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Bromley Farm Quarry

Preliminary Ecological Appraisal

Prepared for Wavin UK Ltd

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EXECUTIVE SUMMARY

Wavin UK Ltd is seeking planning permission for an 8.4 hectare easterly extension to the former Bromley Farm, Quarry, Upper Cumberworth.

Bromley Farm Quarry ceased working mineral in 2015 and has since been restored by the importation of inert waste. This was fully completed in early 2022.

RDF Ecology were appointed to undertake a desktop study, extended phase I habitat and protected species walkover survey and report on the findings.

The site comprises arable agricultural land with some areas of grassland and ruderal vegetation.

Assessment Summary

Survey Item	Conclusions
Designated Sites	No impacts upon designated sites are predicted and no further survey and assessment work are recommended.
Habitats	The habitats within the site have no intrinsic botanical value and the loss of the area of improved agricultural grassland would have negligible ecological effects and therefore no compensation or mitigation measures are proposed and no further survey or assessment work is recommended with regard to their botanical value.
Bats—Buildings and Structures	There are no buildings within the site. No impacts upon roosting bats in buildings are predicted and no further survey or assessment work is recommended
Bats—Trees and Habitats	There are no large trees with potential roost features to be removed or directly affected by the proposed development and no commuting routes would be disrupted. No significant impacts upon commuting or feeding bats or upon bats roosting in trees are predicted and no further survey and assessment work is recommended
Badger	No evidence of badger activity was recorded and no impacts upon badgers are predicted and no further survey or assessment work is recommended.
Otter	The site does not contain any habitats of potential value to otters, no evidence of otter activity was recorded during the field survey. No impacts upon otters are predicted and no further survey or assessment work for otters is recommended
Water Vole	The site does not contain any habitats of potential value to water vole, no evidence of water vole activity was recorded during the field survey. No impacts upon water vole are predicted and no further survey or assessment work for water vole is recommended
Breeding Birds	No significant impacts upon nesting birds are predicted and no further ornithological survey work is recommended
Amphibians	No impacts upon amphibians are predicted and no further survey work is recommended
Reptiles	No impacts upon reptiles are predicted and no further survey work is recommended
Recommendations	
Breeding Birds	That removal of trees, shrubs and surface vegetation should be completed outside of the bird breeding season (March to September inclusive). Where this is not possible a suitably qualified and experienced ecologist should complete a survey of the site immediately prior to completion of the proposed works to search for nesting birds and to advise on exclusion zones or timing of works if nesting birds are recorded

1. INTRODUCTION

1.1. Project Background

- 1.1.1. Wavin UK Ltd is seeking planning permission for an 8.4 hectare easterly extension to the former Bromley Farm, Quarry, Upper Cumberworth (hereafter referred to as 'the site') whose location and extent is shown in Figure 1.

1.2. Ecological Background

- 1.2.1. Bromley Farm Quarry ceased working mineral in 2015 and has since been restored by the importation of inert waste. This was fully completed in early 2022.
- 1.2.2. **RDF** Ecology completed a preliminary ecological appraisal in 2012 for the previous quarry activities and whilst the results of this work are now out of date, they did not identify any significant ecological issues to be assessed.

1.3. Project Brief and Objectives

- 1.3.1. **RDF** Ecology has been appointed to undertake a desktop study, extended phase I habitat and protected species walkover survey and report on the findings.
- 1.3.2. The objectives of the commission were to:
- To complete a desk-top study to review any existing information regarding protected or notable species and designated sites within a 2 kilometre (km) radius of the site, extended to 10 km for International and European conservation sites including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites;
 - To undertake an extended phase 1 habitat and protected species walkover survey to describe and map the habitats on the site and to identify the presence or potential presence of any protected or notable species;
 - To identify and assess potential ecological constraints to the proposed development;
 - To prepare a preliminary ecological appraisal report
 - To provide recommendations for further ecological surveys where necessary; and,
 - Recommend appropriate mitigation measures to enable compliance with wildlife legislation, offset potential negative ecological effects and enhance biodiversity where possible.

- 1.3.3. This report describes the findings of the desktop study and field survey work, considers the potential impacts arising from the proposed development and proposes appropriate mitigation measures.

2. THE DEVELOPMENT PROPOSALS

- 2.1. The site is to be worked for fireclay and shale for the manufacture of vitrified clay pipes. Incidental coal will also be extracted from the site.
- 2.2. The site will be worked from west to east in five approximately 30 metre wide cuts at base. Please refer to the site layout plan, Ref 14028/100. The area within the red line boundary is approximately 8.4 Hectares which includes the overburden storage area, settlement lagoon and the access road.
- 2.3. All soils required for restoration would be stripped and stored around the northern and eastern boundaries to act as a visual and acoustic barrier and would remain in-situ until required for restoration of the site. Overburden storage would be required as shown on the proposed layout plan. These storage areas would be located on the lowest parts of the site to the south to reduce the potential visual impact.
- 2.4. The quarry would be worked to an average depth of approximately 15 metres. It is not proposed to have any fixed plant operational in the workings as all extractive product would be taken from the working area to the processing works at Crow Edge for clay pipe manufacture.
- 2.5. The extraction of clay is not a continuous operation and is usually removed between April and September on a campaign basis to provide sufficient material to maintain the stockpiles for the year ahead.
- 2.6. A high level restoration will be achieved through the importation of inert waste to raise levels as with the adjacent restored quarry to create areas of agricultural grassland (3.75ha), native shrub planting (1.12ha) and areas of species rich grassland (1.84ha).
- 2.7. A more detailed description of the works is included in the Planning Statement prepared by Silkstone Environmental Ltd and has been referenced in preparing this preliminary ecological appraisal (PEA). The restoration proposals are set out in the restoration and aftercare report prepared by CB Land Consultancy Ltd.

3. SURVEY METHODOLOGY

3.1. Desktop Study

- 3.1.1. A desk study was carried out in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Preliminary Ecological Appraisal' (2017). Records of any protected or notable species, habitats and designated nature conservation sites within a 2 km radius of the site were obtained and reviewed. This radius was extended to 10km for International and European conservation sites including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites.
- 3.1.2. The following organisations were contacted for protected sites and species data:
 - West Yorkshire Ecology (WYE)
- 3.1.3. Additional information on sites and species of nature conservation interest was obtained from:
 - Multi Agency Geographic Information for the Countryside (MAGIC) website;
 - Natural England web site and online SSSI database;

3.2. Field Survey

- 3.2.1. The extended phase I habitat study area covered the whole site and extended 50m beyond the site boundary where access was possible.

3.2.1. Extended Phase I Habitat Survey Methodology

- 3.2.1.1. An extended phase 1 habitat survey of the site was completed on 14 July 2022. All habitats within the site were surveyed.
- 3.2.1.2. Habitats present on the site were classified and mapped according to the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat survey methodology (JNCC, 2010).
- 3.2.1.3. A phase 1 habitat survey provides sufficient information on the composition of the vegetation present to enable it to be characterised and assessed.
- 3.2.1.4. Fauna and flora present at the time of survey were recorded and the site was assessed for its potential to support notable and/or protected species that could be impacted by development following CIEEM guidance (CIEEM, 2017 and 2018).
- 3.2.1.5. Target notes were prepared for any features of ecological interest and their locations noted in Figure 3. Plant species were recorded following the

nomenclature in Stace (1997) and lists of species are included in Appendix 1.

3.3. Protected Species

3.3.1. Badger

- 3.3.1.1. Areas of suitable habitat on site and within 50m of the site boundary (where accessible) were searched for evidence of badger with reference to the methodology defined in Harris et al. (1991). The following field signs were recorded, if encountered, during the protected species walkover survey:
- Setts;
 - Latrines;
 - Prints and paths or trackways;
 - Hairs caught on rough wood or fencing; and
 - Other evidence including snuffle holes, feeding remains and scratching posts.
- 3.3.1.2. Where setts were recorded, their status and level of activity was noted. Sett status is broadly categorised as follows:
- Main: generally the largest sett within a badger clan's territory, with a relatively large number of sett entrances with well-worn pathways between them, and conspicuous spoil mounds. This type of sett will be occupied throughout the year and used for breeding;
 - Annexe: normally found within 150m of the main sett comprising many entrances, this type of sett may not be occupied throughout the year, and can be used for breeding if there is more than one breeding sow within the clan;
 - Subsidiary: similar to an annexe sett, but typically located further from the main sett. This type of sett will not be occupied throughout the year and lacks the well-worn paths associated with main and annexe setts; and
 - Outlier: consisting of one or two entrances, this type of sett will be found furthest from the main sett and will only be used sporadically throughout the year.
- 3.3.1.3. The suitability of the existing habitats on site, as badger breeding and foraging habitat, was assessed.

3.3.2. Otter

- 3.3.2.1. Areas of suitable habitat on site and within 50m of the site boundary (where accessible) were searched for evidence of otter (*Lutra lutra*). The following field signs were recorded, if encountered, during the protected species walkover survey:
- Sightings of Otters
 - Otter Holts
 - Otter footprints
 - Otter spraints
 - Otter slides
- 3.3.2.2. The suitability of the existing habitats on site, as otter breeding and foraging habitat, was assessed.

3.3.3. Water Vole

- 3.3.3.1. Areas of suitable habitat on site and within 50m of the site boundary (where accessible) were searched for evidence of water vole (*Arvicola amphibius*). The following field signs were recorded, if encountered, during the protected species walkover survey:
- Sightings of Water Voles
 - Water Vole tunnel entrances
 - Water Vole "lawns"
 - Water Vole feeding stations
 - Water Vole latrines
 - Waterside paths
 - Runs in vegetation
 - Water Vole footprints
 - Sounds of Water Voles 'plopping' into the water
- 3.3.3.2. The suitability of the existing habitats on site, as water vole breeding and foraging habitat, was assessed.

3.3.4. Bats

- 3.3.4.1. Whilst completing the extended phase I habitat survey a preliminary bat roost assessment was undertaken in accordance with best practice guidelines (Collins 2016 and Hundt, 2012).

Tree Assessment

- 3.3.4.2. Trees within or immediately adjacent to the site were assessed for their potential to support roosting bats in accordance with best practice guidelines (Collins 2016 and Hundt, 2012). The trees were examined from the ground using binoculars and a high-powered torch where appropriate to look for any potential roost features (PRF's) such as natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, thick stemmed ivy growth, hollows/cavities and within dense epicormic growths. The trees

were classified according to the criteria detailed in Table 1 below, based upon the visible PRF's identified during the ground levels survey. For extensive areas of woodland, where all trees could not be fully checked the woodland as a whole, was assessed for its potential for roosting bats based upon the overall age and character of the trees present.

Table 1—Criteria for bat roost potential assessment of trees (based on Collins 2016 and Hundt, 2012)

Tree Category	Description
Confirmed	Tree with features confirmed to be used by roosting bats either by historic records (verified appropriately), or evidence recorded during survey.
High	Tree with many suitable PRF's capable of supporting larger roosts. The tree is located within habitat that is connected to wider landscape by strong linear features that may be used by commuting bats e.g. river valley, streams and hedgerows.
Moderate	Tree with definite bat roost potential but with fewer larger PRF's or several PRF's with the potential to be used by individual/small numbers of bats. Surrounding area includes good quality foraging habitat for bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland; or tree with highly suitable features though its context is less optimal.
Low	Tree with less PRF's capable of supporting only individual/small numbers of bats within a suboptimal location; tree in suitable habitat and of a size and age that elevated surveys are considered likely to result in cracks or crevices being found; or tree with definite bat roost potential which is isolated and within low quality foraging habitat meaning that the presence of a roost is considered less likely.
Negligible	Tree with no visible PRF's, or very few or minor features in an isolated/unsuitable location such that the presence of a roost is considered highly improbable e.g. isolated from suitable foraging or commuting habitats.

Buildings Assessment

3.3.4.3. There are no buildings with the site boundary.

Habitat Assessment

3.3.4.4. Habitat within and adjacent to the site boundary was assessed for its suitability for commuting and feeding bats in accordance with current guidance (Table 4.1 in Collins, 2016) with habitats categorised as having negligible, low, moderate or high suitability for commuting and feeding bats and are summarised in Table 2 below:

Table 2— Criteria for habitat suitability assessments (based on interpretation of Collins 2016 and Hundt, 2012)

Habitat Suitability	Description
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, stream, 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.

Habitat Suitability	Description
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.
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 setting) or a patch of scrub.
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.

3.3.5. Wild Birds

- 3.3.5.1. Habitat within and adjacent to the site boundary was assessed for its suitability for nesting birds. Bird species seen or heard during the survey were recorded.

3.3.6. Amphibians

Habitat Suitability Index Assessment

- 3.3.6.1. All accessible water bodies within 500m of the site, which are not separated from the site by significant barriers to amphibian movement, were assessed for their suitability as aquatic habitat for Great Crested Newts (*Triturus cristatus*) (GCN) using the criteria in the HSI assessment method developed by Oldham et al (2000) and modified further by the Amphibian and Reptile Groups of the United Kingdom (ARG 2010).

3.3.7. Reptiles

- 3.3.7.1. Any casual observations of reptiles within the site were recorded and the habitats within the site were assessed for their potential value for reptiles.

3.4. Limitation of Field Survey

- 3.4.1. The extended phase 1 habitat survey was undertaken on 14 July 2022 within the period generally considered to be the optimal vegetation survey period (i.e. April to September). Given the timings of the survey and the nature of the modified habitats recorded on site it is considered that no limitations are present in the assessment of the site for protected/notable species and habitats. However, an extended phase 1 habitat survey does not comprise a full botanical assessment of all species present within a site; therefore species lists are indicative only.
- 3.4.2. The baseline conditions described in this report are accurate at the time at which the survey was undertaken. Should a considerable time pass (e.g. more than 2 years) and/or conditions/land-use on the site change prior to

the commencement of works, it is recommended that an up-date survey is undertaken.

4. DESKTOP STUDY RESULTS

4.1. Introduction

- 4.1.1. The desk study results are summarised below and include a review of data provided by West Yorkshire Ecology (WYE) in December 2022.
- 4.1.2. Data older than 10 years is considered to be less important than more recent data due to the length of time that has elapsed since being collected (and the chance that they are no longer valid for a current assessment) and these have therefore been excluded from the protected species summary unless the historical records are the sole record for that particular species.

4.2. Designated Sites

- 4.2.1. Nature Conservation designations within 2km of the site are shown in Figure 2.

4.2.1. Statutory Designated Sites

- 4.2.1.1. The site is not covered by any statutory nature conservation designations and there are no sites covered by statutory nature conservation designations within 2km of the site boundary
- 4.2.1.2. The site is not covered by any statutory nature conservation designations. However there are two sites covered by European Designations within 10km of the site boundary and these are summarised in Table 3 below.

Table 3—Statutory Designations within 2km of the site

Site Name	Designation	Distance from Site at Nearest Point
Statutory Designations within 2km		
None		
European Designations within 10km		
South Pennine Moors	SAC	8.5km
Peak District Moors (South Pennine Moors Phase 1)	SPA	8.5km
Key SAC = Special Area of Conservation SPA = Special Protection Area		

4.2.2. Non-Statutory Designated Sites

- 4.2.2.1. This is the new term for locally designated sites being adopted across West Yorkshire. Districts are currently going through a process of merging old, designated nature conservation sites (SEGI, SSI, Bradford Wildlife Areas (BWA), Leeds Nature Areas (LNA), Kirklees Sites of Wildlife Significance (SWS) and Wakefield Nature Areas (WNA)) into a single Local Wildlife Site

(LWS) designation. Sites should be given the same protection as SEGIs/SSIs as set out in UDPs/LDFs.

- 4.2.2.2. SEGI are an old system of designated sites which are gradually being reviewed and reassessed against new LWS selection criteria and where they qualify will be replaced by LWS designation.
- 4.2.2.3. The site is not covered by any non-statutory nature conservation designations. However the desktop study data indicates notes that there are five Local wildlife Sites (LWS) within 2km of the site boundary and these are summarised in Table 4 below.

Table 4—Non-Statutory Designations within 2km of the site

Site Name	Designation	Distance from Site at nearest point
Turpin Hill	LWS	220m S
Lower Jane Well	LWS	880m W
Denby Delf	LWS	1.1km S
Yew Tree Wood	LWS	1.3km NW
Hob Royd Shrogg and Miry Greaves Shrogg	LWS	1.8km NE

4.2.3. West Yorkshire Wildlife Habitat Network

- 4.2.3.1. West Yorkshire Ecology have identified the extent of the Kirklees Yorkshire Wildlife Habitat Network (KWHN) which connects designated sites of biodiversity and geological importance and notable habitat links within the district, such as woodlands, watercourses, natural and semi-natural areas. The identification of the Wildlife Habitat Network (WHN) is intended to protect and strengthen ecological links within the district.
- 4.2.3.2. The purpose of the network is to enable species populations to be sustained by protecting and enhancing the ecological corridors and linkages within the wider environment, including links to adjoining districts. Development within the WHN will not necessarily be prevented but the council will seek to ensure that development proposals maintain the continuity of the network and protect the nature conservation of the land affected.
- 4.2.3.3. The site is not located within an area identified in the KWHN. However the area of broadleaved woodland adjacent to the south east site boundary is included within the KWHN. The location and extent of the KWHN in the vicinity of the site is shown in Figure 2

4.2.4. West Yorkshire Bat Alert Zone

- 4.2.4.1. The West Yorkshire Bat Alert Zone has been identified by WYE and identifies areas within 200m of significant water or woodland, features which are good bat feeding habitat.

- 4.2.4.2. The site falls within an area identified within the West Yorkshire Bat Alert zone due to its proximity to the area of broadleaved woodland along the south eastern site boundary and as a consequence of the pond that was present with the base of the previous quarry site and which has now been lost. The location and extent of the bat alert zone in the vicinity of the site is shown in Figure 2.

4.3. Protected Species

4.3.1. Bats

- 4.3.1.1. WYE provided 66 records for bats within 2km of the site boundary and these are summarised in table 5 below;

Table 5—Summary of Bat Records Provided by WYE

Species	Number of Records
Unidentified Bats	9
Brown Long-eared Bat (<i>Plecotus auritus</i>)	4
Noctule Bat (<i>Nyctalus noctula</i>)	8
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	35
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	5
Unidentified Pipistrelle Bat species (<i>Pipistrellus</i> sp.)	2
Whiskered Bat (<i>Myotis mystacinus</i>)	3
Total	66

- 4.3.1.2. There were no bat records for the site or within 250m of the site boundary. The closest records were from Upper Cumberworth to the west of the site access road and included a record of a common pipistrelle maternity roost dating from 2003 and from a location approximately 450m south west of the site access road
- 4.3.1.3. The majority of the remaining records were from the residential areas at Denby Dale south east of the site boundary and Birds Edge to the south west of the site boundary.

4.3.2. Badgers

- 4.3.2.1. WYE have recently changed the way they display badger records in data searches due to the sensitivity of the records. They have created a 'zone' showing the increased probability of badger activity in an area. They have done this by taking badger records and putting a buffer of 837m (the square root of the average badger territory from Badger (Michael Clark) Whittet Books – 70ha) around each record. This then shows a zone of the increased probability of badger activity across West Yorkshire. If there are badger records within 200m of the site centroid/boundary, a more detailed

confidential badger report showing the badger records will be mapped and a spreadsheet with details of each record will be provided. If there are no sett records within 200m, we will supply the distance to the nearest known sett record if within the 2km. The records do not contain the grid reference but do include a calculated distance from the site centroid/boundary.

4.3.2.2. This increased probability zone information is to be used to help ecological consultants justify the need for full badger surveys. We would expect them to:

- a) See if the site falls within the “likely probability of badger activity” zone.
- b) Assess the habitat as part of the Preliminary Ecological Assessment.
- c) Use the 200m buffer detailed record information to try to locate all known setts.
- d) Recommend a more detailed survey if required.
- e) Undertake a full badger survey if required, assess ha

4.3.2.3. WYE have identified that the site lies with an area of increased probability of badger activity, however they do not have any records of badger activity within 200m of the site boundary and the closest recorded known sett is more than 1.4km from the site boundary.

4.3.3. Otters

4.3.3.1. Data provided by WYE did not include any records of otter (*Lutra lutra*) within 2km of the site boundary.

4.3.4. Water Vole

4.3.4.1. WYE provided 5 records for water vole (*Arvicola amphibius*) dating from 2003 to 2019. The latter record was from a location approximately 1.9km south west the site boundary. The closest records were from a pond in Green Wood approximately 500m south of the site boundary and dated from 2011 and 2013.

4.3.5. Wild Birds

4.3.5.1. WYE provided 144 records of 53 species of bird within 2km of the site boundary. There were no records for the site itself and only four records were within 500m of the site boundary and comprised single records of goldfinch (*Carduelis carduelis*), grey heron (*Ardea cinerea*), woodpigeon (*Columba palumbus*) and yellowhammer (*Emberiza citrinella*).

4.3.5.2. The majority of the records (86 records) were from the areas of woodland to the south of the site and a further 41 records were from the countryside around Birds Edge more than 1.5km from the site boundary.

- 4.3.5.3. The data included a recent (2020) record for barn owl (*Tyto alba*) but this was more than 700m from the site boundary.

4.3.6. Amphibians

- 4.3.6.1. The data from WYE included 31 records of four species of amphibian and these are summarised in table 6 below.

Table 6—Summary of Amphibian Records with 2km of the Site Boundary

Species	Number of Records	Closest Record to Site Boundary
Common Frog (<i>Rana temporaria</i>)	8	400m N
Common Toad (<i>Bufo bufo</i>)	6	400m N
Great Crested Newt (<i>Triturus cristatus</i>)	13	1.3km N
Smooth Newt (<i>Lissotriton vulgaris</i>)	4	1.2kmN
Total	31	

- 4.3.6.2. The great crested new records are from a population centred around Shelley college along with a single record from 2000 to the east Denby Dale more than 1.7km from the site boundary.

4.3.7. Reptiles

- 4.3.7.1. WYE provided 2 records for grass snake (*Natrix helvetica*) dating from 2014 and a location approximately 450m north of the site boundary.

4.3.8. Non-Native Invasive Species

- 4.3.8.1. WYE provided data for four non-native invasive species (NNIS) including Himalayan balsam (*Impatiens glandulifera*), Japanese knotweed (*Fallopia japonica*), Parrot's-feather (*Myriophyllum aquaticum*) and New Zealand Pygmyweed (*Crassula helmsii*).
- 4.3.8.2. None of these species were recorded within the site boundary or within 500m of the site boundary. Most were associated with the River Dear to the south of the site and in particular where it passes through Denby Dale

5. SURVEY RESULTS

5.1. Introduction

- 5.1.1. The results of the extended phase 1 habitat and protected species walkover surveys are presented below. Figure 3 illustrates the location and extent of all habitat types recorded on site, with notable features or features too small to map highlighted using Target Notes (TN). A list of species recorded on the site is included in Appendix 1.

5.2. Habitat Descriptions

- 5.2.1. The following Phase 1 habitat types (JNCC codes in parenthesis) were recorded on site during the field survey:

- Broadleaved Plantation Woodland (A1.1.2);
- Dense Scrub (A2.1);
- Semi-improved Neutral Grassland (B2.2);
- Improved Grassland (B4);
- Tall Ruderal and Semi-improved Grassland Mosaic (C3.1/B2.2
- Arable (J1.1);
- Species Poor Hedgerow with Trees (J2.3.2); and,
- Dry Stone Wall (J2.5)

5.2.1. Broadleaved Plantation Woodland (A1.1.2)

- 5.2.1.1. Along the western site boundary with Cumberworth Lane are a number of areas of plantation woodland (**TN9**). Tree species here included silver birch (*Betula pendula*), alder (*Alnus glutinosa*), hazel (*Corylus avellana*), goat willow (*Salix caprea*), pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*), field maple (*Acer campestre*) and hawthorn (*Crataegus monogyna*). The ground vegetation comprises a range of coarse grasses including false oat-grass (*Arrhenatherum elatius*) cock's-foot (*Dactylus glomerata*), common couch (*Elytrigia repens*) and Yorkshire fog (*Holcus lanatus*) with some developing bramble (*Rubus fruticosus* agg.) underscrub.

5.2.2. Dense Scrub (A2.1)

- 5.2.2.1. A small area of scrub and trees is present in the south of the site (**TN6**) with an area of tall ruderal and coarse grassland vegetation (**TN5**).
- 5.2.2.2. Species included pedunculate oak, ash and hawthorn with dense bramble underscrub and stands of common nettle (*Urtica dioica*) and creeping thistle (*Cirsium arvense*). Also present were a range of coarse grasses including false oat-grass, cock's-foot, common couch and Yorkshire fog.

5.2.3. Semi-improved Neutral Grassland (B2.2)

- 5.2.3.1. A small area of semi-improved grassland has been established on the site of a former spoil mound (**TN2**) and supported a range of common species including perennial rye-grass (*Lolium perenne*), red fescue (*Festuca rubra*), common bent (*Agrostis capillaris*), sweet vernal-grass (*Anthoxanthum odoratum*) and crested dog's-tail (*Cynosurus cristatus*) along with common mouse-ear (*Cerastium fontanum*), ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum officinale* agg.), common sorrel (*Rumex acetosa*), white clover (*Trifolium repens*) and red clover (*Trifolium pratense*) and less frequent germander speedwell (*Veronica chamaedrys*).

5.2.4. Improved Grassland (B4)

- 5.2.4.1. The proposed access for the quarry extension passes through an area of former quarry which has been restored to improved agricultural grassland where the sward is dominated by perennial rye-grass, common bent and red fescue with some white clover and common sorrel.

5.2.5. Tall Ruderal and Semi-improved Grassland Mosaic (C3.1/B2.)

- 5.2.5.1. on the southern portion of the site is an area of abandoned arable land (**TN6**) which has become overgrown and comprises a mix of coarse tussocky grassland and ruderal vegetation. Species here included false oat-grass, cock's-foot, common couch, and Yorkshire fog with less frequent common bent and red fescue and damper hollows contained creeping bent (*Agrostis stolonifera*). Ruderal and robust perennial species are at moderate to high abundance and included extensive stands of common nettle along with creeping thistle, broad-leaved dock (*Rumex obtusifolius*), ragwort (*Senecio vulgaris*), hogweed (*Heracleum sphondylium*) and localised stands of rosebay willowherb (*Chamerion angustifolium*).
- 5.2.5.2. Less frequently encountered species included ribwort plantain, white dead-nettle (*Lamium album*), red dead-nettle (*Lamium purpureum*), creeping buttercup, dandelion, red and white clover.
- 5.2.5.3. Young ash and hawthorn sapling were frequent in the vegetation.
- 5.2.5.4. A smaller of similar vegetation was present along the southern boundary of the former topsoil mound (**TN11**).

5.2.6. Arable (J1.1)

- 5.2.6.1. The majority of the site comprises arable agricultural land which supports a limited range of common agricultural weed species including groundsel (*Senecio vulgaris*), pineappleweed (*Matricaria discoidea*), common poppy (*Papaver rhoeas*), knotgrass (*Polygonum aviculare* agg.), common chickweed (*Stellaria media*) and annual meadow-grass (*Poa annua*).

5.2.7. Species Poor Hedgerow with Trees (J2.3.2)

- 5.2.7.1. A tall hedgerow with some trees runs along the southern site boundary adjacent to a small ditch (**TN4**) and has developed from an outgrown hedgerow. Canopy species included pedunculate oak, goat willow, mature hawthorn, and field maple and occasional elder (*Sambucus nigra*).
- 5.2.7.2. The ground vegetation comprises coarse grasses including false oat-grass, cock's-foot and Yorkshire fog and stands of common nettle with some developing bramble scrub and occasional bramble underscrub.

5.2.8. Dry Stone Wall (J2.5)

- 5.2.8.1. Along the site boundary and dividing the areas of arable a land were small derelict sections of dry stone walls (**TN1, TN7 and TN8**) which supported a small number of hawthorn and field maple saplings with false oat-grass, cock's-foot, Yorkshire fog and common couch and ruderal species including mugwort (*Artemisia vulgaris*), creeping thistle, and broad-leaved dock.

5.3. Protected Species

5.3.1. Bats

Trees

- 5.3.1.1. The site does not contain any large trees with potential value to roosting bats.
- 5.3.1.2. There are a small number of semi-mature ash (TN12) that are located in hedgerow H1. These were inspected from the ground and no potential roost features were identified and the trees were assessed to have negligible potential value for roosting bats.

Buildings

- 5.3.1.3. The site does not contain any buildings or other structure of potential value to roosting bats.

Habitats

- 5.3.1.4. The site comprises an area of open arable agricultural land at 230m AOD which is open and exposed. The area around **TN2** and **TN6** is more enclosed and provides some sheltered foraging habitat for bats.
- 5.3.1.5. Beyond the site are extensive areas of improved agricultural grassland with few or fragments hedgerows being mostly defined by dry stone walls.
- 5.3.1.6. There are small areas of woodland to the north beyond Cumberworth Lane and these connect with large areas of woodland around Yew Tree Wood LWS via the wooded banks of the disused railway line.
- 5.3.1.7. Large areas of woodland are also present to the south of the A635 at Green Wood and Munchcliffe Wood
- 5.3.1.8. There are areas of residential development contain older properties to the west at Upper Cumberworth and the south at Denby Dale.

5.3.2. Badgers

- 5.3.2.1. No badger setts were recorded within or immediately adjacent to site.
- 5.3.2.2. No evidence of badger foraging activity was recorded during the field survey.

5.3.3. Otters

- 5.3.3.1. The site does not contain any habitats of potential value to otter (*Lutra lutra*), no evidence of otter activity was recorded during the field survey.

5.3.4. Water Vole

- 5.3.4.1. The site does not contain any habitats of potential value to water vole (*Arvicola amphibius*), no evidence of water vole activity was recorded during the field survey.

5.3.5. Wild Birds

- 5.3.5.1. During the field survey a number of birds were recorded and these were predominantly from the hedgerows along the southern site boundary and included Wren (*Troglodytes troglodytes*), robin (*Erithacus rubecula*), blackbird (*Turdus merula*), blue tit (*Cyanistes caeruleus*), Greenfinch (*Carduelis chloris*), goldfinch (*Carduelis carduelis*), magpie (*Pica pica*), woodpigeon (*Columba palumbus*) and willow warbler (*Phylloscopus trochilus*). A single skylark (*Alauda arvensis*) was recorded singing high over the small area of grassland at **TN6**.

5.3.6. Amphibians

- 5.3.6.1. The site does not contain any ponds suitable for breeding amphibians including great crested newts (*Triturus cristatus*) and no amphibians were recorded during the field survey.
- 5.3.6.2. Examination of OS maps and satellite imagery indicates that there are two ponds located within 500m of the site boundary that are connected to the site by areas of suitable terrestrial habitat and these are shown in Figure 3.
- 5.3.6.3. Pond 1 was examined in 2012 and assessed to have low value for GCN. The pond was examined again in 2022 and the HSI score is set out in table 7 below and indicates that the pond still remains of low potential value to GCN.

Table 7—HSI Score for Pond 1

Habitat Suitability Index factors	HSI Score	0.46
	Pond Suitability	Poor
Location	1	Optimal
Pond Area	1	750m ²
Pond Drying	0.9	Never dries
Water quality	0.33	Poor due to pumping of quarry water into pond on a regular basis
Shade	1	Shoreline shade <10%
Waterfowl	0.67	Present but little indication of impact
Fish	0.01	Large population of Sticklebacks
Ponds	0.65	3 ponds within 1km
Terrestrial Habitat	0.67	Moderate
Macrophytes	0.5	20% cover

- 5.3.6.4. The major limiting factor regarding the potential value of the pond for Great Crested Newts was the large population of Sticklebacks that was noted during the field survey.
- 5.3.6.5. Pond 2 is located outside the site boundary and access was not possible. However the pond was subject to eDNA surveys for the nearby Bromley Quarry in 2019 (Wardell Armstrong 2019) and this indicated that GCN was absent.

5.3.7. Reptiles

- 5.3.7.1. No reptiles were recorded during the field survey. However a number of collapsed dry stone walls exist with the site which provide potential shelter and foraging habitat for reptiles. Other habitats of potential value to reptiles present on site included areas of neutral grasslands and ruderal vegetation.

5.3.8. Non-Native Invasive Species

- 5.3.8.1. No non-native invasive species, or plant species listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the site during the survey.

6. PLANNING POLICY CONTEXT

6.1. National Planning Policy

- 6.1.1. The National Planning Policy Framework (NPPF 2021) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF sets out the Government's national principles and policies for England on the protection of biodiversity and geological conservation through the planning system.
- 6.1.2. At the heart of the NPPF is a clear *"presumption in favour of sustainable development"* (Para 11).
- 6.1.3. The UK's Sustainable Development Strategy "Securing the Future" sets out 5 guiding principles of sustainable development:
- living within the planet's environmental limits;
 - ensuring a strong, healthy and just society;
 - achieving a sustainable economy;
 - promoting good governance; and
 - using sound science responsibly.
- 6.1.4. Section 15 (paragraph 174) of the NPPF sets out how the planning system should contribute to sustainable development by conserving and enhancing the natural environment through:
- protecting and enhancing valued landscapes, geological conservation interests and soils;
 - recognising the intrinsic character and beauty of the countryside and the wider benefits from natural capital and ecosystem services;
 - maintaining the character of the undeveloped coast;
 - minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
 - preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
 - remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

- 6.1.5. Paragraph 179 refers to protecting and enhancing biodiversity and geodiversity, stating that plans should:
- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
 - Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
- 6.1.6. Paragraph 180 states that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:
- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have 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;
 - development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
 - opportunities to incorporate biodiversity in and around developments should be encouraged;
 - and, planning permission should be refused 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.

- Paragraph 181 outlines that the following wildlife sites should be given the same protection as European sites:
 - » potential Special Protection Areas and possible Special Areas of Conservation;
 - » listed or proposed Ramsar sites; and
 - » sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.
- 6.1.7. Additionally paragraph 182 notes 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.”*
- 6.1.8. Annex 1 of the NPPF sets out the detail of implementation.
- 6.1.9. *ODPM Circular 06/2005* (Government Circular: Biodiversity and Geological Conservation—Statutory Obligations and their Impact within the Planning System) continues to provide administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements and supports the expression of national planning guidance set out in NPPF.

6.2. Kirklees Planning Policy

- 6.2.1. The Kirklees Local Plan was adopted on 27 February 2019 and the relevant policies are:

6.2.1. Policy LP3- - Biodiversity and Geodiversity

- 6.2.1.1. The council will seek to protect and enhance the biodiversity and geodiversity of Kirklees, including the range of international, national and locally designated wildlife and geological sites, Habitats and Species of Principal Importance and the Kirklees Wildlife Habitat Network.

South Pennine Moors

- 6.2.1.2. Proposals which may directly or indirectly compromise achieving the conservation objectives of a designated or candidate European protected site will not be permitted unless the proposal meets the conditions specified in Article 6 (3) - (4) of the Habitats Directive.

Statutory Designated Sites

- 6.2.1.3. Statutory designated sites, including the South Pennine Moors Special Protection Area (SPA) and Special Area for Conservation (SAC) and Sites of Special Scientific Interest, are already highly protected through existing laws and legislation. In accordance with legislation, the Council will seek to ensure that harmful impacts to these areas as a result of development proposals are avoided.
- 6.2.1.4. Development proposed within or outside a designated Site of Special Scientific Interest, likely to have an adverse effect on the site's special nature conservation features, will not normally be permitted. Exceptionally development will be allowed where the benefits of the development clearly outweigh the impacts on the site's special conservation features and measures are provided to mitigate harmful impacts.

The Dark Peak Nature Improvement Area

- 6.2.1.5. Proposals that contribute to the aims and objectives of the Dark Peak Nature Improvement Area will in principle be supported, subject to other policies in this plan. Development likely to have an adverse impact on the aims and objectives of the NIA will not be permitted.

Local Designated Sites & Important Local Ecological Features

- 6.2.1.6. Proposals having a direct or indirect adverse effect on a Local Wildlife Site or Local Geological Site, Ancient Woodland, Veteran Tree or other important tree, will not be permitted unless the benefits of the development can be clearly shown to outweigh the need to safeguard the local conservation value of the site or feature and there is no alternative means to deliver the proposal. In all cases, full compensatory measures would be required and secured in the long term.

Habitats and Species of Principal Importance

- 6.2.1.7. Proposals will be required to protect Habitats and Species of Principal Importance unless the benefits of the development clearly outweigh the importance of the biodiversity interest, in which case long term compensatory measures will need to be secured.

Biodiversity and Development

- 6.2.1.8. Development proposals will be required to:-
- (i) result in no significant loss or harm to biodiversity in Kirklees through avoidance, adequate mitigation or, as a last resort, compensatory measures secured through the establishment of a legally binding agreement;

- (ii) minimise impact on biodiversity and provide net biodiversity gains through good design by incorporating biodiversity enhancements and habitat creation where opportunities exist;
- (iii) safeguard and enhance the function and connectivity of the Kirklees Wildlife Habitat Network at a local and wider landscape-scale unless the loss of the site and its functional role within the network can be fully maintained or compensated for in the long term;
- (iv) establish additional ecological links to the Kirklees Wildlife Habitat Network where opportunities exist; and
- (v) incorporate biodiversity enhancement measures to reflect the priority habitats and species identified for the relevant Kirklees Biodiversity Opportunity Zone

6.2.2. Policy LP31—Strategic Green Infrastructure Network

- 6.2.2.1. Within the Strategic Green Infrastructure Network identified on the Policies Map, priority will be given to safeguarding and enhancing green infrastructure networks, green infrastructure assets and the range of functions they provide.
- 6.2.2.2. Development proposals within and adjacent to the Strategic Green Infrastructure Network should ensure:-
 - (i) the function and connectivity of green infrastructure networks and assets are retained or replaced;
 - (ii) new or enhanced green infrastructure is designed and integrated into the development scheme where appropriate, including natural greenspace, woodland and street trees;
 - (iii) the scheme integrates into existing and proposed cycling, bridleway and walking routes, particularly the Core Walking and Cycling Network, by providing new connecting links where opportunities exist;
 - (iv) the protection and enhancement of biodiversity and ecological links, particularly within and connecting to the Kirklees Wildlife Habitat Network.
 - (v) The council will support proposals for the creation of new or enhanced green infrastructure provided these do not conflict with other Local Plan policies.

7. EVALUATION AND RECOMMENDATIONS

7.1. Overall Approach to Assessment

7.1.1. The overall approach to assessment adopted by the study team is based upon the guidelines for Guidelines for Ecological Impact Assessment in the UK and Ireland—Terrestrial, Freshwater, Marine and Coastal published by the Chartered Institute of Ecological and Environmental (CIEEM 2018) and can be summarised as below:

1. To identify the likely zone of influence (study area) arising from the whole lifespan of the project;
2. To identify and value the features of nature conservation interest within the ecological study area in a systematic way by establishing levels of interest for ecological features measured against definable criteria and is used to select the species, communities, habitats or sites that require further detailed examination during the process of ecological impact assessment.
3. To identify the biophysical changes attributable to the project that are likely to affect valued ecological features and resources;
4. To assess whether these biophysical changes are likely to give rise to a significant ecological impact, defined as an impact on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area, including cumulative and in-combination impacts;
5. To consider appropriate refinement of the project to avoid or reduce identified negative impacts and incorporate mitigation measures and/or compensation measures for any residual significant negative impacts and ecological enhancement measures to improve the wider environment;
6. To undertake an assessment of the ecological impacts of the refined project and definition of the significance of these impacts, including cumulative and in-combination impacts;
7. To provide advice on the consequences for decision making of the significant ecological impacts, based on the value of the resource, feature or function; and

8. Where appropriate to make recommendations for monitoring the implementation and success of mitigation and compensation measures and ecological outcomes, including feedback in relation to predicted outcomes.

7.2. Determining Value

- 7.2.1. The CIEEM guidelines advocates an approach to the valuation of ecological features using a geographical framework (full details in Appendix 2) based upon the following:
 - International;
 - National; (i.e. England/Northern Ireland/Scotland/Wales)
 - Regional;
 - County/Metropolitan
 - District/Unitary Authority/City or Borough
 - Local/Parish
 - Within zone of influence only
- 7.2.2. The thorough evaluation of the ecological importance of the features of a site is essential in order to assess the significance of the ecological effects of the development proposals.
- 7.2.3. The evaluation criteria are given in detail in Appendix 2. Their aim is to consider the habitats, communities and species present on site in relation to the following:
 1. The legislative framework (e.g. the Wildlife and Countryside Act 1981 and the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC) for the presence of protected species and habitats).
 2. Nature conservation designations, including national site designations (Sites of Special Scientific Interest, National Nature Reserves etc), local designations (Sites of Importance for Nature Conservation, Local Nature Reserves, County Wildlife Sites etc).
 3. Accepted criteria for species rarity and declining populations, and rarity of habitat types or communities, including species and habitats identified in the British Red Data Books, national biodiversity action plan, and species and habitats identified in regional or local biodiversity action plans where available.
 4. Accepted criteria for overall site evaluation (including rarity, diversity, naturalness, historical factors and issues relating to landscape ecology).

7.3. Development Impacts

- 7.3.1. The development as proposed is likely to result in the loss of all habitats within the site boundary with the exception of hedgerow **H1** which would be retained and protected during the quarry operation and will and the topsoil mound proposed to be constructed to the south of the hedgerow will have a stand off to protect the hedgerow trees.
- 7.3.2. Boundary features and plantation woodland along Cumberworth Lane would be retained and protected during the life of the quarry.
- 7.3.3. The proposed restoration will seek to create the following habitats:
- agricultural grassland (5.0 ha)
 - native shrub and tree planting (2.18ha)
 - species rich grassland (0.97ha).

7.4. Nature Conservation Designations

7.4.1. Statutory Designations

- 7.4.1.1. The site is not covered by any statutory or non-statutory nature conservation designations.
- 7.4.1.2. European Designations within 10km include the South Pennine Moors SAC and the Peak District Moors (South Pennine Moors Phase 1) SPA are located approximately 8.5km west of the Site. The habitats within the site are not suitable for use by feeding golden plover (*Pluvialis apricaria*) for which the SPA's have been designated and comprises areas of arable agricultural land and small enclosed areas of neutral grassland and ruderal vegetation.
- 7.4.1.3. **No** impacts upon these European designated sites are predicted and **no** further survey and assessment work are recommended.
- 7.4.1.4. The development does not conflict with Local Plan Policy LP30.

7.4.2. Non-Statutory Designations

Site Designations

- 7.4.2.1. There are five LWS within 2km of the site with the nearest being Turpin Hill LWS located approximately 220m south of the site boundary.
- 7.4.2.2. None of these designated sites would be directly affected by the development proposals and no significant off-site impacts are predicted that would impact upon them due to the distanced between them and the site boundary and the nature of the development proposed.
- 7.4.2.3. **No** impacts upon designated sites are predicted and **no** further survey and assessment work are recommended.

7.4.2.4. The development does not conflict with Local Plan Policy LP30.

Landscape Designations

7.4.2.5. The Site does not lie within the KWNH, **no** significant off-site impacts are predicted, **no** impacts upon the integrity of the adjacent habitats within the KWNH are predicted and **no** further survey or assessment work is recommended.

7.4.2.6. The development does not conflict with Local Plan Policy LP30.

Nature Improvement Areas

7.4.2.7. The site does not lie within the Dark Peak Nature Improvement Area which at its closest point is located approximately 11km west of the site boundary.

7.4.2.8. The development does not conflict with Local Plan Policy LP30.

7.5. Habitats

7.5.1. The development will result in the temporary loss of areas of improved grassland, arable agricultural land and neutral grassland/tall ruderal vegetation and sections of derelict dry stone wall which together support a limited range of common and widespread species.

7.5.2. The site does not contain Habitats of Principal Importance listed in Section 41 of the NERC Act 2006 and therefore does not conflict with Local Plan Policy LP30.

7.5.3. Boundary features would be protected and retained during the life of the quarry.

7.5.4. These habitats have no intrinsic botanical value and the loss of these agricultural habitats would only be felt within zone of influence of the development

7.5.5. The proposed restoration will seek to create the following habitats which is likely to lead to a significant biodiversity gain overall.

- agricultural grassland (5.33ha) – this includes re-instatement of the improved grassland along the proposed access track route
- native tree (1.08ha) and shrub planting (0.87ha) – this includes additional planting with the existing tree belt along the norther site boundary with Cumberworth Lane
- species rich grassland (0.97ha)

7.5.6. The Biodiversity Net Gain calculations prepared using the BNG Metric version 4.0 indicates that the proposed habitat improvements would deliver an overall habitat net gain of 64.49% which is in excess of the 10% expected. In this respect the development is in accordance with Local Plan Policy LP30.

- 7.5.7. The new planting will complement and enhance the value of the woodland areas to the south of the site that are included in the Kirklees Wildlife Habitat Network and strengthen existing ecological links and is therefore in accord with Local Plan Policy LP30 and LP31.
- 7.5.8. The development will deliver significant biodiversity net gains and **no** further survey and assessment work are recommended.

7.6. Protected Species

7.6.1. Bats

- 7.6.1.1. All UK species of bat are afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act and also receive full protection as European Protected Species under Section 41 of The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2.

Buildings

- 7.6.1.2. The site does not contain any buildings of potential value to roosting bats
- 7.6.1.3. **No** significant impacts upon roosting bats in buildings are predicted and **no** further survey and assessment work is recommended.

Trees

- 7.6.1.4. The site does not contain any trees of potential value to roosting bats
- 7.6.1.5. **No** significant impacts upon roosting bats in trees are predicted and **no** further survey and assessment work is recommended.

Habitats

- 7.6.1.6. The open arable habitats with the site are assessed to be of low potential value to feeding and commuting bats given their exposed nature and the presence of better habitat nearby. The small, sheltered area of the site at **TN2** would be lost, but the sheltered area at **TN5** would be retained along with the boundary features and hedgerows.
- 7.6.1.7. **No** significant impacts upon commuting or feeding bats are predicted and **no** further survey and assessment work is recommended.

7.6.2. Badgers

- 7.6.2.1. Badgers are protected under the Protection of Badgers Act 1992.
- 7.6.2.2. No badger setts were recorded within or immediately adjacent to site and no evidence of badger foraging activity was recorded during the field survey.
- 7.6.2.3. **No** impacts upon badgers are predicted and **no** further survey or assessment work is recommended

7.6.3. Otters

- 7.6.3.1. Otters are afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act and also receive full protection as European Protected Species under Section 41 of The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2.
- 7.6.3.2. The site **does not** contain any habitats of potential value to otters, **no** evidence of otter activity was recorded during the field survey and the desktop study did **not** provide any records for this species within 2km of the site boundary. **No** impacts upon otter are predicted and **no** further survey or assessment work for otters is recommended.

7.6.4. Water Vole

- 7.6.4.1. Water vole is afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 of the Act.
- 7.6.4.2. The site **does not** contain any habitats of potential value to water vole, **no** evidence of water vole activity was recorded during the field survey and the desktop study did **not** provide any records for this species within 1.8km of the site boundary. **No** impacts upon water vole are predicted and **no** further survey or assessment work for water vole is recommended.

7.6.5. Wild Birds

- 7.6.5.1. With certain exceptions, all wild birds, their eggs, nests and young are protected under the *Wildlife and Countryside Act 1981* (as amended).
- 7.6.5.2. The majority of the ornithological interest recorded during the survey as from the boundary hedgerows which would be protected and retained during the life of the quarry. Quarry operations
- 7.6.5.3. In any case, potential impacts upon nesting birds can be prevented during construction by ensuring that vegetation removal is programmed to occur outside of the bird nesting season (March to September inclusive) or where this is not possible under the supervision of a suitably qualified and experienced ecologist as set out in the recommendations below.
- 7.6.5.4. **No** significant impacts upon nesting birds are predicted and **no** further ornithological survey work is recommended.

7.6.6. Amphibians

- 7.6.6.1. All UK native amphibians are afforded partial or full protection under Section 9 of the *Wildlife and Countryside Act 1981* (as amended) through their inclusion on Schedule 5 of the Act and Great Crested newts (*Triturus cristatus*) are provided the highest level of protection. Great crested newts (GCN) are fully protected from capture, injury, killing and damage or destruction of their breeding sites or resting places under The Conservation of Habitats and Species (as amended) Regulations 2017.
- 7.6.6.2. The site does not contain any ponds suitable for breeding amphibians including great crested newts and no amphibians were recorded during the field survey. No other ponds linked to the site by semi-natural vegetation were considered suitable for supporting breeding GCN and **no** impacts upon amphibians are predicted and **no** further survey work is recommended.

7.6.7. Reptiles

- 7.6.7.1. All species of native reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). The sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) are further protected under Conservation of Habitats and Species (Amendment) Regulations 2017.
- 7.6.7.2. The desktop study identified two records of grass snake approximately 450m north of the site boundary dating from 2014. The arable habitats are considered to be of low value to foraging and resting reptiles, however other parts of the site have some potential value.
- 7.6.7.3. Potential impacts upon reptiles can be prevented during the works proposed by completing them in accordance with standard mitigation measures and under the guidance of a reasonable avoidance measures method statement which sets out methods of working and timing of works.
- 7.6.7.4. **No** significant impacts upon reptiles are predicted and **no** further survey work is recommended.

7.7. Recommendations

7.7.1. Breeding Birds

- 7.7.1.1. Whilst only limited bird activity was recorded from the boundary hedgerow, woodland plantation and isolated trees and scrub with the site boundary these are likely be used by breeding birds during the bird breeding season (March to September inclusive). Given the protection afforded to wild birds and their nests the following precautionary measures are recommended:

- That removal of trees, shrubs and surface vegetation should be completed outside of the bird breeding season (March to September inclusive). Where this is not possible a suitably qualified and experienced ecologist should complete survey of the site immediately prior to completion of the proposed works to search for nesting birds and to advise on exclusion zones or timing of works if nesting birds are recorded.

8. FIGURES

Figure 1—Site Location

Figure 2—Nature Conservation Designations

Figure 3—Phase I Habitats

9. REFERENCES

9.1. Project References

- CB Land Consultancy (2023) Bromley Quarry Restoration and Aftercare Report
- RDF** Ecology (2012) Bromley Farm Quarry, Upper Cumberworth Ecological Impact Assessment
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- Wardell Armstrong (2019) Naylor Industries Plc. Bromley Quarry Ecological Baseline Report and Protected Species Method Statement

9.2. Technical References

- CIEEM (2018)—Guidelines for Ecological Impact Assessment in the UK and Ireland—Terrestrial, Freshwater, Marine and Coastal. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017) Guidelines for Preliminary Ecological Appraisal (second edition). Chartered Institute of Ecology and Environmental Management, Winchester.
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- Department for Communities and Local Government (2012), National Planning Policy Framework. Department for Communities and Local Government, London.
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- HMSO Conservation of Habitats and Species (Amendment) Regulations 2017.
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- HMSO (2005) Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System. Office of the Deputy Prime Minister (ODPM) Circular 06/2005 HMSO, Norwich.
- Hundt (2012) Bat Surveys Good Practice Guidelines 2nd Edition, Bat Conservation Trust, London.
- JNCC (2010) Handbook for Phase 1 Habitat Survey: A technique for environmental audit (reprint). Joint Nature Conservation Committee, Peterborough.
- Stace, C. (1997) New Flora of the British Isles 2nd Edition. Cambridge University Press, UK.

10. APPENDICES

10.1. Appendix 1—List of Species

English Name	Scientific Name	Woodland and Scrub	Grassland	Ruderal Vegetation	Arable	Hedgerows and Walls
Field Maple	<i>Acer campestre</i>	F				O-LF
Common Bent	<i>Agrostis capillaris</i>	O	O-LF	O-LF		O
Creeping Bent	<i>Agrostis stolonifera</i>			LF		
Garlic Mustard	<i>Alliaria petiolata</i>	O				O
Alder	<i>Alnus glutinosa</i>	A				
Barren Brome	<i>Anisantha sterilis</i>		R	O		
Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>		O-LF	O		
Cow Parsley	<i>Anthriscus sylvestris</i>	F-LA	O	F-LA		O-LF
False Oat Grass	<i>Arrhenatherum elatius</i>	O-LF	O-LA	F		O
Mugwort	<i>Artemisia vulgaris</i>		R	O-LF		O
Daisy	<i>Bellis perennis</i>		R			
Silver Birch	<i>Betula pendula</i>	F-A				
Wavy Bitter-cress	<i>Cardamine flexuosa</i>			O	O-LF	
Common Knapweed	<i>Centaurea nigra</i>			R		
Common Mouse-ear	<i>Cerastium fontanum</i>	O	O-LF	O		
Rosebay Willowherb	<i>Chamerion angustifolium</i>			LA		
Creeping Thistle	<i>Cirsium arvense</i>	O	R	O-LF		
Spear Thistle	<i>Cirsium vulgare</i>		O	O		
Hazel	<i>Corylus avellana</i>	A				O
Hawthorn	<i>Crataegus monogyna</i>	A				A-LD
Crested Dog's Tail	<i>Cynosurus cristatus</i>		LF			
Cock's Foot	<i>Dactylis glomerata</i>	F	F-LA	F-LA	O	F
Foxglove	<i>Digitalis purpurea</i>					R-O
Common Couch	<i>Elytrigia repens</i>	O		F		LF
Broad-leaved Willowherb	<i>Epilobium montanum</i>	O				O
Red Fescue agg.	<i>Festuca rubra</i> agg.	O-LF	F	LF		O
Ash	<i>Fraxinus excelsior</i>	F				LF
Cleavers	<i>Galium aparine</i>	F-LA		LA		O-LF
Cut-leaved Cranesbill	<i>Geranium dissectum</i>		R			
Herb Robert	<i>Geranium robertianum</i>	LF				O
Wood Avens	<i>Geum urbanum</i>	LF				
Ivy	<i>Hedera helix</i>	O-LF				O-LF
Hogweed	<i>Heracleum sphondylium</i>	O		O-LA		O
Yorkshire Fog	<i>Holcus lanatus</i>	F-LA	F	F		O-LF
Holly	<i>Ilex aquifolium</i>	O				O
White Dead Nettle	<i>Lamium album</i>	O	O	O-LF		O
Red Dead-nettle	<i>Lamium purpureum</i>		R-O	O		
Perennial Ryegrass	<i>Lolium perenne</i>	O-LF	F-LD	F-LA	O	LF
Crab Apple	<i>Malus sylvestris</i>					VR

English Name	Scientific Name	Woodland and Scrub	Grassland	Ruderal Vegetation	Arable	Hedgerows and Walls
Pineapple Weed	<i>Matricaria discoidea</i>				F-LA	
Field Forget-me-not	<i>Myosotis arvensis</i>			R	O	
Common Poppy	<i>Papaver rhoeas</i>				LF	
Ribwort Plantain	<i>Plantago lanceolata</i>	R	O-LF	LF		
Greater Plantain	<i>Plantago major</i>		R		LF	
Annual Meadow-grass	<i>Poa annua</i>				LF	
Smooth Meadow-grass	<i>Poa pratensis</i>	O	O-LF	O-LF		O
Knotgrass agg.	<i>Polygonum aviculare</i> agg.				O-LA	
Pedunculate Oak	<i>Quercus robur</i>	F				O
Meadow Buttercup	<i>Ranunculus acris</i>		R	R		
Creeping Buttercup	<i>Ranunculus repens</i>		O-LF	O-LF		O
Dog Rose agg.	<i>Rosa canina</i> agg.					O
Bramble agg.	<i>Rubus fruticosus</i> agg.	O-LA		O-LF		F
Common Sorrel	<i>Rumex acetosa</i>		O			
Broad-leaved Dock	<i>Rumex obtusifolius</i>		O	O-LA		
Procumbent Pearlwort	<i>Sagina procumbens</i>		O			
Goat Willow	<i>Salix caprea</i>	F				O
Elder	<i>Sambucus nigra</i>	O				O
Ragwort	<i>Senecio jacobaea</i>		O	O-LF		
Groundsel	<i>Senecio vulgaris</i>		R		F	
Hedge Mustard	<i>Sisymbrium officinale</i>	R				O
Prickly Sow Thistle	<i>Sonchus asper</i>			O	O	
Hedge Woundwort	<i>Stachys sylvatica</i>					R
Common Chickweed	<i>Stellaria media</i>				O-LA	
Dandelion	<i>Taraxacum officinale</i> agg.	O	O-LF	O-LF		O
Red Clover	<i>Trifolium pratense</i>	O	O-LF	O		
White Clover	<i>Trifolium repens</i>	O	F	F	O	
Colt's-foot	<i>Tussilago farfara</i>			O-LF		
Wych Elm	<i>Ulmus glabra</i>					VR
Common Nettle	<i>Urtica dioica</i>	F-LA	O	F-LA		F-LA
Germander Speedwell	<i>Veronica chamaedrys</i>		O	O		
Common Field Speedwell	<i>Veronica persica</i>				O-LF	
Common Vetch	<i>Vicia sativa</i>		R	R		

Key

D	Dominant	51-100%
A	Abundant	35-50%
F	Frequent	16-30%
O	Occasional	6-15%
R	Rare	1-5%
No entry	Absent	0%
L	Local e.g. LF – Locally Frequent	-
V	Very e.g. VR = Very Rare	-

10.2. Appendix 2—Valuation Criteria

- 10.2.1. Guidelines for ecological evaluation and the assessment of impacts have been published by Institute of Environmental Assessment (1995) and the Chartered Institute of Ecology and Environmental Management (CIEEM 2018).
- 10.2.2. The value that is attached to an ecological resource influences:
- whether, as part of screening, potentially affected features or resources are considered sufficiently valuable that there could be a significant effect that would trigger an EIA;
 - whether, as part of scoping, ecological features or resources are considered for inclusion in the EcIA—this is influenced by their value in relation to a ‘threshold’ level of value that should be defined during scoping;
 - deciding what mitigation is appropriate and
 - considering legal and policy implications.

10.2.1. Legislative Framework

- 10.2.1.1. Species, communities or habitats receiving legal protection under UK or EC law have high importance on national and international scales.
- 10.2.1.2. Internationally important sites include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. In the UK candidate SACs, potential SPAs and proposed Ramsar sites should be given the same consideration as designated sites in accordance with country specific policies and supporting guidance.
- 10.2.1.3. Species, communities or habitats requiring protection under EC law are listed on schedules I and II (whose conservation requires the designation of Special Areas of Conservation), IV (species in need of strict protection) and V (species whose exploitation may be subject to management measures) of the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC). The enabling legislation for the UK is the Conservation (Natural Habitat, &c) Regulations 2017. Species may also be scheduled under Appendix 1 of the Convention on the Conservation of European Wildlife and Natural Heritage 1979 (Bern Convention).
- 10.2.1.4. Other sites of international importance designated under international obligations include Biosphere Reserves (UNESCO Man and Biosphere Programme), Ramsar Sites (Convention on Wetlands of International Importance especially as Wildfowl Habitat 1971) and Special Protection Areas (EC Wild Birds Directive 79/409).

- 10.2.1.5. Species with special protection under UK law are listed on the schedules of the Wildlife and Countryside Act 1981 and amendments. The act also gives rise to statutory site designations i.e. National Nature Reserves, Sites of Special Scientific Interest, Areas of Special Protection for Birds, and orders e.g. Limestone Pavement Orders.

10.2.2. UK Site Designations

- 10.2.2.1. Sites of national importance include the statutorily designated Sites of Scientific Interest (SSSI) and National Nature Reserves (NNRs).
- 10.2.2.2. Lower levels of importance attach to locally designated sites such as those non-statutory site designations applied by Local Authorities or Wildlife Trusts e.g. Sites of Importance for Nature Conservation (SINC's or equivalent) or Local Nature Reserves designated under the National Parks and Access to the Countryside Act 1949. Such sites may be considered to be of High Local Importance i.e. important at the county or metropolitan level (CIEEM 2018).

10.2.3. Rarity of Species and Habitats

- 10.2.3.1. The British Red Data Book for vascular plants (Perring and Farrell 1983) lists 317 species or subspecies as extinct, endangered, vulnerable and rare. Nationally rare species are defined as occurring in 1–15 10km squares of the national grid in Britain, nationally scarce species occurring in 16–100 10km squares. The presence of a breeding population of any nationally rare species is of national importance whereas a breeding population of a nationally scarce species is of regional importance. Assemblages of 2 or more species may increase the importance of a site further.
- 10.2.3.2. Regional rarities are defined as occurring in 15 or fewer localities or 1km squares in a former Nature Conservancy Council region (NCC 1989).
- 10.2.3.3. Biodiversity: The UK Steering Group Report contains a “Long List” of key species in the UK that fall into 1 or more of the following categories: threatened endemics or globally threatened; where the UK holds greater than 25% of the world population; where numbers or range have declined by more than 25% in the last 25 years; nationally rare species; and statutorily protected species. Presence of viable populations of such species may be of high importance.
- 10.2.3.4. County floras and biodiversity action plans, or district action plans may identify species that are rare at the county or district level. Viable populations will therefore have conservation importance in these contexts.

- 10.2.3.5. Further information on species rarity may be found in Scarce Plants in Britain (Stewart et al 1994) and the Atlas of the British Flora (Perring and Walters 1962) and subsequent revisions.
- 10.2.3.6. Biodiversity: The UK Steering Group Report has identified a number of key habitats under the following criteria: those for which the UK has international obligations; rare habitats or those with high rates of decline; functionally critical habitats (marine areas); and habitats that are important for key species. Sites containing good examples of viable areas of any key habitat may be considered nationally important.
- 10.2.3.7. Importance may be attached to plant community types defined in the National Vegetation Classification (Rodwell 1991 etc) that are also described as rare, declining or with restricted distributions or are identified as being of particular botanical importance (NCC 1989).

10.2.4. Criteria for Overall Site Evaluation

- 10.2.4.1. The accepted criteria for site evaluation are set out by Ratcliffe (1977) in a Nature Conservation Review and are also explained in Guidelines for the Selection of Biological SSSI's (NCC 1989). The principal criteria are briefly outlined below:
- 10.2.4.2. **Naturalness.** Truly natural habitats are valued highly but are rare in Britain and most sites are modified and semi-natural at best. Physical habitat modifications vary greatly in their impact, some being beneficial whilst others are harmful. A greater degree of conformity of a particular community or site with semi-natural rather than highly modified vegetation types in the National Vegetation Classification and the absence of species indicating disturbance are likely to lead to attachment of higher importance. However, note that communities that appear to be intermediate between semi-natural NVC types are not necessarily of lesser quality.
Size. The area of a site or habitat judged to be viable varies greatly between different habitat types and with factors such as the condition of the habitat, the shape of the habitat area and surrounding land use. In addition, the territorial requirements of particular species within the site/habitat and habitat management factors may need consideration.

In general, larger sites or areas of habitat tend to be valued more highly because of the greater population sizes and hence more robust populations of the species within them; the potential for increased site or habitat diversity and hence greater species-richness over a larger area; and a reduced importance of edge effects (pollution drift, habitat degradation/change for other reasons at the site edge) if the site is block

rather than ribbon shaped. Small sites become increasingly important in areas of little semi-natural habitat.

Rarity. Criteria for rarity of species and habitats are outlined above. The scarcer the habitat or species then the higher the level of importance attached.

Diversity. Diversity tends to be valued positively as it increases. At the phytosociological level, some habitats are more species-rich than others and so have a higher value, provided that the richness does not involve non-native species. Some plant communities are intrinsically more species-rich than others so comparisons should only be made between the same community type.

The standard of floristic diversity is guided by the floristic tables within the National Vegetation Classification (NVC) (Rodwell 1991 etc). A community having more than 75% of the total plant species list for its type in the NVC would be rated very highly. Diversity of different communities within a vegetation formation (e.g. woodland) may also be rated highly as may structural diversity (e.g. rides, glades and differing age structures or canopy layering in woodland). Habitat diversity across a site may also increase its importance.

Fragility. Fragility is a measure of the intrinsic sensitivity of nearly all natural and semi-natural habitats and species to human impact. It is the fragility of such habitats and species which causes them to be more highly valued than any of the artificial substitutes which replace them through human activity; and the greater their fragility the greater their value. Fragility is therefore clearly related irreplaceability or non-recreatability. Re-creation of habitats that have taken centuries to develop, sometimes with centuries of traditional management, is impossible to the full extent of their former complexity.

Typicalness. Typicalness is an indication of how characteristic the features of a site are compared to its particular ecosystem. It is intended as a guard against designation of those sites with unusual features as being always the most important.

Position in an Ecological/Geographical Unit. This is a landscape ecological criteria designed to identify sites or habitats which may be important to maintaining the viability of a larger group thereof; or which is essential in maintaining the population of a species with a large territory spanning several sites; or is one of a number of sites important to a

metapopulation of a species in fragmented landscapes; or may be important in a wildlife corridor or network of habitat patches.

10.2.5. Amenity Value

- 10.2.5.1. The amenity value of a site in ecological terms is generally seen as its value for the study or quiet enjoyment of wildlife. Sites with high intrinsic appeal and good access are therefore regarded as important in this context. Also important are issues such as site safety, proximity to schools and population centres and site management difficulties. Less emphasis is placed on the criteria outlined in section 9.1.4 in such situations.

10.2.6. Ecological Importance Summary Table

- 10.2.6.1. The following table has slightly modified from Regini (2000) with reference to CIEEM 2018. Its definitions are adopted in this report. Where species, habitats or sites occur in more than one category, the highest level of importance is applicable. Sites that meet the criteria for a particular designation are afforded the level of importance corresponding to that designation whether or not they are actually designated.

Table 8—Ecological Importance Summary Table

Level of Value	Examples
International	An internationally designated site or candidate site (SPA, pSPA, SAC, cSAC, pSAC, Ramsar site, Biogenetic Reserve). A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. A regularly occurring, nationally significant population of any internationally important species. Also a regularly occurring and nationally significant number of an internationally important species during a critical phase of its life cycle.
National	A nationally designated site (SSSI, ASSI, NNR, Marine Nature Reserve) or a discrete area, which meets the published selection criteria for national designation (e.g. SSSI selection guidelines). A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat which are essential to maintain the viability of a larger whole. Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (see local BAP). A regularly occurring, regionally or county significant population of any nationally important species. Also a regularly occurring and regionally or county significant number of a nationally important species during a critical phase of its life cycle.

Level of Value	Examples
Regional	Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole; Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile; Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation; A regularly occurring, locally significant number of a regionally important species during a critical phase of its life cycle; Sites which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.
County / Metropolitan	Semi-natural ancient woodland greater than 0.25 ha; County/Metropolitan sites and other sites which meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County / metropolitan; A viable area of habitat identified in County BAP; Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan "red data book" or BAP on account of its regional rarity or localisation; A regularly occurring, locally significant number of a County/Metropolitan important species during a critical phase of its life cycle.
District / Borough	Semi-natural ancient woodland smaller than 0.25 ha; Areas of habitat identified in a sub-County (District/Borough) BAP or in the relevant Natural Area profile; Local Nature Reserves selected on District/ Borough criteria Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource; A diverse and/ or ecologically valuable hedgerow network; A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation; A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.
Parish / Neighbourhood	Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. species-rich hedgerows. Local Nature Reserves selected on Parish criteria.
Negligible	Low grade, widespread and common habitats.