters reserved.

The masterplan showing the proposed site plan is shown in Appendix C (Drawing Reference:ZZ-DR-A-90004_SITE PLAN PROPOSED – LABELLED).

1.4 PURPOSE OF THE REPORT

The purpose of this report is to complete:

- An update of the desk study completed in 2020, to include Site B and Site C, including information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence;
- An extended Phase 1 Habitat Survey, involving a walkover of the Site A and Site C to record habitat types and dominant vegetation and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species;
- An overview of Site B including a Phase 1 Habitat Survey map based on a visual assessment of the site from the southern boundary and an overview of aerial images in order to establish types of habitats present and their potential to support protected / notable species.
- An assessment of the potential ecological receptors present on site, identify any constraints they pose to future development and (if possible) any recommendations for any further surveys, avoidance, mitigation or enhancement measures that are needed (as appropriate).

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

A summary of the key legislation is also provided in Appendix B.

2.0 METHODOLOGY

2.1 DESK STUDY

2.1.1 Previous Reports

The following reports were available:

- Tetra Tech (2021) – Leconfield plus extensions E6 – Site Inspection Report
- Tetra Tech (2021) – Leconfield Extensions CM084 (HA08)1 – Site Inspection Report
- WYG (2020) – Leconfield Industrial Estate – Ecological Appraisal
- Elliot Environmental Surveyors (2014) – Preliminary Environmental Risk Assessment for Leconfield Industrial Estate, Cleator Moor, Cumbria
- White Young Green (2007) – Leconfield, Cleator Moor – Preliminary Ecological Appraisal

2.1.2 Local Ecological Records Centre

A data search was requested from the Cumbria Biodiversity Data Centre (CBDC) for information on any nature conservation designations and protected or notable species records within 2 km of the main site. The data used was from the former Ecological Appraisal (WYG, 2020) and was still applicable to this report. Only records post year 2000 were considered in this report.

The data search covered:

- Non-statutory designated sites for nature conservation, namely County Wildlife Sites (CWS)
- Legally protected species, such as great crested newts *Triturus cristatus*, badger *Meles meles* and bats;
- Notable habitats and species, such as those listed as Habitats or Species of Principal Importance (HPIs or SPIs); and
- Priority habitats or species within the Cumbria LBAP.

The data search did not cover:

- Tree Preservation Orders (TPOs); or
- Conservation Areas designated for their special architectural and historic interest.

2.1.3 Online Resources

A search for relevant information was also made on MAGIC www.magic.gov.uk - DEFRA's interactive, web-based database for statutory designations and information on any EPSML applications that have been granted in the local area since 2000.

[1] Expansion C.

2.2 FIELD SURVEYS

The following methodologies have been used to identify the ecological receptors present on or near the site, which are relevant to the proposed development.

2.2.1 Habitats

An extended Phase 1 habitat survey was undertaken on the site on 14th May 2021 by Tetra Tech Principal Ecologist Penny Ward MCIEEM and Assistant Ecologist Elizebeth Wilcox. The weather conditions were cloudy, with a temperature of 11°C and light air.

The vegetation and broad habitat types within the site were noted during the survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (JNCC, 2010). Dominant plant species were recorded for each habitat present using nomenclature according to the New Flora of British Isles (Stace, 2019). The site was also appraised for its suitability to support notable flora, with regard to the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017).

A subsequent National Vegetation Classification (NVC) survey was undertaken on Site A by Tetra Tech in 2021. The purpose of the NVC survey was to further investigate species rich habitats on Site A. Five areas were selected for their botanical interest, based on information gathered from previous site reports and area identified as potential priority habitats on MAGIC. A full species list of vascular plants and bryophytes, as well as a description of the vegetation and abundance values (collected using the DAFOR scale) was documented.

2.2.2 Protected & Notable Species

The site was inspected for evidence of, and its potential to support, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations, Schedule 5 of the W&CA, the CRoW Act, those given extra protection under the NERC Act, and species included in the Cumbrian LBAP.

Great Crested Newt

The site was appraised for its suitability to support GCN. The assessment was based on Guidance outlined in the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Becket & Foster, 2001). A subsequent survey was carried out by Tetra Tech to determine the presence or likely absence of GCN using eDNA, HSI of waterbodies and traditional torch, egg searching and netting survey techniques (Appendix E).

Bats

Roosting Bats – Buildings / Structures / Trees

Any suitable buildings, structures or trees on site A & C were assessed from the ground for their suitability to support breeding, resting and hibernating bats using survey methods based on the BCT *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) – hereafter referred to as the 'BCT Guidelines'. The categories used to classify the bat roost suitability of any features found, are explained in Table 1 below.

Table 1 Categories of Bat Roost Suitability (BCT Guidelines)

Suitability	Typical Roosting Features
Negligible	Negligible habitat feature on site likely to be used by roosting 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 and/or suitable surrounding habitat

Suitability	Typical Roosting Features
	to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
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 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).
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 & potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Foraging/commuting Bats

The BCT Guidelines use the criteria in Table 2 below to categorise the potential value of habitats and features for use by foraging and commuting bats and these have been used to characterise the value of this site.

Table 2 Categories of Habitat Suitability (BCT Guidelines)

Suitability	Typical Foraging & Commuting Features
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a 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	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	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Subsequent bat roost assessments were carried out by Tetra Tech to determine presence or likely absence of roosting bats on the Sites A & C and assess habitat value for foraging and commuting bats (Appendix E).

Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the Herpetofauna Workers' Manual (Gent & Gibson, 2003). A subsequent survey to determine the presence or likely absence of reptiles on the CMIQ site was carried out by Tetra Tech, this involved eight site visits using artificial refugia (Appendix E).

Badger
The Sites A & C were surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989).

Other Species
The site was also appraised for its suitability to support other protected or notable fauna including mammals, amphibians and, birds with regard to the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) and *BS42020:2013 Biodiversity – Code of Practice for Planning and Development* (BSI, 2013). Evidence of any current or historical presence of such species was recorded. A breeding bird survey was carried out Tetra Tech, this was based on the territory (registration) mapping techniques to assess the site for notable breeding bird activity (Appendix E).

Invertebrates
A walkover survey of the site in order to sample invertebrates was carried out using several different techniques as per Eyre 1996; Hill *et al*, 2006 & Sutherland, 2006. The invertebrate survey methods followed standard guidance for terrestrial species. An invertebrate survey was carried out by Baker Consultants between July and August 2021 to determine the presence or likely absence of any notable invertebrate species within the CMIQ site using a range of survey methods (Appendix E).

Invasive Species
The site was searched for evidence of invasive plant species, such as Japanese *knotweed Reynoutria japonica* (formerly *Fallopia japonica*), Indian (Himalayan) balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhododendron ponticum*. A full list of all invasive plant species is provided in Appendix B. A subsequetn invasive non-native species survey saw carried out by Tetra Tech in order to identify all areas of invasive species onsite as well as potential source and vectors of these invasive plant species (Appendix E).

2.3 LIMITATIONS
The optimal period to undertake an extended Phase 1 habitat survey is April-September. The survey was completed in May 2021 which is inside the optimal survey window. As such this is not considered to be a limitation to the accurate assessment of the habitats and the dominant species of the respective vegetation types were visible and identifiable.

To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under UK or European wildlife legislation. This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be recommended. Subsequent detailed surveys for relevant species / groups of species (e.g. bats, great crested newt) were carried out on site by Tetra Tech in 2021 (See Appendix E).

At the time of survey there was no access to Site B; therefore, Site B was surveyed remotely from the southern field boundary using binoculars. The Phase Habitat 1 for Site B (Figure 3) is based on habitats as they were remotely viewed in the field and interpreted using arial imaginary. Therefore, Site B may require a further field visit to ground truth the habitats identified and fully appraise it for evidence / potential of the protected and notable species.

No detailed bat roost assessment or search / evaluation of the potential roosting features (PRFs) within the trees and buildings on site was conducted as part of this survey but are included in a

separate Bat Survey Report. The following additional surveys were commissioned for the main site and expansions in May 2021: reptiles, breeding birds, GCN, bats, invasive non-native species (INNS) and a National Vegetation Classification (NVC) survey. A Habitat Regulations Assessment (HRA) and a Biodiversity Net Gain (BNG) assessment were commissioned in August 2021. This report represents an overview of the site and expansions. The reports listed above contain information additional to this EA report and should be reviewed in conjunction.

The details of this report will remain valid for a period of two years from the date of the survey, after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

3.0 BASELINE CONDITIONS

3.1 PREVIOUS REPORTS

White Young Green (2007) – Leconfield, Cleator Moor – Preliminary Ecological Appraisal

A Preliminary Ecological Appraisal of the Main Leconfield Site A was conducted by White Young Green Environmental in 2007. The survey identified a range of habitats on site which included semi-natural broadleaved woodland, scrub, neutral / basic grassland, marshy grassland, mire-type vegetation and ruderal / ephemeral vegetation. The survey noted a type of mire vegetation in the south-east corner of the site developed over dumped industrial material containing iron slag; the drainage in this area was impeded resulting in waterlogging and formation of shallow ephemeral pools. The reported noted that this area may be of botanical interest and recommended a detailed vegetation survey during spring / summer.

The 2007 PEA report also noted that the site has potential to support a range of protected species including local populations of bats, breeding birds, reptiles and amphibians. The survey did not record any invasive plant species, although it was noted that these could have been missed due to the winter timing of the survey.

Elliot Environmental Surveyors (2014) – Preliminary Environmental Risk Assessment for Leconfield Industrial Estate, Cleator Moor, Cumbria

A Preliminary Environmental Risk Assessment was conducted for the site by Elliot Environmental Surveyors (2014), to determine the environmental status of the site. The report highlighted that the site had been used as a slag heap before it was built on in the 1960s and 1970s. The report conclude that further site investigations were needed to determine the possible need for remediation work or mitigation with regard to ground stability and contamination. Japanese knotweed was identified on site and the Nor Beck, in the north east of the site, was categorised as a sensitive potential environmental receptor.

WYG (2020) – Leconfield Industrial Estate – Ecological Appraisal

An Ecological Assessment was carried out in order to record the habitats present within the Main Leconfield Site A, identifying any potential ecological constraints to the proposed development and assess any likely impacts of the proposed development on ecological aspects of the site. A number of habitats where noted to be on site including broadleaved woodland, scrub and unimproved neutral grasslands. It was found that the Site had suitability for GCN, reptiles, bats, badgers, breeding birds, red squirrel, invertebrates and hedgehogs. It was recommended that the broadleaved woodland habitats are retained as part of the proposed plan, with further suggestions of detailed NVC surveys and a Habitat and Landscape Management Plan (HLMP) to accompany the final site plan. Due to the presence of suitable habitats GCN, reptile and bat surveys were recommended to take place during their respective survey season to confirm presence/ likely absence. In order to reduce the impact on breeding birds it is suggested that any works should be carried out after the bird breeding season, with a suitable ECoW to be present if this could not be achieved. An invasive species walkover survey to assess the status of invasive species on site was also recomended.

Tetra Tech (2021) – Leconfield plus extensions E6 – Site Inspection Report

A Site Inspection of Extension E6 (Site A) using a red line boundary, as supplied by Copeland Borough Council, was carried out to assess the potential to support protected/ notable species and habitats. The report noted a number of habitats within the site with further potential for protected species presence. A recommendation of an Extended Phase 1 Habitat Survey was made to enable a more detailed assessment of ecological constraints, with potential for further surveys following the extended phase 1 survey.

Tetra Tech (2021) – Leconfield Extensions CM084 (HA08) – Site Inspection Report
A Site Inspection of Extension CM084 (HA08) (Site C) using a red line boundary, as supplied by Copeland Borough Council, was carried out to assess the potential to support protected/ notable species and habitats. The report noted a number of habitats within the site with further potential for protected species presence. A recommendation of an Extended Phase 1 Habitat Survey was made to enable a more detailed assessment of ecological constraints, with potential for further surveys following the extended phase 1 survey.

3.2 DESIGNATED SITES

The following designated sites of ecological importance have been identified within 2 km of the site.

Table 3 Designated Sites Within 2km

Designation	Site Name	Distance & Direction	Summary of features
Statutory			
SAC	River Ehen	1.3km SE	The designated stretch of the river, between Ennerdale Water and the confluence with the River Keekle at Cleator Moor, meanders across a narrow floodplain with areas of riparian woodland and trees. This stretch of the river supports outstanding populations of the freshwater pearl mussel *Margaritifera margaritifera*. In addition the river supports Atlantic salmon *Salmo salar*, important for the ecology of the river.
SSSI	River Ehen (Ennerdale Water to Keekle Confluence)	1.3km SE	A river that supports freshwater pearl mussel populations.
Non-statutory			
CWS	Rheda South Park	0.7km NE	No information available.
CWS	Birkhouse Pond	0.9km SE	No information available.
CWS	Parkside Pond	1.2km E	No information available.
CWS	Dub Beck	1.7km N	No information available.
Site of Invertebrate Significance	Keekle River	0.5km W	No information available.
Site of Invertebrate Significance	Weddicar Hall	1.4km N	No information available.
Site of Invertebrate Significance	Dub Beck	1.7km N	No information available.

3.3 HABITATS

The following habitats have been identified through our assessment, with detailed Target Notes included in Phase 1 Habitat Plans for Site A, B & C (Figure 2, Figure 3 and Figure 4 respectively) and Appendix D, as appropriate:

3.3.1 Broad-leaved Woodland – Semi-natural

Broad-leaved woodland was present along the north east and eastern boundary of site A, with further areas located within a fenced area to the south west (see TN's 1, 4, and 14; Figure 2). This habitat appeared to be predominantly semi-natural, but few planted trees were also apparent. The woodland comprised species such as ash *Fraxinus excelsior*, alder *Alnus glutinosa*, silver birch *Betula pendula* and hawthorn *Crataegus monogyna*. Several marshy grassland / swamp sections were recorded in the understorey (TN 2; Figure 2) and these included species such as soft rush *Juncus effusus*, lesser pond-sedge *Carex acutiformis* and meadowsweet *Filipendula ulmaria*.

3.3.2 Broad-leaved Woodland - Plantation

Within Site A, a line of broad-leaved plantation / young screen planting was present along the northern boundary of the site (TN 20; Figure 2) this was located on the northwards facing slope and transitioned into self-seeded broadleaved semi-natural woodland along the footpath (outside of the RLB).

Broad-leaved plantation woodland/screen planting occurred on the northern boundary of Site C, adjacent to the cycle route. The canopy was even aged and comprised frequent willow, silver birch and bird cherry *Prunus padus* with occasional ash, sycamore *Acer pseudoplatanus*, hawthorn and hazel *Corylus avellana* (TN 37; Figure 4). The shrub layer comprised bramble and ivy *Hedera helix*. The ground flora was limited and primarily comprised bare ground and leaf-litter, with ruderal species such as common nettle *Urtica dioica* and broad-leaved dock *Rumex obtusifolius.*

3.3.3 Mixed Semi-natural Woodland

A block of mixed woodland was present along the western and north-western boundary of Site A (TN 27; Figure 2). The woodland comprised a mixture of mature and younger tree species such as ash, alder *Alnus glutinosa*, Italian alder *Alnus cordata*, pine *Pinus sp.*, aspen *Populus tremula* and larch. The understorey was dominated by bramble. with occasional rose *Rosa* sp. and Male-fern also present.

3.3.4 Dense/Continuous Scrub

Willow carr scrub (c.9 m tall) was present in the south / south-east of Site A (TN's 10 & 28; Figure 2). This predominantly comprised grey willow *Salix cinerea*, but also oak *Quercus sp.*, rowan *Sorbus aucuparia*, downy birch *Betula pubescens*, silver birch, ash and hazel. Fallen dead wood was present. The ground flora was species rich marshy grassland with 70% cover and 30% leaf litter. Species present included common twayblade *Listera ovata*, cotton grass *Eriophorum angustifolium* and sphagnum moss *Sphagnum sp*.

Two areas within the willow carr scrub were selected for classification to NVC vegetation types and subsequently re-classified to wet woodland vegetation type (W1 *Salix cinerea – Galium palustre* NVC category – see NVC Report in Appendix E for details.

Continuous low-growing bramble *Rubus fruticosus agg.* scrub (TN 29; Figure 2) was present on the south-eastern edge of the broad-leaved woodland of Site C (TN 36; Figure 2), encroaching into the semi-improved neutral grassland. Bramble scrub was also present in the south-west of the site, adjacent to the allotments. A further patch of dense willow carr scrub was present immediately west of the gravel track. This area contained a large volume of fly tipped waste.

3.3.5 Scattered Scrub

Scattered willow and birch scrub was present across Site A, particularly within the marshy grassland, unimproved neutral grassland and semi-improved grassland in the centre and north-east of the site (TN 8 & 24; Figure 2).

Scattered willow scrub was present within the unimproved grassland in the south-west corner of Site C (TN 36; Figure 4). A small volume of scattered willow scrub was also present within the north-eastern section of the semi-improved neutral grassland.

3.3.6 Unimproved Neutral Grassland

Secondary unimproved neutral grassland was recorded throughout site A within the undeveloped / derelict sections of the site and around the site edges (TN 6 & 23; Figure 2). This was unmanaged and reverting to various degrees from landscaping and natural colonisation of the original slag heaps when the site was created (White Young Green, 2007). The main grass species recorded within the sward included Yorkshire fog *Holcus lanatus*, cock's-foot *Dactylis glomerata*, red fescue *Festuca rubra*, sweet vernal-grass *Anthoxanthum odoratum* and crested dog's tail *Cynosurus cristatus.* The swards also included abundant sedges, including several species of *Carex sp.* (true-sedges) and false-fox sedge *Carex otrubae.* Overall, grasslands were species-rich, herb dominated, with an average herb cover of 40% or greater.

Two areas of unimproved neutral grassland within Site A were selected for classification to NVC vegetation types (refer to NVC report in Appendix E).

Unimproved grassland was present in the south-west corner of Site C (TN 38; Figure 4) and was bordered by woodland, dense and continuous scrub and the allotments. Scattered willow scrub was present within the grassland. The grassland was structurally diverse, comprised of fine grasses such as red fescue and bent grasses and herbs including oxeye daisy, ribwort planting and yarrow. The mosaic of habitats within this area is likely to support invertebrates and reptiles.

3.3.7 Semi-improved Neutral Grassland

Semi-improved neutral grassland was recorded along the south west boundary of Site A (TN's 13, 18 & 29; Figure 2). This appeared to be managed to some degree and showed signs of agricultural improvement / landscaping. The main grass species recorded included perennial rye-grass *Lolium perenne,* Yorkshire fog, cock's-foot, red fescue and tufted hair-grass *Deschampsia cespitosa.*

Semi-improved neutral grassland was recorded throughout Site B (TN 32; Figure 3).

Semi-improved neutral grassland was present within Site C between a football field on Mark Thompson Close and the woodland along the cycle route (TN 39; Figure 4). This was unmanaged, and was starting to become tussocky, with a sward height ranging from 20 -50cm. The sward was grass dominated comprising false-oat grass *Arrhenatherum elatius*, meadow foxtail *Alopecurus pratensis* and cock's-foot present alongside neutral grassland indicators such as crested-dogs tail, common bird's-foot trefoil *Lotus corniculatus*, meadow vetchling *Lathyrus pratensis* and common knapweed *Centaurea nigra*. Scattered willow scrub was present within this area, as well as fly-tipped waste and evidence of fires.

3.3.8 Improved Grassland

An area of improved grassland was recorded within the north-west section of Site B (TN 31; Figure 3).

3.3.9 Marshy Grassland

Marshy grassland was recorded within the damper sections of Site A and occurred predominantly as a mosaic with other vegetation types including scattered scrub, dense scrub and unimproved neutral grassland (TN's 3, 9 & 16; Figure 2). These were sedge and rush dominated and included many herb species associated with damp grassland such as meadowsweet *Filipendula ulmaria* , wild angelica *Angelica sylvestris*, ragged robin *Silene flos-cuculi* and valerian *Valeriana officinalis*. Particularly rich areas contained several species of orchid including northern marsh *Dactylorhiza purpurella*, common-spotted *Dactylorhiza fuchsii*, bee-orchid *Ophrys apifera* and common twayblade.

Stands of marshy grassland were recorded within the western section of Site B (TN 30; Figure 3).

3.3.10 Amenity Grassland

Frequently mowed amenity grassland was present throughout Site A, predominantly around the site access roads, car parks and industrial estate buildings (TN 19; Figure 2).

3.3.11 Tall Ruderal

Stands of tall ruderal vegetation that included mainly willowherb species *Epilobium sp.,* broad-leaved dock, rosebay willowherb *Chamerion angustifolium*, nettle, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare* were recorded throughout Site A (TN's 5, 7 & 26; Figure 2). The ruderal vegetation was predominantly recorded in conjunction with scrub and grassland habitats. In some areas, garden escapes were apparent including garden ladie's-mantle *Alchemilla mollis*, Spanish bluebell *Hyacinthoides hispanica* and garden primrose *Primula polyantha.*

Tall ruderal vegetation was present on the edge of the grasslands and on disturbed areas alongside tracks within Site C (TN 40; Figure 4). This comprised broad-laved dock, common knapweed, soft rush *Juncus effusus*, hoary willow herb *Epilobium parviflorum* and wild angelica.

3.3.12 Fen

Site A contained areas of sphagnum fen which existed within the willow/alder scrub and were dominated by mosses (primarily sphagnum and turf-mosses) but also included herbs such as marsh horsetail *Equisetum palustre*, marsh thistle and greater bird's-foot trefoil *Lotus pedunculatus*.

3.3.13 Swamp

Small patches of swamp type vegetation comprising reed canary-grass and bulrush were recorded within the willow / alder carr southeast of Site A (TN 10; Figure 2).

3.3.14 Standing Water

Standing water was present in Site A within vehicle tracks, and forms connected linear waterbodies within the marshy/unimproved neutral grasslands and dense scrub in the south-east and north-west sections of the site. These may dry seasonally but many contained aquatic species such as lesser spearwort, water crowfoot and charophytes.

3.3.15 Running Water

Small stream – Nor Beck was located between the Site A and Site B and partially within the Site B (TN 33, Figure 3).

3.3.16 Ephemeral/Short Perennial

Stands of ephemeral / short perennial vegetation were recorded throughout Site A and predominantly noted colonising the bare ground / gravel patches within the semi-improved grassland habitats the disused hard standing areas. Species recorded included kidney vetch *Anthyllis vulneraria*, common bird's-foot trefoil, ribwort plantain *Plantago lanceolata*, ox-eye *Leucanthemum vulgare* daisy *Bellis perennis* and stonecrops *Sedium sp*.

3.3.17 Hardstanding

Hard Standing was recorded extensively throughout Site A; this comprised predominantly tarmac roads, car park areas, industrial yards and derelict hard standing patches where buildings were previously demolished (TN's 11, 12, 17, 21 & 25; Figure 2).

An area of hardstanding associated with farm building was recorded on the north-western boundary of Site B (see Figure 3).

A hardstanding carpark was present on the eastern boundary of Site C. This was used as the carpark for the Cleator Moor surgery (see Figure 4).

3.3.18 Bare Ground

Bare ground was present throughout Site A and was recorded predominantly within the dense scrub and grassland habitats in the south-east and north-west of the site. Bare ground primarily comprised tracks and areas of compacted soil formed by vehicle (motorbike and off-road vehicle) activity onsite.

Within Site C, bare ground and gravel tracks were present connecting Birks Road to the football ground. These tracks were to the rear of the Clear Moor surgery carpark and adjacent to the willow carr scrub and formed a loop with an area of tall ruderal vegetation in the centre.

3.3.19 Buildings

Site A comprised thirteen industrial buildings; some of these were small office buildings and others were large industrial warehouses / units comprising multiple sections.

Farm buildings were noted within the north-west section of Site B (see Figure 3).

3.3.20 Other habitats

Native hedgerows were located along several field boundaries within the Site B (see Figure 3).

Some smaller ditches / potential running water were also noted in the western section of Site B (see Figure 3).

Since there was no access to Site B, it was not possible to fully assess status of these habitats.

3.4 PROTECTED & NOTABLE SPECIES

3.4.1 Great Crested Newt

The desk study returned one record of GCN in Cleator approximately 2 km south from the site, recorded in 1998 (no post 2000 records were returned).

Six waterbodies were located within Site A with an additional two waterbodies located within 500m of the red line boundary (Site A, B & C combined). Suitable terrestrial habitat for GCN was present within Site A, Site B and Site C.

As part of the GCN survey conducted by Tetra Tech in 2021, all waterbodies within the site boundary were scored as 'average' or above (with the exception of 4a which scored below average). Offsite WB1 was HSI scored as excellent for GCN. All eight waterbodies surveyed either returned a negative result for GCN or were dry during the survey window. No GCN adults, juveniles, efts or eggs were observed during the torch, netting or egg searches. Refer to GCN report for detailed methodology and results (Appendix E).

Other amphibians including smooth newt, palmate newt, common frog and common toad were found onsite.

3.4.2 Bats

The desk study found records for a variety of bat species with a 2 km radius of the site, they are displayed in Table 4.

Table 4: Desk study bat results note only the nearest record have a distance and direction.

Species	No. of records	Date	Recording	Distance & Direction
Natterer's bat *Myotis nattereri*	1	2017	1 count	2 km S
Soprano pipistrelle *Pipistrellus pygmaeus*	1	2011	5 count	1.6 km NE
Noctule *Nyctalus noctula*	1	2011	1 count	0.9 km SE
Common pipistrelle *Pipistrellus pipistrellus*	2	2011	1 count	1.3 km NE
		2012	Count of more than 5 bats	1.8 km S
Unidentified bat	1	2016	Not specified	1.3 km N

There was one bat EPSML granted within 2 km of the site. The licence was for the destruction of a resting site for whiskered bat, Natterer's bat & Brandt's bat *Myotis brandti* in 2013, located approximately 0.4 km west of the site.

Buildings and trees on site were subject to the detailed bat surveys and two day roosts of common pipistrelle roosts within buildings B1 and B6 were identified within the Main Leconfield Site (Site A). Detailed results of this survey are presented in the Bat Roost Assessment Report of the site (See Appendix E).

3.4.3 Reptiles

The desk study returned one old record of a slow worm *Anguis fragilis* approximately 1.8 km north from the site, recorded in 1997 (no post 2000 records were returned).

Both Site A & C has potential to sustain a reptile population due to the presence of suitable habitat. A reptile survey involving eight site visits to establish presence or likely absence of reptiles was carried out on both Site A & C. A small/ low population of common lizard was identified on Sites A & C, with a

peak count of two common lizards observed. Refer to the Reptile Report for further details (Appendix E).

3.4.4 Badger

The desk study returned one record of badger within a 2 km radius of the site, recorded in 2018.

The habitats within the red line boundary appeared to be of suitability for badgers and are likely to provide good connectivity and foraging features. However, there were no badger setts or other signs of badgers recorded on Site A and C and within a 50m radius from both sites (wherever access allowed). It has to be noted that there was no access to Expansion Site B and the residential areas / gardens and third party land surrounding the entire CMIQ site; therefore, it was not possible to inspect these for signs of badgers.

The woodland, scrub and grassland habitats on site are considered to provide suitable features for foraging badger. The C2C cycle path with associated woodland and scrub that adjoins site to the east provides connectivity to the network of fields with trees / hedges to the north and woodland habitat to the south-east (through the underpass under Leconfield Street). All of these provide potential badger habitats and suitable dispersal routes.

3.4.5 Otter & Water Vole

The desk study returned no records of water vole within a 2 km radius of the site. The desk study did return 26 records of Otter *Lutra lutra,* with majority of these associated with River Keekle that runs approximately 1.3 km north from the site. The nearest record was approximately 0.6 km north of the site; however, the record's location description stated 'River Keekle' and therefore, it is considered that the grid reference for this record may have been mis-recorded.

Nor Beck, which was located approximately 30m north from the site boundary; comprised of a shallow, straightened ditch with generally low suitability to support otter. Shallow pools within the willow / alder carr south-east of the site are likely to be ephemeral and dry-up in the spring / summer. Therefore, the site itself is considered to provide negligible suitability for breeding, resting or foraging otter

Overall, the habitats on site may provide some suitability for commuting otter and individual otters may occasionally investigate on site. Nevertheless, the site is highly unlikely to provide breeding, resting or hunting features for this species.

No suitable habitat for water voles was observed on site during the survey; this species has very limited distribution in Cumbria with no known current (post 2000) populations in West Cumbria and the core distribution area located in the North Pennines (The Cumbria Evidence Base Information, 2010).

3.4.6 Birds

The desk study returned 1,236 records of 105 bird species within 2 km of the site (including 12 sensitive species). Of these a total of 10 are legally protected bird species listed under Schedule 1 of the W&CA, a total of 25 bird species are Birds of Conservation Concern (BOCC) Red List species and a total of 33 bird species are BOCC Amber List species.

A breeding bird survey was carried out in which a total of 31 bird species were recorded. Of these species, six were BoCC Red List and seven BoCC Amber List species. Additionally, three species were listed as Species of Principal Importance (SPI) under the NERC Act. No species listed under Schedule 1 of the W&CA were recorded within the survey area. Refer to the Breeding Bird Report for further details (Appendix E).

The habitats on site, including trees, scrub, and grassland provide suitable habitats for nesting birds.

3.4.7 Invertebrates

The desk study returned 168 records of 34 invertebrate species in the 2 km search radius. There are seven insect species listed under the NERC Act (SPI). Species are displayed in Table 7.

Table 5: Favoured food plant of NERC insect species within the desk study

Species	Foodplant preferences
Butterflies	
Dingy Skipper *Erynnis tages*	**Common bird's-foot-trefoil** *Lotus corniculatus*
Wall *Lasiommata megera*	Grasses; Tor-grass *Brachypodium pinnatum*, false brome *B. sylvaticum*, **cock's-foot** *Dactylis glomerata* and **Yorkshire fog** *Holcus lanatus*
Small Heath *Coenonympha pamphilus*	Fine grasses; **fescues** *Festuca* spp., meadow-grasses *Poa* spp., and bents *Agrostis* spp.
Grayling *Hipparchia semele*	Sheep's-fescue *Festuca ovina*, **red fescue** *F. rubra* and early hair-grass *Aira praecox*
Small Pearl-bordered Fritillary *Boloria selene*	Common dog-violet *Viola riviniana* and marsh violet *V. palustris*
Moths	
Latticed Heath *Chiasmia clathrate*	**Clovers** *Trifolium* spp. and lucerne *Medicago sativa*
Cinnabar *Tyria jacobaeae*	**Ragwort** *Jacobaea vulgaris*

*Foodplant sources for butterflies (Butterfly Conservation, 2019) and moths (UK Moths, 2019).

All of the species in Table 7, minus small Pearl-bordered Fritillary, could be found on site as their preferred foodplant has either been recorded on site (highlighted in bold) or likely to be present, based on habitats identified. As the survey was conducted in winter, a full list of plant species on site could not be gathered.

The mosaic of woodland, scrub and grassland habitats on site is considered likely to be of some importance to scarce, rare and notable species of invertebrates listed in the Table 7.

The invertebrate survey found a local level of invertebrate interest on the site, that being restricted to cinnabar moth *Tyria jacobaeae* and its caterpillars. Similarly, the site supports both common bird's foot trefoil which is the food plant of dingy skipper *Erynnis tages* and kidney vetch which is the food plant for small blue *Cupido minimus*. Refer to the Invertebrate Survey Report (Appendix E).

3.4.8 Other species

Red Squirrel

CBDC returned 123 records for red squirrel *Sciurus vulgaris* within 2 km radius of the site, with the nearest record located approximately 60m north from site.

The blocks of woodland within and adjacent to site (Figure 2, Target Notes 1 & 27) were considered to be suitable for red squirrel and they had numerous mature trees present and good connectivity to the other suitable woodland blocks and residential gardens (Figure 2, Target Notes 1, 27 & 14). The willow / alder carr sections (Figure 2, Target Notes 8, 10 & 24) comprised predominantly young trees and were considered to provide sub-optimal conditions for red squirrel.

No obvious signs of red squirrel dreys were observed within the trees on site. Also, it has to be noted that there are multiple records of grey squirrels *Sciurus carolinensis* in the near vicinity, which are known to out compete red squirrel for habitat and food and spread fatal squirrel pox virus.

West European Hedgehog

CBDC returned 47 records for West European hedgehog *Erinaceus europaeus* within 2 km radius of the site. The site has the potential to support hedgehog and the woodland, scrub and grassland on site provide suitable habitat for foraging and may contain hedgehog nests.

Brown hare

CBDC returned four records for brown hare *Lepus europaeus* within a 2 km radius of the site. The habitats on site are considered to be of sub-optimal suitability for this species due to the lack of extensive grassland cover; however, it is considered likely that individuals may occasionally commute through the site.

Polecat

CBDC returned two records for polecat *Mustela putorius* within a 2 km radius of the site; these were located approximately 2 km north of the site – at the edge of Weddicar Hall woodland. The site is considered to provide sub-optimal habitat for this species as it had no signs of their main prey – rabbits – and was likely to be subject to frequent human / dog disturbance. Polecat prefers countryside habitats with woodland edges and hedgerows

3.4.9 Invasive Non-Native Species

The desk study returned three plant species listed under the Schedule 9 of the W&CA and three animals. Table 8 displays each species and the nearest record to the site.

Table 6: Invasive species identified in the desk study.

Species	Number of records	Distance & Direction
Montbretia *Crocosmia pottsii x aurea = C. x crocosmiiflora*	1	1.7 km W
Indian Balsam *Impatiens glandulifera*	4	1.5 km N
Japanese Knotweed *Reynoutria japonica*	10	1 km W
Canada goose *Branta canadensis*	1	Grid ref not accurate enough
American Mink *Neovison vison*	1	1.5 km N
Grey Squirrel *Sciurus carolinensis*	26	0.5 km E

The Invasive Non-Native Species survey conducted by Tetra Tech in 2021 (see Appendix E) found areas of Japanese knotweed along both the southwest boundary of Site A and in three separate locations to the east, west and southern border of Site C (TN's 14 – Figure 2, 34, 35 & 40 – Figure 4). Similarly, eight stands of montbretia were recorded to the west and southwest of Site A and in the grassland northwest of Site A (TN's 22 & 25; Figure 2). Himalayan balsam was present in extensive stands at two places along the northwest border in the mixed woodland area of site A (TN 27; Figure 2). Lastly, two species of cotoneaster were recorded on site, hollyberry cotoneaster (TN 18; Figure 2) and wall cotoneaster (TN's 10, 12, 17 & 25; Figure 2). Single stands were identified in the grasslands surrounding the buildings centre north as well as to the west and in the woodland located to the south (Site A). Refer to INNS report (Appendix E).

3.5 IMPORTANCE OF ECOLOGICAL FEATURES

In line with the CIEEM PEA Guidelines, and based on the above baseline information, the importance of each ecological feature recorded within the study area is given in Table 4 below. The categories used are those which are defined in Section 4 of the CIEEM EcIA Guidelines (2018 v1.1):

Table 7 Importance of Ecological Features

Feature	Importance	Rationale
River Ehen SAC	International	Designated for freshwater pearl mussel *Margaritifera margaritifera* population and Atlantic Salmon *Salmo salar.*
River Ehen (Ennerdale Water to Keekle Confluence) SSSI	National	Designated for freshwater pearl mussel *Margaritifera margaritifera* population
Dub Beck CWS; Rheda South Park CWS; Parkside Pond CWS; Birkhouse Pond CWS	County	Designated County Wildlife Site
Dub Beck; Weddicar; Keekle River Site of invertebrate significance	Local	Locally designated Site of Invertebrate Significance.
Mixed Woodland and Brood-leaved Woodland	Local	Habitat is common and widespread but it is likely to support a diverse range of fauna including invertebrates, small mammals and nesting birds. The wet woodland area (Target Note 54) appears to support diverse wetland plant communities.
Dense and scattered scrub	Negligible	Habitat is common and widespread.
Secondary unimproved neutral grassland	Local	Habitats are common and widespread but it is likely to support a diverse range of fauna including invertebrates, small mammals and foraging birds.
Semi-improved neutral grassland and marshy grassland	Local	Habitats are common and widespread but it is likely to support a diverse range of fauna including invertebrates, small mammals and foraging birds.
Amenity grassland; tall ruderal; hardstanding; bare ground; buildings; standing water	Negligible	Common habitats that are wide spread throughout the surrounding landscape.
GCN	Likely absent from site	All waterbodies within site scored average on the HSI, except pond WB1 which scored excellent. eDNA concluded no presence of GCN within the waterbodies.
Reptiles	Local	A small local population of common lizards were found to be present on site. The site provides suitable foraging / commuting habitat and potential refugia / hibernacula features.
Bats	Local	Two day roosts of common pipistrelle within buildings B1 and B6 were identified (Site A). No other presence was found in any other building. Three trees were identified as high potential and eleven trees identified as moderate potential. The habitats on site with woodland, scrub and grassland are

Feature	Importance	Rationale
		considered to be of suitability for foraging and commuting bats.
Badgers	Unknown / Unlikely to be present	No badger setts were recorded within 50m radius of the Site A and Site C. However, full walkover of Site B was not possible. There are no records for badger within the local area. However, as the site provides suitable habitat for this species it is considered possible that local badger populations (if present in the locale) may opportunistically use the site.
Breeding Birds	Local	Habitats within the site are likely to support a wide range of common bird species.
Invertebrates	Local / County	Habitats within the site support a population of cinnabar moths as well as host bird's-foot trefoil which is the foodplant of the dingy skipper.
Red squirrel	Local	The woodland habitat on site may provide suitable breeding / foraging provisions for this species.
Hedgehog	Local	Habitats on site are suitable for foraging and hibernating hedgehog. Hedgehog is a S41 Priority Species.
Either: International (incl. European) / National / Regional / County / Local / Negligible **Or:** Unknown (i.e. further surveys/information needed)		

The potential for the proposals to have adverse or beneficial impacts on these features, along with the need for any mitigation or enhancement measures are discussed in detail below.

4.0 RELEVANT PLANNING POLICY & LEGISLATION

4.1 REVISED NATIONAL PLANNING POLICY FRAMEWORK

A revised NPPF was issued on 20th July 2021 (Ministry of Housing Communities and Local Government, 2021) and currently supplements government Circular *06/2005, Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System* (Office of the Deputy Prime Minister, 2005).

Circular 06/2005 states that the presence of protected species is a material consideration in the planning process. Paragraph 174 of the NPPF also states that:

'*Planning policies and decisions should contribute to and enhance the natural 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

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.

The conservation and enhancement of wildlife is also specifically reference re: development within the National Parks or the Broads.

Paragraph 180 then goes on to confirm that:

When determining planning applications, local planning authorities should apply the following principles:

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

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*

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

Regarding EcIA's and HRA's – any sites identified, or required, as compensatory measures for adverse effects on any Natura 2000/habitats site should also be given the same level as protection as the pSPA's and cSAC's themselves. In addition, when an application is being determined, Paragraph 182 clarifies that:

"*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.*"

Paragraph 185 is also relevant as;

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:…

c) *limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

4.2 BIODIVERSITY 2020: A STRATEGY FOR ENGLAND'S WILDLIFE & ECOSYSTEM SERVICES

Biodiversity 2020 (DEFRA, 2011) replaces the previous UK Biodiversity Action Plan and sets national targets to be achieved. The intent of Biodiversity 2020, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are the SPI & HPI detailed under NERC Act (see Appendix B for further details).

4.3 LOCAL BIODIVERSITY ACTION PLAN

Local Biodiversity Action Plans (LBAPs) identify habitat and species conservation priorities at a local level (typically County by County) and are usually drawn up by a consortium of local Government organisations and conservation charities. Although they are no-longer managed at a national level many are still reviewed and updated at a local level.

The Cumbria Biodiversity Action Plan (CBAP) was launched in 2001; SAPs were drawn up for 21 species and HAPs were drawn up for 19 habitats. Following the UKBAP review in 2007, the CBAP was reviewed in 2009 and it was decided to include all habitats and species which are listed as HPI and SPI under the NERC Act 2006. A list of all 268 SPI which occur in Cumbria is provided at:

https://www.cumbriawildlifetrust.org.uk/sites/default/files/cumbria%20bap%20species%20updated%20list%202009%20web.pdf

The original action plans for Cumbria were further reviewed as part of the Cumbria Biodiversity Evidence Base (CBEB) and detailed statements have been prepared for 11 species/species groups (Table 10)

and 21 habitats (Table 11). For the purposes of this report, the species and habitats listed in the following tables are considered to represent the current CBAP.

Table 8 LBAP SAPs

Species Action Plans	
Barn Owl, *Tyto alba*	Red Squirrel, *Sciurus vulgaris*
Bats, *Chiroptera*	Reptiles
Great Crested Newt, *Triturus cristatus*	Small Blue butterfly, *Philotiella speciosa*
Hen Harrier, *Circus cyaneus*	Water Vole, *Avicola amphibius*
Natterjack Toad, *Epidalea calamita*	Wintering Geese and Swans
Otter, *Lutra lutra*	-

Table 9 LBAP HAPs

Habitats Action Plans	
Bogs	Hedgerows
Calaminarian Grasslands	Lakes, Ponds and Tarns
Calcareous Grassland	Lowland Dry Acid Grassland
Coastal and Floodplain Grazing Marsh	Montane Habitats
Coastal Habitats Above High Water	Open Mosaic Habitats on Previously Developed Land
Coastal Intertidal Habitats	Rivers
Coastal Subtidal Habitats	Rock Habitats
Fen, Marsh and Swamp	Saline Lagoons
Hay Meadows and Pastures	Semi-Natural Woodland
Heathland	Traditional Orchards
Wood-Pasture and Parkland	-

It should be noted that the existence of a SAP or HAP does not always infer an elevated level importance for those features. These plans may be designed to encourage an increase in these habitats/species, rather than to protect a county-scarce feature (for example).

4.4 LOCAL PLAN

Copeland Borough Council holds the following policies relevant to this development in their Local Plan 2013-2028: Core Strategy and Development Management Policies DPD, adopted in 2013:

Policy SS5 – Provision and Access to Open Space and Green Infrastructure

Adequate provision and access to open space, and the development of the Borough's green infrastructure, will be promoted by:

a) Protecting against the loss of designated open space (including playing fields, play areas and allotments) within settlements, and of the access routes or wildlife corridors which connect them, whilst ensuring also that they are well maintained. Where it is necessary to build on land covered by this policy, equivalent replacement provision should be made.
b) Setting minimum open space standards for new development in accordance with Policy DM12.

c) Promoting the establishment, improvement and protection of green infrastructure networks connecting open spaces with each other and with the countryside.

Policy ENV3 – Biodiversity and Geodiversity

The Council will contribute to the implementation of the UK and Cumbria Biodiversity Action Plan within the plan area by seeking to:

a) Improve the condition of internationally, nationally and locally designated sites.
b) Ensure that development incorporates measures to protect and enhance any biodiversity interest.
c) Enhance, extend and restore priority habitats and look for opportunities to create new habitat.
d) Protect and strengthen populations of priority or other protected species.
e) Boost the biodiversity value of existing wildlife corridors and create new corridors, and stepping stones that connect them, to develop a functional Ecological Network.
f) Restrict access and usage where appropriate and necessary in order to conserve an area's biodiversity value.

Policy DM25 supports this policy, setting out the detailed approach towards managing development proposals that are likely to have an effect on nature conservation sites, habitats and protected species.

Policy DM25 – Protecting Nature Conservation Sites, Habitats and Species

All development proposals should:

a) Protect the biodiversity value of land and buildings.
b) Minimise fragmentation of habitats.
c) Maximise opportunities for conservation, restoration, enhancement and connection of natural habitats and creation of habitats for species listed in UK and Cumbria Biodiversity Action Plans. Special consideration should also be given to those European habitats that lie outside the boundaries of European designated sites.

Development proposals that would cause a direct or indirect adverse effect on locally recognised sites of biodiversity and geodiversity importance, including County Wildlife Sites, Local Nature Reserves and Regionally Important Geological/Geomorphological Sites or protected species will not be permitted unless:

a) The benefits of the development clearly outweigh the impacts on the features of the site and the wider network of natural habitats; and
b) Prevention, mitigation and/or compensation measures are provided. An appropriate long-term management plan will be sought and arrangements to provide adequate funding will be made in accordance with a formal planning agreement or obligation.

Where compensatory habitat is created, it should be of equal or greater size than the area lost as a result of the development.

Development proposals where the principal objective is to conserve or enhance biodiversity or geodiversity interests will be supported in principle.

Where there is evidence to suspect the presence of protected species any planning application should be accompanied by a survey assessing their presence and, if present, the proposal must be sensitive to, and make provision for, their needs.

All development proposals must take into account any likely significant effects on the internationally important sites both within the Borough and within a 20km radius of the Borough boundary as well as those that are hydrologically linked to the development plan area.

Policy DM28 – Protection of Trees

Development proposals which are likely to affect any trees within the Borough will be required to:

a) Include an arboricultural assessment as to whether any of those trees are worthy of retention and protection by means of a Tree Preservation Order.
b) Submit proposals for the replacement or relocation of any trees removed, with net provision at a minimum ratio of 2:1, with preference for the replacement of trees on site and with native species.

Any proposed works to Trees within Conservation Areas, or protected with Tree Preservation Orders, will be required to include an arboricultural survey to justify why works are necessary and that the works proposed will, where possible, not adversely affect the amenity value of the area. Applicants for development that will result in the loss or deterioration of ancient woodland or veteran trees outside woodland should demonstrate that the need for and benefits of the development will clearly outweigh the loss.

4.5 LEGISLATION

Full details of the UK legislation and offences which are relevant to the ecological receptors identified are included in Appendix B. However, based on the findings of our assessment, it is considered that the proposals will need to consider the following legal provisions:

- Disturbance or killing of an EPS (bats);
- Disturbance or killing of an W&CA species (reptiles);
- Disturbance or killing of a S41 Priority Species (invertebrates, hedgehog);
- Disturbance of nesting wild birds;
- Disturbance of nesting Schedule 1 bird species or their dependant young; and
- Cause of permit the spread of an invasive species into the wild.

5.0 DISCUSSION & RECOMMENDATIONS

5.1 DESIGNATED SITES

5.1.1 Natura 2000 Sites – River Ehen SAC

Nor Beck is located within the red line boundary, running through southern section of site B and northern section of Site A. The beck is culverted beyond the wester CMIQ boundary, entering the River Keekle which flows into the River Ehen. However, the River Keekle does not flow into the designated part of the River Ehen SAC and the designated feature of the SAC is located upstream from where the River Keekle flows into the River Ehen; therefore, any potential / minor changes in water quality which may result from works taking place on the proposed site are unlikely to directly affect this designated site.

However, the qualifying features of River Ehen SAC include Atlantic salmon *Salmo salar* and freshwater pearl mussel *Margaritifera margaritifera.* These species (particularly migratory salmon) are likely to use the entire length of River Ehen (not only the section designated as SAC). Therefore, the River Ehen stretch located downstream from the confluence with the River Keekle is considered to be a functionally linked habitat for both qualifying features mentioned above. Therefore, any surface water run off from ground disturbance and other activities during construction that enter Nor Beck have potential to enter the River Keekle and eventually the River Ehen.

Since Likely Significant Effects upon the conservation status of the qualifying species of River Ehen SAC cannot be ruled out the Report to inform Habitat Regulation Assessment was completed by Tetra Tech in 2021 (Appendix E).

Refer to the Habitats Regulations Assessment (HRA) report for further details on likely impacts on River Ehen SAC (Appendix E).

5.1.2 Sites of Special Scientific Interest – River Ehen

The site lies within the Impact Risk Zone (IRZ) for River Ehen (Ennerdale Water to Keekle Confluence) SSSI. However, the proposals do not fall into a category of likely risk and therefore consultation between NE and LPA in relation to impacts on the SSSI sites is unlikely to be required.

5.1.3 Local Wildlife Sites

There are seven local wildlife sites within a 2 km radius of the site. The closest CWS site Rheda South Park is 0.7 km north east from the site. As no designation information was available for each of the sites, it is difficult to assess impacts on the particular habitats and species that may be found on site. However, given the distance from the site to the Local Wildlife Sites, no adverse effects are considered likely. No further assessment is required.

5.2 HABITATS

5.2.1 Habitats of Principle Importance

The MAGIC search identified the following HPI types:

- Open mosaic (Site A)
- Deciduous woodland (Site A)
- Good quality semi-improved grassland (Non Priority) (Site B)
- No main habitat but additional habitat exists: fens (Site B)

The ‘Deciduous Woodland’ HPI is located along the western and northern boundary of the site. During the site survey, it was noted that the woodland along the western boundary was mixed in nature.

The ‘open mosaic’ HPI was identified in the southern part of the site (the location indicated includes TNs 7-10; Figure 2). The site survey identified that these areas were a combination of tall ruderal vegetation, dense willow carr scrub, marshy grassland, bare ground and standing water. It is possible that open mosaic vegetation may have been present on site A previously, but this has succeeded over time to the marshy grassland and scrub habitats.

The HPI habitats indicated on site B could not be confirmed due to the lack of access.

The NVC survey identified that the willow carr scrub (TN10; Figure 2) is wet woodland HPI (refer NVC Report – Appendix E for full details)

The current CMIQ Masterplan – Appendix C – includes the retention of the main area of wet woodland HPI habitat on site A and some of the unimproved neutral grassland present adjacent to the woodland (TN23; Figure 2). The CMIQ Masterplan – Appendix C – also shows that the woodland / trees along the site perimeter will be retained as part of the redevelopment. The creation of additional HPI habitats are proposed under the re-development of the industrial estate. Further details are available in the BNG Report produced by Tetra Tech (Appendix E).

5.2.2 Woodland Habitats

The woodland blocks along western and northern boundary of Site A classed as ‘Deciduous Woodland’ HPI according to MAGIC; during the site survey, it was noted that the woodland along the western boundary was mixed in nature. Mixed woodland was also noted throughout Site B and along the C2C cycle path route (west of site C).

The other woodland habitats on site comprise predominantly of willow / alder carr and are wet woodland HPI.

The current CMIQ Masterplan (Appendix C) indicates that that mixed woodland habitats as well a wet woodland in the southern section of the site will be retained and there are no significant impacts anticipated on these habitats.

5.2.3 Grassland Habitats

The grassland habitats on site are varied and include grasslands of both low and high conservation value. The low value grasslands are primarily amenity and semi-improved grasslands which are common habitats that are wide-spread throughout the surrounding landscape. However, the NVC survey conducted by Tetra Tech in 2021 has identified several stands of species-rich neutral grassland within the Site A (see Appendix E for details). The NVC survey recommends that a small species-rich area of grassland (adjacent to TN12; Figure 2) should be translocated and included as part of the habitat creation of site.

The CMIQ Masterplan – Appendix C – shows that some sections of grassland habitat (marshy & semi-improved grassland) within Site A & C (Target Notes 22, 23 & 39; Figure 2 and Figure 4) are to be removed and replaced with areas of hardstanding while other stands of species-rich grassland will be retained within the development.

To compensate for loss of grassland habitats the CMIQ Masterplan (Appendix C) proposes creation of new species-rich grassland within the development footprint. Site A will include a mosaic of retained grassland and new meadow grassland, with Site B having a large area of retained marshy grassland. Please refer to the Tetra Tech Biodiversity Net Gain Report (2021) in Appendix E for details.

5.2.4 Habitat and Landscape Management Plan

No Net Loss of biodiversity and Net Gain are fundamental principles in policy in the UK at present. These aim to halt the loss of biodiversity and maximise improvements. The local plan for Copeland also states '*ensure that development incorporates measures to protect and enhance any biodiversity interest'.* Copeland Borough Council Biodiversity Target aims to achieve 'no net loss' and restoring at least 10% of degraded ecosystems

A Habitat and Landscape Management Plan (HLMP) is recommended to accompany the final detailed design layout for the site. This should include appropriate mitigation measures to off-set any habitat loss as a result of the development and provisions for biodiversity enhancement in line with Biodiversity Net Gain principal and the Copeland Local Plan Policy ENV3 to: *Ensure that development incorporates measures to protect and enhance any biodiversity interest'*

A separate Biodiversity Net Gain report has been produced by Tetra Tech in 2021; please refer to Appendix E for the details.

5.2.5 Construction Environmental Management Plan

It is recommended that the protection of on-site and adjacent habitats during construction works should be addressed through the provision of a Construction Environmental Management Plan (CEMP).

Measures relating to the protection of ecological features should include:

- Guidance for Pollution Prevention (GPP5) for working in, near or over watercourses should be followed at all times in order to prevent any hydrological changes to Nor Beck.
- A safe system for the correct storage of materials/chemicals should be implemented so that materials are stored in a suitable manner as to avoid spills or runoff.
- Appropriate measures to manage dust generation during construction should be implemented (e.g. damping down of bare areas in summer).
- A system to make sure waste is removed at the earliest opportunity to avoid contamination of ground. Contractors should also avoid leaving construction waste within the site.
- Chemical applications should be avoided where possible. If the application of herbicide or pesticide is required, then a non-residual chemical should be applied using either a wiping or spraying (i.e. localised) method only to clear areas of weeds.
- ECOW checks for hedgehog, breeding birds, red squirrel and other species prior to any vegetation clearance / habitat removal and ground disturbance.
- Biosecurity measures to avoid spread of the invasive plant species

5.3 PROTECTED & NOTABLE SPECIES

5.3.1 Amphibians

The great crested newt and its habitat are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). Under the legislation, it is an offence to intentionally kill, injure or take GCN as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a GCN or disturb an animal while it is occupying a structure or place which it uses for that purpose. GCN are also a NERC S41 and LBAP species.

Environmental DNA (eDNA) and HSI assessments were carried out during the peak GCN breeding season (May-June 2021) along with traditional presence/ likely absence surveys. Following the eDNA results (and lack of observations of GCN during the traditional survey visits) GCN are confirmed as likely absent from all ponds surveyed. Therefore, no further work is required in relation to GCN. In the unlikely event of GCN being recorded during works on site then works should be postponed and advice sought from a suitably qualified ecologist.

Four other amphibian species: a medium population of palmate newt, a small population of smooth newt, as well as common frog and common toad were observed on Site A and C.

Palmate newt, common frog and common toad are all breeding onsite, as evidenced by the various life stages (tadpoles, froglets, adults, immature newts and newt eggs) observed. There is also suitable terrestrial habitat for refuge and hibernation present on Site A & C.

Common toad is protected under the NERC Act as S41 SPI. The NERC Act states that "*Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*." Section 41 of the Act refers to a published list of habitats and species which are of principal importance for the conservation of biodiversity in England as such the presence of a S41 species is a material consideration during the planning process. Common toad were observed onsite and the presence of tadpoles at waterbody 5 confirms breeding onsite. Common toad are also likely breeding in waterbodies 1 - 5b as waterbodies 1 – 5c are interconnected.

Reasonable Avoidance Measures (RAMs) are recommended to protect notable species onsite including common toad, during works.

The development will also impact on smooth newt and common frog populations present on Site A & Site C. The RAMs developed for the protection of common toad should also include measures for the protection of other amphibians (i.e. smooth newt, palmate new and common frog) within the site.

It is recommended that an Ecological Clerk of Works (ECoW) is appointed prior to works commencing and RAMs for amphibians are implemented throughout the lifetime of the works.

Reasonable avoidance measures (RAMs) for amphibians and reptiles prior to and during works include the following:

- A toolbox talk should be provided to the contractors at the start of the works. The toolbox talk will detail any RAMs and should also mention other animals that may be encountered on site during works, such as hedgehog.
- Any site clearance works, including vegetation removal, removal of natural /artificial refugia and breaking ground must be undertaken during the amphibian and reptile active season (March - end October during periods of suitable weather) to avoid impacting on hibernating animals.
- All removal of the below-ground parts of cleared vegetation e.g. scrub roots must be undertaken during the amphibians and reptile active season (March - end October inclusive) to avoid impacting on hibernating amphibians.
- Immediately prior to site clearance works, an ECoW should finger-tip search and check all of the refugia and sheltering places for animals. This will then be followed by the removal of the refugia under the supervision of the ECoW.
- For the loss of any suitable grassland terrestrial habitat, it is recommended that staged strimming is undertaken to displace animals from these areas and encourage dispersal to suitable retained areas. Strimming should be undertaken in a directional manner. For example, the grassland in the western part of the site should be strimmed from the industrial estate towards the woodland. This will allow displaced animals to move towards the retained woodland and woodland edge habitats.

- Uninjured animals encountered at any time during site clearance works should be carefully handled using gloved hands and moved to a retained area of habitat a suitable distance from machinery and site works. Any injured animals should be taken to a vet or wildlife clinic. Contact an ecologist for ECoW advice.
- Any pipes stored, or installed on-site, with a diameter of greater than 200mm should be covered or capped at night to reduce the risk of animals becoming trapped inside.
- Backfilling excavations before the end of the day, or covering of excavations greater than 300 mm depth before nightfall.
- Escape routes should be incorporated into shallower excavations if covering is not practicable, such as escape boards or shallow sloped sides.
- Daily checks of any excavations should be made by contractors prior to commencing work to ensure that no animals have become trapped in the excavations. Should a trapped protected / notable species be found within the works, the supervising ECoW or Cumbria Wildlife Trust (CWT) should be contacted immediately for advice.
- If any injured animals are found during works, then all works should stop immediately the animal should be taken to an appropriate wildlife hospital or centre for relocation. The incident should then be reported to the ECoW.
- Storage of waste and materials to avoid creating potential resting places or areas of pooling water with potential for amphibians to breed in, by storing material on raised platforms e.g. wooden pallets.
- It is preferable to use wheeled machinery rather than track machinery. However, if track machinery is used it should only track over areas already cleared under supervision.
- No night-time working.
- Proposed lighting schemes for the site should avoid light spill on to open water due to the potential to interrupt breeding activity.

5.3.2 Reptiles

All species of native reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). The sand lizard (*Lacerta agilis*) and smooth snake (*Coroenella austriaca*) are further protected under Conservation of Habitats and Species Regulations 2017 (as amended) although this site lies beyond their range.

The Tetra Tech Reptile Survey conducted in 2021 indicates that breeding populations of common lizard are present on site (see Appendix E for Reptile Survey Report). The proposed development is therefore likely to impact reptiles present on site.

Reptiles observed during surveys were confined to areas of hardstanding with surrounding areas of scrub and grassland margins. Areas of suitable reptile habitats will be retained and have been incorporated into the site Masterplan (Appendix C), including areas of bare ground, neutral grassland and bramble scrub on Site A and areas of mixed and bramble scrub as well as neutral grassland within Site C. The woodland margins surrounding Site A and between Sites A and C will be retained as part of the development. Further to this, a cycle path to the east of the site may also provide suitable connectivity to the wider environment.

The RAMs recommended in section above (in relation to amphibians) should also be applicable to reptile species and should be implemented as required. Detailed recommendations and mitigation measures have been provided in the Reptile Survey Report for the site (Appendix E)

5.3.3 Bats

All bats and their roosts receive full protection both under The Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to:

- Intentionally kill, injure or take a bat;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat; or
- Disturb a bat while it is occupying a structure or place which it uses for that purpose.

In addition, the provisions of the NERC require local authorities to have due regard to protected species when determining planning applications, including all UK bat species. Bats are listed in the Cumbria LBAP.

Roosting bats

The detailed Bat Survey was conducted on site in 2021 by Tetra Tech. This included building assessments and nocturnal (presence / absence) surveys within the Main Leconfield Site A and tree assessment within the Sites A and Site C. Detailed survey methodology and results are provided in the Bat Roost Assessment Report for the site (Appendix E).

Two day roosts of common pipistrelle within buildings B1 and B6 were identified (Site A). These were roosts of Low Conservation Significance. It is proposed to demolish building B6, an EPSML must be obtained from Natural England prior to commencing development works at B6. The proposed Masterplan (Appendix C) indicates that there will be no works to building B1 and bat roost within this building will be retained.

Three trees with high bat roost suitability, eleven trees with moderate bat roost suitability and thirteen trees with low bat roost suitability were identified within Site A and Site C. According to the CMIQ Masterplan (Appendix C) There are no works proposed to the trees with bat roost suitability.

Further information pertaining to bat survey results, mitigation and potential impacts are detailed within the Bat Roost Assessment Report (Appendix E).

Foraging and commuting bats

Low numbers of at least three species of bats were recoded using the site or adjacent habitats during the emergence surveys with common pipistrelle bats frequently commuting through site and foraging along the woodland and scrub edges.

It is considered that the loss of the small area of suitable habitats on site may affect commuting routes and foraging grounds of the local bat populations. However, it is considered unlikely that these losses will be significant since the bat activity levels on site were considered to be generally low and the Masterplan for the site (Appendix C) indicated that majority woodland / habitats corridors will be retained post development with some new corridors / hedgerows established.

5.3.4 Badger

Badgers are protected and so are the setts (burrows) they live in. Under the Protection of Badgers Act 1992, in England and Wales it is an offence to:

- Wilfully kill, injure or take a badger (or attempt to do so);
- Cruelly ill-treat a badger;
- Dig for a badger;
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it;

- Cause a dog to enter a badger sett; or
- Disturb a badger when it is occupying a sett.

No badger setts or other signs of badgers recorded within the Site A and Site C (and within 50m radius of these site wherever access allowed). Therefore, badger setts are considered unlikely to occur within Site A and Site C. There was no access to the Site B and therefore full walkover of this site was not possible. Therefore, presence of badger setts within the Site B cannot be ruled out.

The habitat on site appears to be suitable for badgers and there are records for this species within 2 km; badger are highly mobile and can rapidly colonise new areas. Therefore, presence of badger may be a potential constraint to the future development works.

It is recommended that a pre-works badger survey of the proposed development area is undertaken at least three months prior to works.

If a badger sett is found during works, an application for a licence to disturb or destroy the sett may be required to be completed and approved by NE, to avoid contravention of legislation.

5.3.5 Birds

All wild birds, their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended).

A breeding bird survey was carried out within the breeding bird season (May-June 2021) in which a total of 31 bird species were identified. Of these species, six BoCC Red List and seven BoCC Amber List species were recorded. In addition, three species listed as Species of Principal Importance (SPI) under the NERC Act were recorded.

Of the 31 species recorded, six species were confirmed breeders, while 10 were probable breeders and 15 were possible breeders.

The breeding bird surveys conducted by Tetra Tech in 2021 revealed that breeding birds recorded on site included predominantly common passerine species breeding within the woodland edge and scrub habitats on site. The Masterplan from the CMIQ indicates that majority of these habitats will be retained and incorporated into the proposed site layout. **Therefore, it is considered that the proposed development is unlikely to significantly affect local populations of breeding birds through habitat loss and availability of potential breeding territories.**

Refer to the Leconfield Breeding Bird Survey Report (Appendix E) for detailed results, recommendations and avoidance measures for the vegetation removal works..

5.3.6 Red Squirrel

The red squirrel is a protected species in the UK and is included in Schedules 5 and 6 of the Wildlife & Countryside Act 1981 (as amended). It is an offence to intentionally kill or injure a red squirrel or intentionally or recklessly damage or destroy any structure or place a red squirrel uses for shelter or protection, or disturb a red squirrel while it occupies such a place.

As a precaution measures, any suitable trees proposed for removal as part of the proposed development should be checked for red squirrel dreys prior to removal.

5.3.7 Invertebrates

The site is likely to support a range of commonly occurring invertebrate species as well as some local BAP Priority and SPI species that were recorded within 2 km. The Invertebrate survey found areas of birds-foot trefoil which is known to be the dingy skippers food plant.

The woodland, scrub, grassland and ruderal habitats on site are considered to be probably of local value for invertebrates. The CMIQ Masterplan Appendix C – shows that some of these habitats may be lost during construction. Provisions to compensate for the loss of these habitats should be included in the HLMP (see section 5.2.4). Plants selected for inclusion in the final planting strategy, should be chosen to maximise the overall biodiversity value of the re-developed site, including nectar-rich species of local providence for butterflies and bees. In addition, landscaping should be managed in a sympathetic manner, using few chemicals to encourage invertebrate diversity.

5.3.8 Invasive species

An invasive non-native species (INNS) walkover survey was carried out during the month of June 2021 in order to assess any INNS within the site. Four plant species listed on Schedule 9 of the WCA were recorded during the survey:

- Japanese knotweed *Fallopia japonica (Target Notes 14, 34, 35 & 40)*;
- Montbretia *Crocosmia x crocosmiiflora (Target Notes 22 & 25);*
- Himalayan balsam *Impatiens glandulifera (Target Note 18);*
- Hollyberry cotoneaster *Cotoneaster bullatus (Target Note 18)*; and
- Wall cotoneaster *Cotoneaster horizontalis (Target Notes 10, 12, 17 & 25).*

Refer to the Leconfield INNS Report for specific details on management of this invasive plant species (Appendix E)

5.4 ENHANCEMENTS

5.4.1 Amphibians and Reptiles

In line with the NPPF, it is recommended that enhancements to the site to improve habitat quality are implemented, including the following:

- To create and implement additional hibernacula suitable for amphibian hibernation, with three to be distributed within the wet woodland areas of Site A and a number of hibernacula to be incorporated into the woodland north-west of Site A and within suitable areas of Site C.
- Areas of grassland and woodland which have been incorporated into the design of the proposed development should be managed to retain habitat suitability for amphibians, reptiles and invertebrates.

The design of Site B has included a number of enhancements that benefit the reptile, amphibian and invertebrate species including open water, reed beds and species rich grassland. This site acts as a mitigation area for entire site, with the proposed layout affording no net habitat loss.

5.4.2 Bats

There is an opportunity to increase the bat roosting provisions on site in accordance with the National Planning Policy Framework (NPPF) in order to *'minimise impacts on biodiversity and provide net gains in biodiversity where possible...'.*

It is recommended that 20 no. new bat boxes are incorporated into the proposed new buildings or erected on the existing building or trees. These could be in form of built-in bat boxes (such as Schwegler 2FR Bat Tube or similar) or external bat boxes (such as Schwegler 1FF or similar).

The new planting / landscaping on site should include bat friendly planting at the edge of habitats to increase night flying insects. Detailed planting recommendations are included in the Bat Roost Assessment report (Appendix E).

5.4.3 Birds

A nest box scheme undertaken as part of the development could provide additional nesting provisions for the local populations of breeding birds.

The number of nesting opportunities on site could be improved further by installing a bird boxes on existing trees or incorporating integrated bird boxes within the new buildings desing for each tree/shrub removed, on new trees and the new buildings.

It is recommended that the following box types (or equivalent) are used:

- At least 20 no. 1B Schwegler Nest Box (or similar) with 32mm entrance hole to attract small-medium crevice dwelling species
- At least 20 no. 2H Schwegler 2H Nest box (or equivalent) with open front to attract species such as robin *Erithacus rubecula,* blue tit, coal tit and wren *Troglodytes troglodytes*:
- 10 no. Swift bricks or similar could be incorporated during the building process to provide breeding space for cavity dwelling species such as swift
- 10 no. house sparrow nest boxes and 10 no. swallow cups could be installed on the new / existing buildings.

Detailed planting recommendations are included in the Bat Roost Assessment report (Appendix E).

5.4.4 Invertebrates

Due to the large numbers of invertebrate species and their diverse requirements, species-specific mitigation measures are often needed. However, in general terms, impact on invertebrates should be avoided and reduced, by implementing the following measures:

- Maintain sufficient suitable habitat to support the species in the local area;
- Phase works and restoration activity to provide habitat continuity, and
- Create new invertebrate habitat.

5.5 BNG

The BNG assessment prepared by Tetra Tech in 2021 (see Appendix E) recommends enhancement measures for the following retained habitats:

Site A

- The condition of the semi-improved grassland in the south of Site A will be improved from poor to moderate through appropriate management to reduce the number of undesirable species present and to increase biodiversity.

Site B

- The condition of a retained area of marshy grassland will be enhanced from poor to moderate, subject to the completion of a BNG condition assessment of Site B. Additionally, it is proposed to create and area of open water with associated reed beds in the south-west section of Site B.

Site C

- The condition of retained woodlands will be improved from poor – moderate or moderate – good, through appropriate management including but not limited to: removal of INNS, selective thinning, retention of deadwood and selective removal of diseased trees.

6.0 SUMMARY

6.1 DESIGNATED SITES

- The works are not considered to impact on any on any statutory or non-statutory designated sites in the area, including River Ehen SAC. Further assessment is not required.
- The development may fall into SSSI IRZ under the following categories: *Air Pollution, Combustion, Waste & Water Supply.* If any of the above activities are proposed as part of the new / re-developed industrial estate, LPA consultation with NE is likely to be required.

6.2 HABITATS

- It is recommended that the broadleaved woodland HPI habitats are retained as part of the proposed re-development of the industrial estate.
- Habitat and Landscape Management Plan (HLMP) is recommended to accompany the final detailed design layout for the site. This should include appropriate mitigation measures to off-set any habitat loss as a result of the development and provisions for biodiversity enhancement in line with Biodiversity Net Gain principal and the Copeland Local Plan Policy ENV3.
- It is recommended that the protection of on-site and adjacent habitats during construction works should be addressed through the provision of a Construction Environmental Management Plan (CEMP).

6.3 PROTECTED & NOTABLE SPECIES

- Following eDNA and traditional presence/ absence surveys it was found unlikely that GCN are present on the site.
- A medium population of smooth and palmate newts were found with further common toad and common frog populations also being present.
- A low population of common lizards were found to be present on site.
- RAMs should be devised and Ecological Clerk of Works (ECoW) checks should be conducted for amphibians, reptiles and other species that prior to any vegetation clearance / habitat removal and ground disturbance
- Detailed bat surveys on site revealed that buildings B1 and B6 held common pipistrelles day roosts used by induvial bats. Detailed survey results and mitigation are listed within the Bat Roost Assessment Report.
- There was no current evidence of badger setts on Site A and Site C. No walkover survey was conducted within Site B due to the restricted access. It is recommended that a pre-works badger survey of the proposed development area is undertaken at least three months prior to works.
- The breeding bird surveys revealed that breeding birds recorded on site included predominantly common passerine species breeding within the woodland edge and scrub habitats on site. The proposals indicate that majority of these habitats will be retained and incorporated into the proposed site layout. Detailed survey results and mitigation and avoidance measures are listed within the Breeding Bird Survey Report.
- The site is considered to be of local value for invertebrates. A biodiversity planting scheme is recommended as part of the HLMP in order to provide suitable habitats for invertebrates and to offset the loss of the current nectar-rich habitats.
- Any suitable trees proposed for removal as part of the proposed development should be checked for red squirrel dreys prior to removal.
- Management measures detailed in the INNS Report should be followed to mitigate the impact of invasive species presence.

6.4 ENHANCEMENTS

- Improvement of the condition of selected retained habitats across all sites.
- Creation of more distinctive habitat types including reedbeds, open water, woodland and species-rich grasslands.
- The creation and implementation of additional hibernacula suitable for amphibian and reptile hibernation to be distributed through key areas of both Site A and C.
- Suitable site management of the grasslands and woodlands to retain habitat suitability for amphibians, reptiles and invertebrates. Further planting and landscaping should include bat friendly species to increase the number of night flying insects for the benefit of bats.
- The design of Site B has included several enhancements to benefit the amphibian, reptile and invertebrate populations onsite including open water, reed beds and species rich grassland which affords the entire site (A, B & C) no net habitat loss.
- The installation of bat boxes within and around the proposed new buildings, existing buildings or trees are to be included to promote roosting potential around the site.
- Provision of bird boxes to increase the range of nesting opportunities throughout the sites.

7.0 REFERENCES

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Please note that the legislation which is relevant to this report is not included in the list above, but details are included in Appendix B below.

FIGURES

Figure 1 – Site Location Plan

Figure 2 – Phase 1 Habitat Plan – Site A

Figure 3 – Phase 1 Habitat Plan – Site B

Figure 4 – Phase 1 Habitat Plan – Site C

Site Location Plan

CLEATOR MOOR INNOVATION QUARTER

Copeland Borough Council

Legend

Site boundary

Expansion B

Main Site

Expansion C

Notes:

Drawn by: CL
Checked by: GP
Office: Southampton

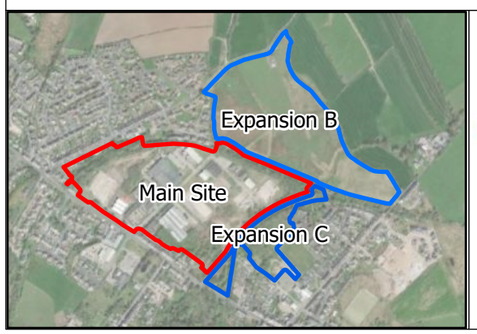
Figure No. 1
Revision No. A

0 70 140 210 Meters

Scale 1:5,000 @A3

21 October 2021

NGR: 301752E 515602N



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Phase 1 Habitat Plan Site A

Cleator Moor Innovation Quarter

Copeland Borough Council

- Site boundary
- Area not accessed: Phase 1 Habitat types allocated by viewing aerial photos and streetview images
- Bare ground
- Buildings
- A — Amenity grassland
- Hardstanding
- Other habitat
- SI — Neutral grassland - semi-improved
- Neutral grassland - unimproved
- Marsh/marshy grassland
- Broad-leaved plantation woodland
- Broad-leaved semi-natural woodland
- Mixed semi-natural woodland
- Scrub - dense/continuous
- Tall ruderal
- Fence
- Wall
- Standing water in wheel ruts
- Target note

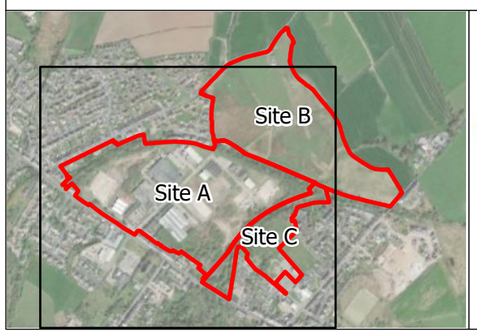
Notes:

Drawn by: CL
Checked by: EW
Office: Southampton

Figure No. 2
Revision No. A

0 40 80 120 Meters
Scale 1:3,000 @A3

05 November 2021
NGR: 301603E 515488N



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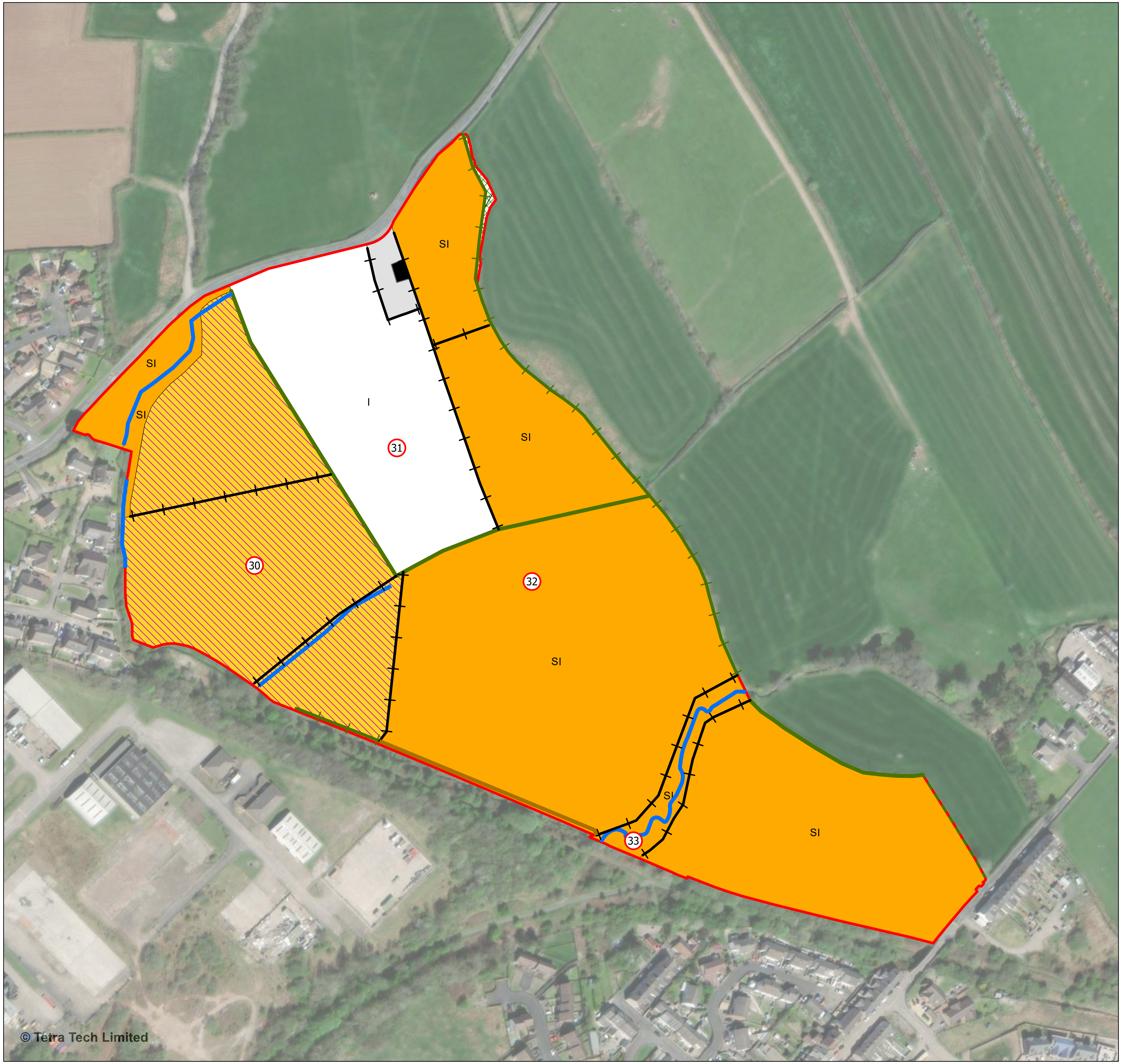
Maxar, Microsoft



Phase 1 Habitat Plan
Expansion B

Cleator Moor Innovation Quarter

Copeland Borough Council

- Site boundary
- Scrub - dense/continuous
- SI Neutral grassland - semi-improved
- I Improved grassland
- Marsh/marshy grassland
- Buildings
- Hardstanding
- Defunct hedge - native species-poor
- Intact hedge - native species-poor
- Line of trees
- Running Water
- Fence
- Wall
- Target note

Note: Site B was not access during the walkover survey. The Phase 1 Habitat types depicted on this map were allocated by viewing the aerial photos and viewing the site B from the accessible boundaries

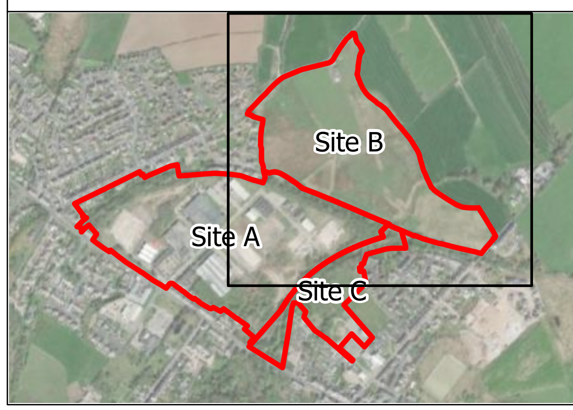
Notes:

Drawn by: CL
Checked by: PG
Office: Southampton

Figure No. 3
Revision No. A

0 30 60 90 Meters
Scale 1:2,500 @A3

04 November 2021
NGR: 301969E 515766N



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Maxar, Microsoft

Phase 1 Habitat Plan Site C

Cleator Moor Innovation Quarter

Copeland Borough Council

- Site boundary
- Bare ground
- Hardstanding
- SI — Neutral grassland - semi-improved
- Neutral grassland - unimproved
- Broad-leaved plantation woodland
- Broad-leaved semi-natural woodland
- Mixed semi-natural woodland
- Scrub - dense/continuous
- Tall ruderal
- Fence
- Scattered scrub - broad-leaved
- Scattered tree - broad-leaved
- Target note

Rf = Bramble
Sx = Willow carr

Notes:

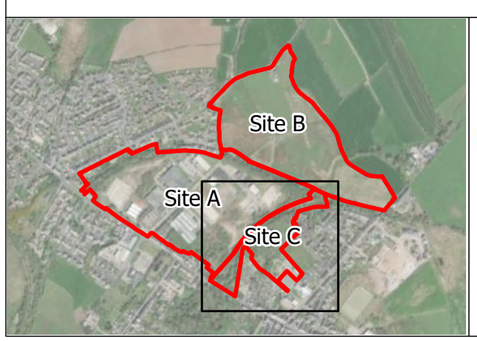
Drawn by: CL
Checked by: EW
Office: Southampton

Figure No. 4
Revision No. A

0 20 40 60 Meters
Scale 1:1,500 @A3

05 November 2021

NGR: 301844E 515372N



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APPENDIX A – REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B – KEY LEGISLATION

Bern Convention
The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention, and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals. To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directive* (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.
Bonn Convention
The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II. In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985 (as amended), Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).
Habitats Directive
The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes. In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales, and via the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland.
Birds Directive
The EC Directive on the Conservation of Wild Birds (791409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.
Conservation of Habitats and Species Regulations 2017 (as amended)
Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by Ministers, are then designated as Special Protection Areas (SPAs) within six years. Public bodies must also help preserve, maintain and re-establish habitats for wild birds. The 2018 amendments mainly related to the impact of the *People Over Wind* decision and some implications arising for neighbourhood plan development and a range of other planning tools including Local Development Orders and Permission in Principle – see here for full details: https://www.legislation.gov.uk/uksi/2018/1307/note/made The Regulations make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 - see below:

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plants
Horseshoe bats *Rhinolophidae* - all species	Shore dock *Rumex rupestris*
Common bats *Vespertilionidae* - all species	Killarney fern *Trichomanes speciosum*
Large Blue Butterfly *Maculinea arion*	Early gentian *Gentianella anglica*
Wild cat *Felis sylvestris*	Lady's-slipper *Cypripedium calceolus*
Dolphins, porpoises and whales *Cetacea* – all sp.	Creeping marsh-wort *Apium repens*
Dormouse *Muscardinus avellanarius*	Slender naiad *Najas flexilis*
Pool frog *Rana lessonae*	Fen orchid *Liparis loeselii*
Sand lizard *Lacerta agilis*	Floating-leaved water plantain *Luronium natans*
Fisher's estuarine moth *Gortyna borelii lunata*	Yellow marsh saxifrage *Saxifraga hirculus*
Great crested newt *Triturus cristatus*	
Otter *Lutra lutra*	
Lesser whirlpool ram's-horn snail *Anisus vorticulus*	
Smooth snake *Coronella austriaca*	
Sturgeon *Acipenser sturio*	
Natterjack toad *Epidalea calamita*	
Marine turtles *Caretta caretta, Chelonia mydas, Lepidochelys kempii, Eretmochelys imbricata, Dermochelys coriacea*	

Wildlife & Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the 'Bern Convention' and the Birds Directive are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use; or
- take or destroy an egg of any wild bird.

Or to intentionally do the following to a wild bird listed in Schedule 1:

- disturbs any wild bird while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places; and
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to: intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant; unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; or sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9.

It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

Schedule 1 - Birds which are protected by special penalties			
Avocet	*Recurvirostra avosetta*	Osprey	*Pandion haliaetus*
Bee-eater	*Merops apiaster*	Owl, Barn	*Tyto alba*
Bittern	*Botaurus stellaris*	Owl, Snowy	*Nyctea scandiaca*
Bittern, Little	*Ixobrychus minutus*	Peregrine	*Falco peregrinus*
Bluethroat	*Luscinia svecica*	Petrel, Leach's	*Oceanodroma leucorhoa*
Brambling	*Fringilla montifringilla*	Phalarope, Red-necked	*Phalaropus lobatus*
Bunting, Cirl	*Emberiza cirlus*	Plover, Kentish	*Charadrius alexandrinus*
Bunting, Lapland	*Calcarius lapponicus*	Plover, Little Ringed	*Charadrius dubius*
Bunting, Snow	*Plectrophenax nivalis*	Quail, Common	*Coturnix coturnix*
Buzzard, Honey	*Pernis apivorus*	Redstart, Black	*Phoenicurus ochruros*
Capercaillie	*Tetrao urogallus*	Redwing	*Turdus iliacus*
Chough	*Pyrrhocorax pyrrhocorax*	Rosefinch, Scarlet	*Carpodacus erythrinus*
Corncrake	*Crex crex*	Ruff	*Philomachus pugnax*
Crake, Spotted	*Porzana porzana*	Sandpiper, Green	*Tringa ochropus*
Crossbills (all species)	*Loxia*	Sandpiper, Purple	*Calidris maritima*
Curlew, Stone	*Burhinus oedicnemus*	Sandpiper, Wood	*Tringa glareola*
Divers (all species)	*Gavia*	Scaup	*Aythya marila*
Dotterel	*Charadrius morinellus*	Scoter, Common	*Melanitta nigra*
Duck, Long-tailed	*Clangula hyemalis*	Scoter, Velvet	*Melanitta fusca*
Eagle, Golden	*Aquila chrysaetos*	Serin	*Serinus serinus*
Eagle, White-tailed	*Haliaetus albicilla*	Shorelark	*Eremophila alpestris*
Falcon, Gyr	*Falco rusticolus*	Shrike, Red-backed	*Lanius collurio*
Fieldfare	*Turdus pilaris*	Spoonbill	*Platalea leucorodia*
Firecrest	*Regulus ignicapillus*	Stilt, Black-winged	*Himantopus himantopus*
Garganey	*Anas querquedula*	Stint, Temminck's	*Calidris temminckii*
Godwit, Black-tailed	*Limosa limosa*	Swan, Bewick's	*Cygnus bewickii*
Goshawk	*Accipiter gentilis*	Swan, Whooper	*Cygnus cygnus*
Grebe, Black-necked	*Podiceps nigricollis*	Tern, Black	*Chlidonias niger*
Grebe, Slavonian	*Podiceps auritus*	Tern, Little	*Sterna albifrons*
Greenshank	*Tringa nebularia*	Tern, Roseate	*Sterna dougallii*
Gull, Little	*Larus minutus*	Tit, Bearded	*Panurus biarmicus*
Gull, Mediterranean	*Larus melanocephalus*	Tit, Crested	*Parus cristatus*
Harriers (all species)	*Circus*	Tree-creeper, Short-toed	*Certhia brachydactyla*
Heron, Purple	*Ardea purpurea*	Warbler, Cetti's	*Cettia cetti*
Hobby	*Falco subbuteo*	Warbler, Dartford	*Sylvia undata*
Hoopoe	*Upupa epops*	Warbler, Marsh	*Acrocephalus palustris*
Kingfisher	*Alcedo atthis*	Warbler, Savi's	*Locustella luscinioides*
Kite, Red	*Milvus milvus*	Whimbrel	*Numenius phaeopus*
Merlin	*Falco columbarius*	Woodlark	*Lullula arborea*
Oriole, Golden	*Oriolus oriolus*	Wryneck	*Jynx torquilla*
Animal (Vertebrate) Species Listed in Schedule 5 (full legal protection at all times)			
Horseshoe Bats (all species)	*Rhinolophidae*	Newt – Great Crested	*Triturus cristatus*
Typical Bats (all species)	*Vespertilionidae*	Snake – Smooth	*Coronella austriaca*
Dolphin – Bottle-nosed	*Tursiops truncatus (tursio)*	Toad, Natterjack	*Epidalea calamita*
Dolphin – Common	*Delphinus delphis*	Turtles – All Species	*Cheloniidae & Dermochelyidae*
Dormouse – Hazel	*Muscardinus avellanarius*	Basking Shark	*Cetorhinus maximus*
Pine Marten	*Martes martes*	Burbot	*Lota lota*
Porpoise – Harbour	*Phocaena phocaena*	Goby – Giant	*Gobius cobitis*
Otter – Eurasian	*Lutra lutra*	Goby – Couch's	*Gobius couchii*
Squirrel – Red	*Sciurus vulgaris*	Seahorse – Short-snouted[2]	*Hippocampus hippocampus*
Walrus	*Odobenus rosmarus*	Seahorse – Spiny	*Hippocampus guttulatus*
Water Vole	*Arvicola amphibius*	Sturgeon	*Acipenser sturio*
Whales – All Species	*Cetacea*	Vendace	*Coregonus albula*

[2] Both sea horse species are protected in England only.

Wildcat	*Felis sylvestris*	Whitefish	*Coregonus lavaretus*
Lizard – Sand	*Lacerta agilis*		
Animal (Vertebrate) Species Protected under Section 9 (1) part: Killing and Injuring & Section 9 (5) Sale			
Adder	*Vipera berus*	Slow-worm	*Anguis fragilis*
Lizard – Viviparous	*Zootoca vivipara*	Snake – Grass	*Natrix helvetica (natrix)*
Animals (Vertebrate) Species Protected under Section 9 (5) Sale only			
Frog – common	*Rana temporaria*	Newt – Smooth	*Lissotriton vulgaris*
Newt – Palmate	*Lissotriton helvetica*	Toad – Common	*Bufo bufo*
Animals (Vertebrate) Species Protected under Section 9 (1) (4)(a): Killing, Injuring & Taking and Damage / Destruction of place of shelter / protection only			
Allis Shad	*Alosa alosa*	Shark – Angel	*Squatina squatina*
Twaite Shad	*Alosa fallax*		
Butterflies & Moths – Full Protection under Schedule 5[3] at all times			
High brown fritillary	*Argynnis adippe*	Fisher's Estuarine Moth	*Gortyna borelii*
Large Blue	*Maculinea arion*	Barberry Carpet	*Pareulype berberata*
Heath Fritillary	*Mellicta athalea*	Black-veined Moth	*Siona lineata*
Marsh Fritillary	*Eurodryas aurinia*	Sussex Emerald	*Thalera fimbrialis*
Swallowtail	*Papilio machaon britannicus*	Essex Emerald	*Thetidia smaragdaris*
Large Copper	*Lycaena dispar*	Fiery Clearwing	*Bembecia chrysidiformis*
Reddish-buff Moth	*Acosmetia caliginosa*	New-Forest Burnet	*Zygaena viciae*
Butterflies – Protected under Section 9 (5) Sale Only			
Purple Emperor	*Apatura iris*	Adonis Blue	*Lysandra bellargus*
Northern Brown Argus	*Aricia artaxerxes*	Chalkhill Blue	*Lysandra coridon*
Pearl-bordered Fritillary	*Boloria euphrosyne*	Glanville Fritillary	*Melitaea cinxia*
Chequered Skipper	*Carterocephalus palaemon*	Large Tortoiseshell	*Nymphalis polychloros*
Large Heath	*Coenonympha tullia*	Silver-studded Blue	*Plebejus argus*
Small Blue	*Cupido minimus*	Black Hairstreak	*Strymonidia pruni*
Mountain Ringlet	*Erebia epiphron*	White-letter Hairstreak	*Strymonidia w-album*
Duke of Burgundy	*Hamearis lucina*	Brown Hairstreak	*Thecla betulae*
Silver-spotted Skipper	*Hesperia comma*	Lulworth Skipper	*Thymelicus acteon*
Wood White	*Leptidea sinapis*		
Other Invertebrates – Full Protection under Schedule 5 at all times			
Rainbow Leaf-beetle	*Chrysolina cerealis*	Tadpole Shrimp	*Triops cancriformis*
Spangled Diving-beetle	*Graphopterus zonatus*	Trembling Sea-mat	*Victorella pavida*
Lesser Silver Water-beetle	*Hydrochara caraboides*	De Folin's Lagoon Snail	*Caecum armoricum*
Moccas Beetle	*Hypebaeus flavipes*	Sandbowl Snail	*Catinella arenaria*
Violet Click-beetle	*Limoniscus violaceus*	Freshwater Pearl Mussel	*Margaritifera margaritifera*
Bembridge Beetle	*Parcymus aeneus*	Glutinous Snail	*Myxas glutinosa*
New Forest Cicada	*Cicadetta montana*	Lagoon Snail	*Paludinella littorina*
Wart-Biter	*Decticus verrucivorus*	Lagoon Sea Slug	*Tenellia adspersa*
Mole-Cricket	*Gryllotalpa gryllotalpa*	Northern Hatchet-shell	*Thyasira gouldi*
Field-Cricket	*Gryllus campestris*	Tentacled Lagoon-worm	*Alkmaria romijni*
Norfolk Hawker Dragonfly	*Aeshna isosceles*	Lagoon Sand-worm	*Armandia cirrhosa*
Southern Damselfly	*Coenagrion mercuriale*	Medicinal Leech	*Hirudo medicinalis*
Fen Raft Spider	*Dolomedes fimbriatus*	Marine Hydroid	*Clavopsella navis*
Ladybird Spider	*Eresus niger (cinaberinus)*	Ivell's Sea Anemone	*Edwardsia ivelli*
Fairy Shrimp	*Chirocephalus diaphanus*	Starlet Sea Anemone	*Nematosella vectensis*
Lagoon Sand Shrimp	*Gammarus insensibilis*	Atlantic Stream (White-clawed) Crayfish	*Austropotamobius pallipes*
Other Invertebrates Protected under Section 9 (1) Possession & 9 (2) (5) Sale only			
Stag Beetle	*Lucanus cervus*	Roman Snail[4]	*Helix pomatia*

[3] Viper's Bugloss Moth *Hadena irregularis* was removed from Schedule 5 in 1996 as it is believed to be extinct.

[4] England only

Fan Mussel	*Atrina fragilis*	Pink Sea-fan	*Eunicella verrucosa*
Other Invertebrates Protected under Section 9 (4) (a) Damage / Destruction of Place of Shelter / Protection only			
Mire Pill Beetle	*Curimopsis nigrita*		
Vascular Plant Species - Full Protection under Schedule 8 at all times (previous Scientific name in brackets)			
Adder's-tongue Least	*Ophioglossum lusitanicum*	Lily – Snowdon	*Gagea serotina (Lloydia serotina)*
Alison- Small	*Alyssum alyssoides*	Marsh-mallow – Rough	*Malva setigera (Althaea hirsuta)*
Broomrape – Bedstraw	*Orobanche caryophyllacea*	Milk-parsley – Cambridge	*Selinum carvifolia*
Broomrape – Oxtongue	*Orobanche picridis*	Mudwort – Welsh	*Limosella aquatica*
Broomrape – Thistle	*Orobanche reticulata*[5]	Naiad – Holly-leaved	*Najas marina*
Cabbage – Lundy	*Coincya wrightii (Rhynchosinapis wrightii)*	Orache – Stalked	*Atriplex pedunculata (Halimione pedunculata)*
Calamint – Wood	*Clinopodium menthifolium (Calamintha sylvatica)*	Orchid – Early Spider	*Ophrys sphegodes*
Catchfly – Alpine	*Silene suecica (Lychnis alpina)*	Orchid – Ghost	*Epipogium aphyllum*
Centaury – Slender	*Centaurium tenuiflorum*	Orchid – Lapland Marsh	*Dactylorhiza lapponica*
Cinquefoil – Rock	*Potentilla rupestris*	Orchid – Late Spider	*Ophrys fuciflora*
Clary – Meadow	*Salvia pratensis*	Orchid – Lizard	*Himantoglossum hircinum*
Club-rush – Triangular	*Schoenoplectus triqueter (Scirpus triqueter)*	Orchid – Military	*Orchis militaris*
Colt's-foot – Purple	*Homogyne alpina*	Orchid – Monkey	*Orchis simia*
Cotoneaster – Wild	*Cotoneaster cambricus (C. integerrimus)*	Pear – Plymouth	*Pyrus cordata*
Cotton-grass – Slender	*Eriophorum gracile*	Pennycress – Perfoliate	*Microthlaspi perfoliatum (Thlaspi perfoliatum)*
Cow-wheat – Field	*Melampyrum arvense*	Pennyroyal	*Mentha pulegium*
Crocus – Sand	*Romulus columnae*	Pigmyweed	*Crassula aquatica*
Cudweed – Broad-leaved	*Filago pyramidata*	Pine - Ground	*Ajuga chamaepitys*
Cudweed – Jersey	*Gnaphalium luteoalbum*	Pink – Cheddar	*Dianthus gratianopolitanus*
Cudweed – Red-tipped	*Filago lutescens*	Pink – Childing	*Petrorhagia nanteuilii*
Cut-grass	*Leersia oryzoides*	Ragwort – Fen	*Jacobaea paludosa (Senecio paludosa)*
Deptford Pink	*Dianthus armeria*	Ramping-fumitory – Martin's	*Fumaria reuteri (F. martinii)*
Diapensia	*Diapensia lapponica*	Rampion – Spiked	*Phyteuma spicata*
Eryngo – Field	*Eryngium campestre*	Restharrow – Small	*Ononis reclinata*
Fern – Dickie's-bladder	*Cystopteris dickieana*	Rock-cress – Alpine	*Arabis alpina*
Fleabane – Alpine	*Erigeron borealis*	Rock-cress – Bristol	*Arabis scabra*
Fleabane – Small	*Pulicaria vulgaris*	Sandwort – Norwegian	*Arenaria norvegica*[6]
Galingale – Brown	*Cyperus fuscus*	Sandwort – Teesdale	*Minuartia stricta*
Gentian – Alpine	*Gentiana nivalis*	Saxifrage – Drooping	*Saxifraga cernua*
Gentian - Dune	*Gentianella amarella subsp. occidentalis (Gentianella uliginosa)*	Saxifrage – Tufted	*Saxifraga cespitosa*
Gentian – Fringed	*Gentianopsis ciliata (Gentianella ciliata)*	Solomon's-seal – Whorled	*Polygonatum verticillatum*
Gentian - Spring	*Gentiana verna*	Sow-thistle – Alpine	*Cicerbita alpina*
Germander – Cut-leaved	*Teucrium botrys*	Spearwort – Adder's-tongue	*Ranunculus ophioglossifolius*
Germander – Water	*Teucrium scordium*	Speedwell – Fingered	*Veronica triphyllos*

[5] The Weeds Act 1959 does not apply to thistles *Cirsium* & *Carduus* species supporting this broomrape.

[6] All subspecies occurring in the UK

Gladiolus – Wild	*Gladiolus illyricus*	Speedwell – Spiked	*Veronica spicata*[7]
Goosefoot – Stinking	*Chenopodium vulvaria*	Spike-rush – Dwarf	*Eleocharis parvula*
Grass-poly	*Lythrum hyssopifolia*	South-stack Fleawort	*Tephroseris integrifolia ssp. maritima*
Hare's-ear – Sickle-leaved	*Bupleurum falcatum*	Star-of-Bethlehem – Early	*Gagea bohemica*
Hare's-ear – Small	*Bupleurum baldense*	Starfruit	*Damasonium alisma*
Hawk's-beard – Stinking	*Crepis foetida*	Strapwort	*Corrigiola littoralis*
Hawkweed – Northroe	*Hieracium northroense*	Violet – Fen	*Viola persicifolia*
Hawkweed – Shetland	*Hieracium zetlandicum*	Viper's-grass	*Scorzonera humilis*
Hawkweed – Weak-leaved	*Hieracium attenuatifolium*	Water-plantain – Ribbon-leaved	*Alisma gramineum*
Heath – Blue	*Phyllodoce caerulea*	Wood-sedge – Starved	*Carex depauperata*
Helleborine – Red	*Cephalanthera rubra*	Woodsia – Alpine	*Woodsia alpina*
Horsetail – Branched	*Equisetum ramosissimum*	Woodsia – Oblong	*Woodsia ilvensis*
Hound's-tongue – Green	*Cynoglossum germanicum*	Wormwood – Field	*Artemisia campestris*
Knawel – Perennial	*Scleranthus perennis*[8]	Woundwort - Downy	*Stachys germanica*
Knot-grass – Sea	*Polygonum maritimum*	Woundwort – Limestone	*Stachys alpina*
Leek – Round-headed	*Allium sphaerocephalon*	Yellow-rattle – Greater	*Rhinanthus angustifolius*
Lettuce – Least	*Lactuca saligna*		
Vascular Plant Species – Partial Protection under Section 13 (2) Protection from commercial exploitation and sale			
Bluebell	*Hyacinthoides non-scripta*		
Bryophytes – Full Protection under Schedule 8 at all times			
Anamodon – Long-leaved	*Anomodon langifolius*	Flamingo Moss	*Desmatodon cernuus*
Blackwort	*Southbya nigrella*	Frostwort	*Gymnomitrion apiculatum*
Crystalwort – Lizard	*Riccia bifurca*	Glaucous Beard Moss	*Barbula glauca*
Earwort – Marsh	*Jamesoniella undulifolia*	Green Shield Moss	*Buxbaumia viridis*
Feathermoss – Polar	*Hygrohypnum polare*	Hair Silk Moss	*Plagiothecium piliferum*
Flapwort – Norfolk	*Leiocolea rutheana*	Knothole Moss	*Zygodon forsteri*
Grimmia – Blunt-leaved	*Grimmia unicolor*	Large Yellow Feather Moss	*Scorpidium turgescens*
Petalwort	*Petalophyllum ralfsii*	Millimetre Moss	*Micromitrium tenerum*
Lindenberg's Leafy-Liverwort	*Adelanthus lindenbergianus*	Multi-fruited River Moss	*Cryphaea lamyana*
Feather-moss Slender Green	*Drepanocladus vernicosus*	Nowell's Limestone Moss	*Zygodon gracilis*
Alpine Copper-Moss	*Mielichoferia meilicoferia*	Rigid Apple Moss	*Bartramia stricta*
Baltic Bog-Moss	*Sphagnum balticum*	Round-leaved feather Moss	*Rhynchostegium rotundifolium*
Blue Dew-Moss	*Saelania glaucescens*	Schleicher's Thread Moss	*Bryum schleicheri*
Blunt-leaved bristle-Moss	*Orthotrichum obtusifolium*	Triangular Pygmy Moss	*Acaulon triquetrum*
Bright-Green Cave-Moss	*Cyclodictyon laetevirens*	Turpswort	*Geocalyx graveolens*
Cordate Beard Moss	*Barbula cordata*	Vaucher's Feather Moss	*Hypnum vaucheri*
Cornish Path Moss	*Ditrichum cornubicum*	Western Rustwort	*Marsupella profunda*
Derbyshire Feather Moss	*Thamnobryum angustifolium*		
Stoneworts – Full Protection under Schedule 8 at all times			
Bearded Stonewort	*Chara canescens*	Foxtail Stonewort	*Lamprothamnium papullosum*

[7] Both subspecies: *spicata* & *hybrida*

[8] Includes both subspecies: *perennis* & *prostratus*

Lichens – Full Protection under Schedule 8 at all times			
New Forest Beech Lichen	*Enterographa elaborata*	Forked Hair Lichen	*Bryoria furcellata*
Snow Caloplaca	*Caloplaca nivalis*	Golden Hair Lichen	*Teloschistes flavicans*
Tree Catapyrenium	*Catapyrenium psoromoides*	Orange-fruited Elm Lichen	*Caloplaca luteoalba*
Laurer's Catillaria	*Catillaria laurei*	River Jelly Lichen	*Collema dichotomum*
Convoluted Cladonia	*Cladonia convoluta*	Starry Breck Lichen	*Buellia asterella*
Upright Mountain Cladonia	*Cladonia stricta*	Caledonia Pannaria	*Pannaria ignobilis*
Goblin Lights	*Catolechia wahlenbergii*	New Forest Parmelia	*Parmelia minarum*
Elm Gyalecta	*Gyalecta ulmi*	Oil Stain Parmentaria	*Parmentaria chilensis*
Tarn Lecanora	*Lecanora archariana*	Southern Grey Physcia	*Physcia tribacioides*
Copper Lecidea	*Lecidea inops*	Ragged Pseudo-cyphellaria	*Pseudocyphellaria lacerata*
Arctic Kidney Lichen	*Nephroma arcticum*	Rusty Alpine Psora	*Psora rubiformis*
Ciliate Strap Lichen	*Heterodermia leucomelos*	Rock Nail	*Calicium corynellum*
Coralloid Rosette Lichen	*Heterodermia propagulifera*	Serpentine Selanopsora	*Selanopsora liparina*
Ear-lobed Dog Lichen	*Peltigera lepidophora*	Sulphur Tresses	*Alectoria ochroleuca*
Lichens – Partial Protection under Section 13 (2) Commercial Exploitation and Sale Only			
Tree Lungwort	*Lobaria pulmonaria*		
Fungi – Full Protection under Schedule 8 at all times			
Royal Bolete	*Boletus regius*	Oak Polypore	*Buglossosporus pulvinus*
Hedgehog Fungus	*Hericium erinaceum*	Sandy Stilt Ball	*Battaria phalloides*
Invasive plant species listed in Schedule 9			
Alexanders, Perfoliate	*Smyrnium perfoliatum*	Kelp, Japanese	*Laminaria japonica*
Algae, Red	*Grateloupia luxurians*	Knotweed, Giant	*Reynoutria (Fallopia) sachalinensis*
Archangel, Variegated Yellow	*Lamiastrum galeobdolon subsp. argentatum*	Knotweed, Hybrid	*Reynoutria (Fallopia) japonica x sachalinensis*
Azalea, Yellow	*Rhododendron luteum*	Knotweed, Japanese	*Reynoutria (Fallopia) japonica*
Balsam, Himalayan	*Impatiens glandulifera*	Leek, Few-flowered	*Allium paradoxum*
Cotoneaster, Wall	*Cotoneaster horizontalis*	Lettuce, water	*Pistia stratiotes*
Cotoneaster, Entire-leaved	*Cotoneaster integrifolius*	Montbretia	*Crocosmia x crocosmiiflora*
Cotoneaster, Himalayan	*Cotoneaster simonsii*	Parrot's Feather	*Myriophyllum aquaticum*
Cotoneaster, Hollyberry	*Cotoneaster bullatus*	Pennywort, Floating	*Hydrocotyle ranunculoides*
Cotoneaster, Small-leaved	*Cotoneaster microphyllus*	Potato, Duck	*Sagittaria latifolia*
Creeper, False Virginia	*Parthenocissus inserta*	Primrose, Floating Water	*Ludwigia peploides*
Creeper, Virginia	*Parthenocissus quinquefolia*	Primrose, Water	*Ludwigia grandiflora*
Dewplant, Purple	*Disphyma crassifolium*	Primrose, Water	*Ludwigia uruguayensis*
False-acacia	*Robinia pseudoacacia*	Rhododendron	*Rhododendron ponticum* and hybrid *R. ponticum x R. maximum*
Fanwort/Carolina Water-Shield	*Cabomba caroliniana*	Rhubarb, Giant	*Gunnera tinctoria*
Fern, Water	*Azolla filiculoides*	Rose, Japanese	*Rosa rugosa*
Fig, Hottentot	*Carpobrotus edulis*	Salvinia, Giant	*Salvinia molesta*
Garlic, Three-cornered	*Allium triquetrum*	Seafingers, Green	*Codium fragile*
Hogweed, Giant	*Heracleum mantegazzianum*	Seaweed, Californian Red	*Pikea californica*

Hyacinth, Water	*Eichhornia crassipes*	Seaweed, Hooked Asparagus	*Asparagopsis armata*
Kelp, Giant species	*Macrocystis angustifolia, M. integrifolia, M. laevis, M. pyrifera*	Seaweed, Japanese	*Sargassum muticum*
Seaweeds, Laver	*Porphyra spp* except except native species, P. *amethystea, P. leucosticte, P. linearis, P. miniate, P. purpurea, P. umbilicalis*	Wakame	*Undaria pinnatifida*
Shallon	*Gaultheria shallon*	Waterweed, Curly	*Lagarosiphon major*
Stonecrop, Australian Swamp/New Zealand Pygmyweed	*Crassula helmsii*	Waterweeds	All species of the genus *Elodea*

Protection of Badgers Act 1992

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: “any structure or place which displays signs indicating current use by a badger”

Natural Environment and Rural Communities Act 2006

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of Habitats and Species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 Habitats of Principal Importance and 1,150 Species of Principal Importance.

Hedgerow Regulations 1997

The Hedgerow Regulations were made under Section 97 of the Environment Act 1995 and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

Birds of Conservation Concern

This is a review of the status of all birds occurring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2015 (Eaton *et al*, 2015) and identified 67 red list species, 96 amber species, and 81 green species. The criteria are complex, but generally:

- **Red list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.
- **Amber list** species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localised in 10 sites or fewer and those whose 20% of the European population is found in the UK.

- **Green list** species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed

Global IUCN Red List

The International Union for Conservation of Nature (IUCN) Threatened Species was devised to provide a list of those species that are most at risk of becoming extinct globally. It provides taxonomic, conservation status and distribution information about threatened taxa around the globe.

The system catalogues threatened species into groups of varying levels of threat, which are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CE), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD), Not Evaluated (NE). Criteria for designation into each of the categories is complex, and consider several principles.

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision making process.

Wild Mammals (Protection) Act 1996

This Act offers protects a form of protection to all wild species of mammals, irrespective of other legislation, and focussed on animal welfare, rather than conservation.

Unless covered by one of the exceptions, a person is guilty of an offence if he mutilates, kicks, beats, nails or otherwise impales, stabs, burns, stones, crushes, drowns, drags or asphyxiates any wild mammal with intent to inflict unnecessary suffering.

It's application is typically restricted to preventing deliberate harm to wildlife (in general) during construction works etc.

APPENDIX C – CMIQ MASTERPLAN

PLOT A6

BOC YARD

PLOT A8

PLOT A2

PLOT A1:
Proposed: Hub Building,

PLOT A3

PLOT A4

PLOT B1

PLOT B2

PLOT BE
ENERGY
CENTRE
(TBC)

PLOT B3

PLOT B4

PLOT B5

PLOT B6

PLOT B7

PLOT C1

PLOT C2

SITE A

SITE B

SITE C

APPENDIX D – TARGET NOTES

Target Note	Description	Photograph
1	NY 01903 15525 Broadleaved woodland – semi natural. Mixture of older and younger trees; trees with PRFs likely to be present. Alnus glutinosa F Angelica sylvestris O Betula pendula O Crataegus monogyna F Corylus avellana O Dryopteris dilatata F Filipendula ulmaria O Fraxinus excelsior F Juncus effusus O Populus tremula O Quercus sp. O Rosa canina R Rubus fruticosus agg. F Salix sp. O Sambucus nigra O	
2	NY 01903 15548 Marshy grassland/ swamp area within the woodland with Juncus effusus and Carex, acutiformis.	

3	NY 01866 15512 Mosaic of marshy grassland and secondary unimproved neutral grassland. Angelica sylvestris O Arrhenatherum elatius F Centaurea nigra A Ranunculus repens F Cynosurus cristatus O Daucus carota ssp. carota R Filipendula ulmaria F Heracleum sphondylium O Juncus effusus F Festuca rubra O Plantago lanceolata O Holcus lanatus F	
4	NY 01809 15459 Broadleaved woodland along the site boundary. Species composition similar to the TN 1.	
5	NY 01791 15476 An area of tall ruderal grassland with scattered trees and scrub. Abundant *Centaurea nigra* and frequent *Rubus fructicosus* agg.	

6	NY 01815 15572 Unimproved neutral grassland with patches of gravel and ephemeral vegetation; 60% grassland cover. Achillea millefolium O Agrostis capillaris F Dactylis glomerata F Centaurea nigra F Cynosurus cristatus O Bellis perennis R Festuca rubra F Holcus lanatus O Vicia sepium R	
7	NY 01744 15435 Dense scrub with stands of tall ruderal vegetation. Chamerion angustifolium F Crataegus monogyna O Epilobium sp. F Rubus fruticosus agg. A Salix sp. O Ulex europaeus O	
8	NY 01719 15483 Young willow / alder carr with marshy grassland understory vegetation.	

9	NY 01733 15393 Marsh/ marshy grassland with sections of gravel/ bare ground / ephemeral vegetation. Stands of shallow ephemeral water after heavy rain period. Grassland cover – approx. 50%. Agrostis capillaris F Dactylis glomerata O Centaurea nigra O Daucus carota ssp. carota O	
10	NY 01671 15375 Willow / alder carr with some scattered semi-mature trees. Waterlogged ground with some open areas with bare ground / gravel and standing water / ephemeral pools. Some marshy grassland, swamp and mire-type vegetation present within the understorey. Agrostis capillaris F Alnus glutinosa F Betula pendula F Carex sp. O Fraxinus excelsior A Juncus effusus F Juncus inflexus F Mentha sp. R Polygonum aviculare O Prunus spinosa F Rubus fruticosus agg. F Salix sp. F Sphagnum sp. O Cotoneaster sp. has been recorded within this area as part of INNS surveys.	 

11	NY 01843 15535 Fenced off yard.	
12	NY 01775 15509 Fenced off tip. Cotoneaster sp. has been noted within this area – see INNS Management plan.	
13	NY 01647 15313 Fence – site boundary with a residential grassland / scattered trees to the south.	

14	NY0154915385 Fenced-off block of broadleaved woodland south of the site – no access to this area. Willow / alder carr – wet woodland. Looking down / north from the bund south of the site. Species composition and structure similar to TN 11. An area of Japanese knotweed *Fallopia japonica* can be found on the south west boundary of this area. Similarly, Montbretia Crososmia can be found in close proximity to the aforementioned Japanese knotweed.	 
15	NY0151615440 Scrub with scattered trees Acer pseudoplatanus R Crataegus monogyna O Hedera helix F Prunus sp. R Rubus fruticosus agg. D	

16	NY0163815529 Secondary marsh/marshy grassland with scattered scrub. Secondary marsh/marshy grassland with scattered scrub. Cirsium palustre A Juncus conglomeratus A Juncus inflexus A Lotus pedunculatus A Cynosurus cristatus F Dactylorhiza fuchsii F Equisetum arvense F Leucanthemum vulgare F Potentilla reptans F Salix cinerea F Listera ovata F Dactylorhiza purpurella F Angelica sylvestris O Betula pubescens O Carex sp. O Epilobium parviflorum O Ranunculus acris O Rumex acetosa O Centaurea nigra R Deschampsia cespitosa R Filipendula ulmaria R Galium palustre R Holcus lanatus R	
17	NY0169515525 Hardstanding with patches of ephemeral vegetation. Patches of cotoneaster sp. has been recorded within this area – see INNS management plan.	

18	NY 01608 15564 An area of semi-improved grassland. Hollyberry cotoneaster *Cotoneaster bullatus* can be found on the border between TN 18 and 16.	
19	NY0164615651 Amenity grassland; regularly mowed, 90% cover. Dominant / abundant species included Lolium perenne and Bellis perennis.	
20	NY 01687 15656 An area of plantation broadleaved woodland.	

21	NY0158115638 Car park – industrial yard.	
22	NY0141315619 Marsh/ marshy grassland with sections of hard standing / ephemeral vegetation and scattered scrub. Stand of shallow standing water after heavy rain period. Grassland cover – approx. 70%. Agrostis capillaris A Dactylis glomerata O Centaurea nigra F Ranunculus repens O Cynosurus cristatus O Daucus carota ssp. carota F Lotus corniculatus R Festuca rubra F Plantago lanceolata O Salix sp. R Trifolium pratense R Holcus lanatus F Vicia sepium R Montbretia crocosmia is present within this area.	
23	NY 01510 15664 A secondary area of unimproved neutral grassland. Cirsium palustre A Juncus conglomeratus A Juncus inflexus A Lotus pedunculatus A Cynosurus cristatus F Dactylorhiza fuchsii F Dactylorhiza purpurella F Equisetum arvense F Hypericum maculatum F Leucanthemum vulgare F Listera ovata F Myosotis laxa F Potentilla reptans F Salix cinerea F Silene flos-cuculi F	

	Alopecurus pratensis O Angelica sylvestris O Betula pubescens O Carex otrubae O Cerastium fontanum O Epilobium parviflorum O Jacobaea vulgaris O Potentilla anserina O Ranunculus acris O Rumex acetosa O Valeriana officinalis O Agrostis stolonifera R Centaurea nigra R Cirsium arvense R Deschampsia cespitosa R Filipendula ulmaria R Galium palustre R Holcus lanatus R Iris pseudacorus R Lotus corniculatus R Lysimachia arvensis R Prunella vulgaris R Ranunculus flammula R Rumex crispus R Stachys palustris R Trifolium repens R Veronica chamaedrys R Vicia cracca R Vicia sativa R	

24	NY0144215581 An area of scrub comprising of *Salix sp. and Alnus glutinosa,* with further smaller areas of swamp dominated by *Phalaris arundinacea*. Presence of *Cotoneaster sp.*	 
25	NY0137615574 Hard standing with fly-tipping. A record of cotoneaster sp. has been recorded on the boundary between TN 24 & 25 – see INNS management plan. Further Montbretia Crocosmia can be found within the area.	

26	NY0130015563 Mosaic of marshy grassland and ruderal vegetation with some scattered scrub. 50% grassland cover. Alnus glutinosa O Chamerion angustifolium F Cirsium arvense F Corylus avellana O Deschampsia cespitosa O Epilobium sp. A Filipendula ulmaria O Juncus effusus O Juncus inflexus F Rubus fruticosus agg. A	
27	NY0129415584 Mixed semi-natural woodland block with mixture of older and younger trees. Older trees appeared to have multiple RFs for bats. Dominant Rubus ruticosus agg within the understorey. Alnus glutinosa A Fraxinus excelsior A Larix sp. R Malus sylvestris R Pinus sp. F Populus tremula F Rosa sp. R Rubus fruticosus agg. D Salix sp. A Sambucus nigra R Parts of this area which parallel TN28 have Himalayan balsam *Impatiens glandulifera*.	
28	NY0127715522 Dense scrub with scattered trees and ruderal vegetation. Acer pseudoplatanus O Alnus glutinosa O Buddleja davidii O Chamerion angustifolium O Crataegus monogyna O Hedera helix F Rubus fruticosus agg. D Urtica dioica F	

29	NY0138615452 Semi-improved neutral grassland on the embankment; 90% cover; short / regularly mowed. Retaining wall to the south next to Leconfield Rd. *Dactylis glomerata* F *Centaurea nigra* O *Cerastium fontanum* F *Ranunculus repens* R *Cirsium arvense* O *Bellis perennis* F *Taraxacum* agg. O *Lolium perenne* A *Jacobaea vulgaris* R *Festuca rubra* A *Plantago lanceolata* O *Trifolium repens* F *Holcus lanatus* F	
30	NY 01763 15743 An area of marsh/ marshy grassland. Not accessed during the walkover survey.	
31	NY 01858 15822 An area of improved grassland. Not access during the walkover survey	

32	NY 01949 15732 A large area consisting of semi-improved neutral grassland. Not accessed during the walkover survey	
33	NY 02018 15558 An area of running water / Norr Beck running through Site B and along the north of Site A.	

34	NY 01716 15328 Broadleaved woodland – semi-natural similar in composition to TN1. Japanese knotweed noted within this area.	
35	NY 01716 15328 Mixed semi-natural broadleaved woodland similar in composition to TN27. Japanese knotweed found within this area.	
36	NY 01737 15312 Dense/ continuous bramble scrub.	

37	NY 01792 15397 An area of broad-leaved semi-natural woodland potentially similar to TN20.	
38	NY 01821 15334 An area of neutral grassland with scattered scrub. Achillea millefolium O Agrostis sp. F Alopecurus pratensis F Carex sp. O Centaurea nigra O Festuca rubra A Heracleum sphondylium O Leucanthemum vulgare R Plantago lanceolata O Alchemilla mollis R	
39	NY 01858 15398 An area of semi-improved neutral grassland Arrhenatherum elatius O Centaurea nigra F Cynosurus cristatus O Juncus effusus F Ranunculus repens F Trifolium pratense O Trifolium repens O	

40	NY 01865 15297 An area of tall ruderal vegetation. Japanese knotweed found within this area.	
41	NY 01764 15342 Land designated as allotments, with presence of INNS accessed by bare ground tracks.	

APPENDIX E – LIST OF ECOLOGY REPORTS PRODUCED BY TETRA TECH FOR THE CMIQ SITE

The below list includes detailed ecology reports that were produced by Tetra Tech in 2021 for the CMIQ site. This Ecological Appraisal should be view in conjunction with the below reports which are provided as separate documents.

- Tetra Tech (2021). Cleator Moor Innovation Quarter: Bat Roost Assessment Report.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: Biodiversity Net Gain (BNG) Assessment.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: Breeding Bird Survey Report.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: Great Crested Newt Report.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: Report to Inform Habitats Regulations Assessment (HRA) – Stage 1 Assessment of Likely Significant Effects and Stage 2 Appropriate Assessment.
- Tatra Tech (2021). Cleator Moor Innovation Quarter: Invasive Non-Native Species Management Plan.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: Invertebrate Report.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: National Vegetation Classification Report.
- Tetra Tech (2021). Cleator Moor Innovation Quarter: Reptile Survey Report.