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PICKFORD CONTRACTING LTD

MIDDLECLIFFE QUARRY

PRELIMINARY ECOLOGICAL APPRAISAL

AUGUST 2019

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Wardell Armstrong

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PICKFORD Contracting Ltd

MIDDLECLIFFE QUARRY

PRELIMINARY ECOLOGICAL APPRAISAL

AUGUST 2019

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WASTE RESOURCE MANAGEMENT

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Appendix 1 Legislation and Policy Summary

DRAWINGS	TITLE	SCALE
SH12283-003	Extended Phase 1 Habitat Results Plan	1:2,500@A3
SH12283-004	Breeding Bird Survey Results	1:2,500@A3

EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by Pickford Contracting Ltd to undertake a Preliminary Ecological Appraisal (PEA), Preliminary Breeding Bird Survey (BBS) and eDNA sampling for great crested newt to inform a proposed restoration scheme at Middlecliffe Quarry, Lee Lane, Sheffield, S36 9NT, central Ordnance Survey (OS) grid reference SE 19488 04107.

The site comprises an area of heavily disturbed former quarry covering approximately 17.7 hectares (ha) in total within a mainly (pastoral) agricultural area. The surrounding habitats include improved and neutral grassland with a small area of semi-natural broadleaved woodland. Acid grassland and moorland are present in the wider area.

There are three Local Wildlife Sites (LWS); Whitley Edge which shares a common boundary with the site, Small Shaw and High Bank which is situated approx. 660m NE, and Western Moors which forms the edge of the Peak District National Park and lies approx. 830m south of site.

There are no significant ecological constraints to the proposed restoration works although checking surveys for the presence of active badger setts should be undertaken in advance of the removal of any scrub or tall grassland habitats. The works should also seek to avoid removing any vegetated habitats within the bird breeding season (March – August inclusive) unless a prior detailed check for nests has been undertaken within 48hrs.

The preliminary Breeding Birds Survey did not record the presence of Curlew on/adjacent to the site, however this may be due to the survey being undertaken towards the end of the breeding season for this species. Nevertheless, other species of wading bird typically associated with moorland fringe, such as lapwing and oystercatcher were noted. It is therefore recommended that the restoration of the site includes the following features which would be of benefit to wading birds:

- The provision of an open, lightly grazed grassland habitat across the majority of the site which is contiguous with the pastoral habitats elsewhere in the locality;
- The provision of areas of wet/damp grassland and marshy grassland habitats by deliberately impeded drainage;
- The retention of long views from the site interior by keeping hedgerow plantings to the absolute minimum required.

- Monitoring of the wading bird population via three surveys during the first five years following restoration.

1 INTRODUCTION

1.1 Terms of Reference

- 1.1.1 WA was commissioned by Pickford Contracting Ltd to undertake a Preliminary Ecological Appraisal (PEA), Preliminary Breeding Bird Survey (BBS) and eDNA sampling in support of a proposed restoration scheme at Middlecliffe Quarry, Lee Lane, Sheffield, S36 9NT, central Ordnance Survey (OS) grid reference SE 19488 04107.
- 1.1.2 This report has been produced with reference to current guidelines for Phase 1 Habitat Survey (Joint Nature Conservation Committee, 2010), Preliminary Ecological Appraisal (Institute of Ecology and Environmental Management, 2013) and British Standards for Biodiversity – Code of Practice for Planning and Development (British Standards Institute, 2013).
- 1.1.3 The purpose of the PEA is to identify the likely presence of ecological receptors within or near the site that could be subject to adverse effects arising from the proposed restoration.
- 1.1.4 The following ecological features have been considered:
- Statutory and non-statutory designated conservation areas;
 - Areas of Ancient Woodland;
 - Legally Protected Species;
 - Priority Habitats and Species¹;
 - Local Biodiversity Action Plan (BAP) priority habitats and species; and
 - Invasive species.
- 1.1.5 This report also seeks to identify any requirement for further specialist survey where the initial assessment cannot be relied upon to adequately determine presence or reliably infer absence of protected species/taxa.

¹ As defined under Section 41 (England) of the Natural Environment and Rural Communities Act 2006.

1.2 Site Context

- 1.2.1 The area of detailed ecological study referred to as 'the Site' comprises an area of former clay quarry covering approximately 17.7 hectares (ha) in total. The Site is no longer subject to active quarrying and is partly infilled; however the cliffs forming the previous quarry walls are present to the north/west. The site habitats are mainly unvegetated although there are areas of composted material which support a dense Perennial rye-grass *Lolium perenne* (cultivar) sward.
- 1.2.2 The site lies in a mainly pastoral agricultural area on the fringes of the Pennines and is immediately bounded by improved and neutral grassland with a small area of semi-natural broadleaved woodland situated to the south. Acid grassland and moorland are present in the wider area.

2 METHODOLOGY

2.1 Desk Study

2.1.1 The desktop study was informed by review of existing available information provided by Barnsley Biological Records Centre (BBRC), South Yorkshire Badger Group (SYBG) and from available internet-based resources for a 2km search radius from the Site boundary. OS and satellite mapping was also used to gain contextual habitat information.

2.1.2 Specific information was sought for:

- Statutory designated sites;
- Locally designated sites;
- Ancient woodland²;
- Protected and priority species;
- s.41 Habitats and Species;
- Local Biodiversity Action Plan (LBAP) priority habitats and species.

2.2 Field Surveys

2.2.1 The Phase 1 Habitat Survey, Preliminary Breeding Bird Survey and eDNA testing were all carried out on the 30th May 2019 by experienced Ecologists from WA.

Extended Phase 1 Habitat Survey

2.2.2 The survey broadly followed the 'Extended Phase 1' methodology (Institute of Environmental Assessment (IEA), 1995 and JNCC 2010). Each of the main habitats were classified according to the relevant criteria including vegetation composition expressed according to the DAFOR³ system.

2.2.3 In addition to the mapping and description of habitats, incidental observations of protected and/or notable species and the potential for such species to occur on site (and in the surrounding landscape where relevant) were also recorded onto secure digital media for mapping and data collection.

² As defined by Natural England on their Inventory of Ancient Woodlands

³ D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare.

2.2.4 Broad habitats are mapped on Drawing SH12283-003 *Extended Phase 1 Habitat Results Plan* with appropriate references identifying features of particular note.

Preliminary Breeding Bird Survey

2.2.5 WA carried out a Preliminary Breeding Bird Survey (BBS) was carried out on the 30th May 2019.

2.2.6 The methodology used for the BBS was based on techniques devised by British Trust of Ornithology (BTO)/ Joint Nature Conservation committee (JNCC) / Royal Society for the Protection of Birds (RSPB) Common Bird Census (CBC) survey technique (Gilbert *et al* 1998).

2.2.7 During the breeding bird season (March - September), many birds, especially passerines, mark their territories by singing conspicuously, displaying or periodically disputing with rival neighbours (Bibby *et al* 2000). An amended and indicative territory mapping survey (Bibby *et al* 2000) was undertaken in which all displaying birds associated with the site were recorded. Following the BTO survey guidelines, a singing bird is classed as a territorial male and thus indicative of the presence of a breeding pair.

2.2.8 A transect route was mapped out prior to the surveys being undertaken, paying particular attention to linear features (such as hedgerows and tree lines) and natural landscape features (such as watercourses and areas of scrub).

2.2.9 Utilising standard BTO notation⁴ the locations of the singing birds were marked on site maps to indicate territory locations. Care was taken to ensure each individual was marked only once. However, all behaviour was marked, including, movements using standard symbols, as detailed in Bibby *et al.* (1992).

2.2.10 The survey commenced early morning, around an hour after sunrise to encapsulate peak periods of displaying bird activity. To provide an indication of the total bird species diversity in the local area, all species observed on site, and within the 100 m zone of influence, were recorded as part of the survey.

⁴ A full list of species occurring in Britain and their BTO species code can be found here: <http://www.bto.org/about-birds/birdfacts/british-list>

2.2.11 Drawings showing the sightings and indicative territory locations of s.41 and BoCC species identified on site are provided as Drawings numbered SH12283-004 Breeding Bird Survey Results.

eDNA testing

2.2.12 There are four waterbodies present on site which were subject to eDNA testing for great crested newt (GCN) presence. Waterbody locations can be found on Phase 1 Habitat Results Plan SH12283-003. Methodologies were undertaken in strict accordance with the relevant DEFRA guidelines⁵ (Biggs et al., 2014).

2.2.13 The following field sampling protocols were followed when taking water samples of each pond:

- Twenty sub-samples at each pond were taken and evenly spaced around the pond margin and where possible, targeted areas where there was vegetation which could be used by great crested newts for egg laying.
- Using gloves, the surveyor opened the sterile Whirl-Pak bag plastic strip and collected 20 samples of 30mL each of pond water from around the margins of the pond. The samples were emptied into the Whirl-Pak bag and closed securely and shaken for 10 seconds.
- With a fresh pair of gloves on the surveyor used the clear plastic pipette provided and take 15ml of water from the Whirl-Pak bag into a sterile tube containing 35ml of ethanol to preserve the eDNA samples. The tubes were closed and shaken for 10 seconds to mix the samples and the preservatives.
- The above process was repeated to obtain seven conical tubes for each pond.
- The remaining water in the Whirl-Pak bag was emptied into the pond.
- The above process was carried out for each pond surveyed.

⁵ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014). *Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067*. Freshwater Habitats Trust: Oxford

2.2.14 All samples were labelled with the relevant eDNA testing kit reference and pond number.

The eDNA samples were returned to Surescreen Scientifics on 31st May 2019.

2.3 Nomenclature

2.3.1 Vascular plant names follow '*New Flora of the British Isles*' (Stace, 2010) with vernacular names as provided in the Botanical Society of the British Isles website (BSBI, 2013).

2.3.2 All fauna names follow those on the National Biodiversity Network (NBN) Gateway (NBN, 2013).

2.3.3 The common and scientific name of species/taxa is provided (if available) when first mentioned in the text, with only the vernacular name referred to thereafter.

2.4 Caveat

2.4.1 Ecological surveys are limited by factors that affect the presence of plants and animals such as time of year, weather, migration patterns and behaviour. The survey was undertaken in May and therefore represents a valid sample of ecological evidence present on that date/season. The report is not designed, nor is it required to, present a complete inventory of flora and fauna.

2.4.2 The absence of desk study records is not relied upon to determine absence of a particular species. Often, the absence of records is a result of under-recording within the given search area and as such the experience of the ecologist concerned together with a range of additional factors, such as the presence or absence of potential supporting habitat, is used to infer likely presence or absence.

2.4.3 Ornithological surveys are affected by a variety of factors which affect the presence of birds such as season, weather, food availability, species behaviour and disturbance. The absence of any particular species within the survey area should not be taken as conclusive evidence that the species is not present or that it will not be present in the future.

2.5 Quality Assurance & Environmental Management

2.5.1 The surveys and assessments have been overseen by and the report checked and verified by a full member of CIEEM, whom is bound by its code of professional conduct.

2.5.2 All surveys and assessments have been undertaken with reference to the recommendations given in British Standard BS 42020, and as stated within specialist guidance, as appropriate, and are referenced separately.

3 RESULTS AND EVALUATION

Extended Phase 1 Habitat Survey

3.1 Statutory and Non-Statutory Designated Sites

- 3.1.1 Desk study results for designated sites within a 2km search radius are evaluated in Table 2, below.
- 3.1.2 The search area is extended to allow for the inclusion of Impact Risk Zones (IRZ)⁶ for more distant Sites of Special Scientific Interest (SSSI). Where present, IRZs promote consultation between Natural England and the Local Planning Authority on the likelihood of adverse environmental effects.
- 3.1.3 Sites which are considered potentially sensitive to the development proposals by virtue of their supported species or habitat assemblages, the distance/ecological connectivity to the application site and the nature of the perceived impacts, are highlighted in bold text and are discussed in detail in the final sections of the report.
- 3.1.4 Sites for which potential adverse effects are not anticipated are excluded from further assessment.
- 3.1.5 Although unlikely to be negatively impacted, it is worth noting there is the South Pennine Moors, a 'Natura 2000' SAC/SPA site, are located less than 4km from the application site.

Table 2: Designated Sites Evaluation.		
Site Name and Status ⁷	Reason for Designation	Potential Adverse Effects
Whitley Edge LWS Shares approx. 30m of northern boundary of site	Acid grassland holding many species associated with habitat type. It acts as habitat for a number of UKBAP breeding bird species inc. skylark (<i>Alauda arvensis</i>), linnet (<i>Carduelis cannabina</i>), reed bunting (<i>Emberiza schoeniclus</i>), curlew	The designated area shares part of its boundary with that of the application site. The restoration proposals should recognise the presence of the LWS and compliment the supported habitats/species groups.

⁶ <https://data.gov.uk/dataset/sssi-impact-risk-zones>

⁷ SPA – Specially Protected Area, SAC – Special Area for Conservation, Ramsar – site designated under the Ramsar Convention, SSSI – Site of Special Scientific Interest, NNR – National Nature Reserve, LNR – Local Nature Reserve, LWS - Local Wildlife Site.

Table 2: Designated Sites Evaluation.		
Site Name and Status ⁷	Reason for Designation	Potential Adverse Effects
	(<i>Numenius arquata</i>) and lapwing (<i>Vanellus vanellus</i>). It is also important for breeding snipe (<i>Gallinago gallinago</i>), an Amber list species. Forms part of a wider habitat network of heath/acid grassland reaching from Thurlstone to the Western Moors.	
Small Shaw and High Bank LWS Approx. 660m north-east of site	A series of three slightly separated sites, mostly covered by strongly acidic grassland, dwarf shrub heath and tree regeneration. UKBAP bird species linnet (<i>Carduelis cannabina</i>) and yellowhammer (<i>Emberiza citrinella</i>) breed in the area. Forms part of a wider habitat network of heath/acid grassland reaching from Thurlstone to the Western Moors.	The application site lies wholly outside of the designated area with very limited connectivity. Therefore, no adverse effects are anticipated.
Western Moors LWS Approx. 830m south of site	Area closest to application site comprises of <i>Calluna</i> dominated moorland with a variety of plant communities, inc. dry heath/acid grassland mosaic with small patches of wet modified bog. Area managed for water catchment. Mountain hare (UKBAP Priority Species) sighted several times during latest field survey suggesting significant population in the area.	The application site lies wholly outside of the designated area, separated by numerous roads and developments. Therefore, no adverse effects are anticipated.

3.2 Habitats

- 3.2.1 All habitats within the Site are described in Table 3. The conservation value and sensitivity of habitats in relation to the proposed works is provided.
- 3.2.2 Habitats which could be subject to adverse effects are indicated with bold text and are discussed in Section 5 *Discussions and Recommendations*. Habitats for which potential adverse effects are not anticipated are excluded from further assessment.
- 3.2.3 The location and extent of habitats is shown on Drawing SH12283-001 *Extended Phase 1 Habitat Results Plan*.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Improved Grassland Rye grass dominated leys are present in the east of the site, beyond the previously quarried area and to the south west as well as along the road verges as shown on the photograph. Other than perennial rye grass dandelion <i>Tarax</i> agg, daisy <i>Bellis perennis</i>, creeping buttercup <i>Ranunculus repens</i> red fescue <i>Festuca rubra</i>, common sorrel <i>Rumex acetosa</i>, broad leaved dock <i>Rumex obtusifolius</i>, creeping bent <i>Agrostis stolonifera</i> and annual meadow grass <i>Poa annua</i> are also present occasionally.		x	x	This habitat is common and widespread within a national and local context and is considered to be of intrinsically low ecological value.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Bare Ground This habitat has been actively and recently worked and has very little vegetation present. In places procumbent pearlwort <i>Sagina procumbens</i>, creeping bent, creeping buttercup and annual meadow grass are present.		x	x	This habitat is artificial, and widespread within a national and local context and is considered to be of intrinsically low ecological value.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Semi-natural Broadleaved Woodland Broadleaved woodland is present to the south of the site and adjacent to it is a stand of recently planted young woodland. The broadleaved woodland is dominated by mature beech <i>Fagus sylvatica</i> with a very sparse ground flora.		✓	✓	Areas of broadleaved woodland may be negatively affected as a result of the proposed development.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Tall Ruderal Stands of Broad-leaved dock, spear thistle, weld <i>Reseda luteola</i> , common nettle <i>Urtica dioica</i> and bramble are present at various locations.	See foreground of photo attached to Neutral Grassland	x	x	Habitat is common and widespread in a national and local context.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Neutral Grassland A single meadow of neutral grassland is present to the south/east of the application site. Species are as per Improved grassland, but <i>Lolium</i> is less prominent in the sward, being replaced by creeping and common bent <i>Agrostis capillaris</i>, and Yorkshire-fog.		x	x	Habitat is common and widespread in a national and local context.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Plantation Woodland A stand of young plantation woodland is present close to the south western site boundary with Hawthorn <i>Crataegus monogyna</i>, grey willow <i>Salix cinerea</i>, ash <i>Fraxinus excelsior</i>, sycamore <i>Acer pseudoplatinus</i> and Scot's pine <i>Pinus sylvestris</i> present. Ground flora is dominated by Yorkshire fog <i>Holcus lanatus</i>, creeping bent with frequent tufted hair grass <i>Deschampsia cespitosa</i>, tormentil <i>Potentilla erecta</i>, marsh thistle <i>Cirsium palustre</i> and bracken <i>Pteridium aquilinum</i>.		x	✓	Areas of broadleaved plantation may be negatively affected as a result of the proposed development.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Standing Open Water Three ponds are present on site including two shallow lagoons which are formed from impeded drainage within the centre of the cleared parts of the site; these ponds have no aquatic or marginal vegetation. A mature pond is present close to the southern site boundary with dense emergent bulrush <i>Typha latifolia</i> and dense grey willow dominating the banks.		✓	✓	The waterbody may be directly impacted by proposed development works.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Dry Ditch A dry ditch follows the northern boundary of the site the banks of the ditch are partially vegetated with meadow foxtail <i>Alopecurus pratensis</i>, common mouse ear <i>Cerastium fontanum</i>, opium poppy <i>Papaver somniferum</i>, tufted hair grass, marsh thistle, weld, and frequent mosses.		x	x	Habitat is common and widespread in a national and local context. No negative effects are anticipated.

Table 3: Habitat Description and Evaluation				
Phase 1 Habitats		s.41	LBAP	Potential Adverse Effects
Scrub Dense and scattered scrub is present around the southern and western margins of the site, dominated by hawthorn and grey willow.		x	x	Habitat is common and widespread in a national and local context.

Breeding Bird Survey

3.2.4 During the BBS, a total of twenty species were recorded on site. All birds recorded during the survey are summarised in Table 4. All nesting birds are discussed in the final section given the general legislative provisions relating to the protection of active nests.

Table 4: *Bird Species Recorded*

Common name	Latin name	Status ⁸	Supporting Habitat
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	S1	Grassland and waterbodies provide suitable nesting and foraging opportunities.
Blue Tit	<i>Cyanistes caeruleus</i>	S1	Woodland, trees and scrub provide nesting and foraging opportunities.
Chaffinch	<i>Fringilla coelebs</i>	S1, A1	Woodland, trees and scrub provide nesting opportunities. Grassland provide suitable foraging.
Goldfinch	<i>Carduelis carduelis</i>	S1	Woodland, trees and scrub provide nesting and foraging opportunities.
Jackdaw	<i>Coloeus monedula</i>	S1	Woodland, trees and scrub provide nesting opportunities.
Long-tailed Tit	<i>Aegithalos caudatus</i>	S1	Woodland, trees and scrub provide nesting and foraging opportunities.
Mistle Thrush	<i>Turdus viscivorus</i>	RL, S1	Woodland, trees and scrub provide nesting opportunities. Grassland provide suitable foraging.
Mallard	<i>Anas platyrhynchos</i>	AL, S1	Waterbodies provide suitable nesting and foraging habitat.
Moorhen	<i>Gallinula chloropus</i>	S1	Waterbodies provide suitable nesting and foraging habitat.
Meadow Pipit	<i>Anthus pratensis</i>	AL, S1	Woodland, trees and scrub provide foraging opportunities. Grassland provides suitable nesting habitat.
Oystercatcher	<i>Haematopus ostralegus</i>	AL, S1	Grassland, waterbodies and bare ground provide suitable nesting and foraging opportunities.

⁸ S1 – Schedule 1 Wildlife and Countryside Act, A1 – Annex 1 EU Birds Directive, RL - Birds of Conservation Concern 'red list', AL - Birds of Conservation Concern 'amber list', s.41- species listed under section 41 of the NERC Act as species of principal importance

Common name	Latin name	Status ⁸	Supporting Habitat
Pheasant	<i>Phasianus colchicus</i>	S1	Grassland and woodland provide suitable nesting and foraging opportunities.
Pied Wagtail	<i>Motacilla alba yarrellii</i>	S1	Grassland and waterbodies provide suitable nesting and foraging opportunities.
Rook	<i>Corvus frugilegus</i>	S1	Woodland, trees and scrub provide nesting opportunities. Grassland provides suitable foraging.
Skylark	<i>Alauda arvensis</i>	RL, s.41, S1	Grassland provide suitable nesting and foraging opportunities.
Stock Dove	<i>Columba oenas</i>	AL, S1	Grassland and woodland provide suitable foraging and nesting opportunities.
Swallow	<i>Hirundo rustica</i>	S1	Grassland, woodland and waterbodies provide suitable foraging opportunities. Possible nesting habitat on exposed cliff.
Whitethroat	<i>Sylvia communis</i>	S1	Grassland, woodland and waterbodies provide suitable nesting and foraging opportunities.
Wren	<i>Troglodytes troglodytes</i>	S1, A1	Woodland, trees and scrub provide nesting opportunities.
Willow Warbler	<i>Phylloscopus trochilus</i>	AL, S1	Woodland, trees, grassland and scrub provide nesting and foraging opportunities.

eDNA Testing

- 3.2.5 All four waterbodies surveyed for great crested newt DNA returned a negative result, indicating that great crested newts are likely to be absent from the ponds. This was supported by the absence of GCN records returned by Barnsley Biological Records Centre.

4 ECOLOGICAL EVALUATION

- 4.1.1 Protected species and species of principle importance nationally and locally are evaluated in order to identify potential adverse effects from proposed works in Table 5.
- 4.1.2 Evaluations are based on, but are not limited to, the following criteria:
- Desk study records;
 - Evidence found during the survey;
 - Presence, extent, quality and viability of supporting on-site habitat;
 - Ecological connectivity to viable off-site habitats; and
 - Perceived impacts of habitat loss/impact to individuals in relation to proposals.
- 4.1.3 Species for which adverse effects are predicted are indicated in bold text and are discussed in greater detail in the Section 5 *Discussions and Recommendations*.
- 4.1.4 Species/taxa for which potential adverse effects are not anticipated are excluded from further assessment.

Table 5: Species Evaluation				
Receptor	Desk Study Record	Status ⁹	Supporting Habitat	Potential Adverse Effects
Bats <i>Chiroptera</i>	7 records, closest being a common pipistrelle (<i>Pipistrellus pipistrellus</i>) approx. 630m north of site. Other results spread in all directions up to 2km and contain records of noctule (<i>Nyctalus noctule</i>) and soprano pipistrelle (<i>Pipistrellus pygmaeus</i>).	EPS, WCA, s.41,	No- no mature suitable trees or buildings. Foraging habitats are generally restricted to the site periphery.	No- There will be no adverse effects from the restoration, however there will be opportunities to increase foraging suitability through restoration and the inclusion of grazed pasture.
Badger <i>Meles meles</i>	3 records from BBRC, closest being approx. 1.4km north-east of site SE209051 9 records from SYBG, closest being approx. 70m west from site SE19060 04275, plus an artificial sett 115m north	BA	Yes- Woodland present in south of site suitable for foraging and sett creation. Improved grassland also presents opportunity for foraging.	No- no evidence of badger activity recorded during Phase 1 survey and woodland expected to be undisturbed during restoration. Opportunities for improvements for this species should be considered in the restoration, with reversion to grazed pasture being beneficial to Badger.
Brown hare <i>Lepus europaeus</i>	37 records, closest being approx. 260m north from site, within Whitley Edge LWS, SE195047. All others are spread evenly in all directions, except south-east.	s.41	Yes- Grassland on site suitable for breeding and foraging. Moorland within surrounding area.	No – grassland habitats will be enhanced and this species will benefit from the restoration proposals.
European hedgehog <i>Erinaceus europaeus</i>	5 records, all being approx. 1.5km from site, north-west, west, south-west and south-east.	s.41	Yes- Woodland present in south of site suitable for foraging.	No- woodland expected to be undisturbed during restoration.

⁹ EPS – European Protected Species, WCA – Wildlife and Countryside Act, A1 – Annex 1 (Birds Directive), BA – Protection of Badgers Act, s.41- species listed under section 41 of the NERC Act as species of principal importance, BoCC – Birds of Conservation Concern

Table 5: Species Evaluation				
Receptor	Desk Study Record	Status ⁹	Supporting Habitat	Potential Adverse Effects
Otter <i>Lutra lutra</i>	1 record, 2km north from site at Broadstone Reservoir, SE191064.	EPS, WCA, s.41	No- no suitable waterbodies.	No
Common toad <i>Bufo bufo</i>	3 records, closest being approx. 900m west of site.	s.41	Yes- waterbodies present	No- Suitable habitat within woodland which is expected to be undisturbed during restoration.
Birds	1515 records covering 77 species. Including: Barn Owl (<i>Tyto alba</i>), Bullfinch (<i>Pyrrhula pyrrhula</i>), Cuckoo (<i>Cuculus canorus</i>), Curlew (<i>Numenius arquata</i>), Dotterel (<i>Charadrius morinellus</i>), Grey Partridge (<i>Perdix perdix</i>), Lapwing (<i>Vanellus vanellus</i>), Little Ringed Plover (<i>Charadrius dubius</i>), Oystercatcher (<i>Haematopus ostralegus</i>), Red Grouse (<i>Lagopus lagopus scotica</i>), Reed Bunting (<i>Emberiza schoeniclus</i>), Skylark (<i>Alauda arvensis</i>), Willow tit (<i>Poecile montanus</i>), Yellowhammer (<i>Emberiza citrinella</i>)	s.41, WCA BoCC	Yes- Breeding habitat present for wading birds such as oystercatcher, curlew and lapwing in the form of bare, open areas. Woodland in the south of site and grassland areas could also support range of species, as described in Table 4.	Breeding birds may be subject to adverse effects in the absence of mitigation (avoidance of the breeding season during vegetation clearance)

5 DISCUSSION AND RECOMMENDATIONS

5.1.1 The following designated sites, habitats and species (receptors) have been evaluated as being subject to potential adverse effects:

- Whitley Edge LWS;
- Badger; and
- Nesting birds (in particular, ground nesting birds such as oystercatcher)

5.1.2 The nature of potential effects, requirements for further surveys, and proposed mitigation/compensation are discussed below for each of the identified potential sensitive receptors.

Whitley Edge LWS

5.1.3 As Whitley Edge is designated partly for its populations of breeding birds, particularly ground-nesting species, the restoration of the application site should seek to enhance this feature. It is recommended that the restoration works are undertaken outside of the early breeding season when any disturbance would be of particular concern i.e. the period March to May inclusive should be avoided.

5.1.4 Restoration proposals which favour the creation of an open (lightly grazed) grassland habitat which incorporates wetter areas and perhaps some standing water would be of great benefit to the breeding wading bird population supported by the LWS. Passerines such as skylark would also benefit from the creation of a new meadow type habitat.

5.1.5 It is recommended that the habitat enhancement proposals are worked up in the form of a Habitat Management Plan which could be incorporated within the Restoration plan proposals.

Nesting Birds

5.1.6 Due to the presence of ground nesting bird species observed on site during the BBS (inc. oystercatcher, skylark and meadow pipit) and records within the wider area (inc. curlew and lapwing), it is recommended that development works requiring the removal of vegetation are undertaken outside of the usual bird breeding season (normally taken to be March – August inclusive). If such timescales cannot be accommodated, it is recommended that a check for the presence of active nests, and nesting birds should be undertaken by a suitably qualified ecologist prior to the

commencement of works. Any active nests should be identified and protected subject to the relevant legal provisions until the nesting attempt is complete.

Badger

- 5.1.7 No setts were recorded during the Extended Phase I Habitat Survey, however a number of prints were observed in fresh mud towards the northern end of the application site. This suggests that badgers utilise the site and hence setts may be present in the woodland habitats in the vicinity. Accordingly, a check for the presence of active badger setts would be recommended prior to the onset of any works which require the clearance of woodland or scrub habitats. In the event that entrance holes with a diameter exceeding 125mm are present, these should be checked by a suitably qualified ecologist to confirm their status. A licence may be required to facilitate the closure of setts.

6 ECOLOGICAL ENHANCEMENTS

- 6.1.1 The preliminary Breeding Birds Survey did not record the presence of curlew on/adjacent to the site, however this may be due to the survey being undertaken towards the end of the season for this species. Nevertheless, other species of wading bird typically associated with moorland fringe, such as lapwing and oystercatcher were noted.
- 6.1.2 Curlew populations in particular have reduced significantly in recent years, with changes in habitat management practices in their upland breeding grounds being implicated in this. It would therefore be of very significant conservation benefit to design the restoration proposals with the breeding habitat requirements of curlew, in particular; in mind. Generic advice on habitat management for curlew is provided by the RSPB, such resources should be consulted when the restoration plans are being considered¹⁰.
- 6.1.3 It is therefore recommended that the restoration of the site includes the following features which would be of benefit to wading birds:
- The provision of an open, lightly (extensively) grazed grassland habitat across the majority of the site which is contiguous with the pastoral habitats elsewhere in the locality;
 - The provision of flower rich meadow grassland on drier parts of the site, to be managed by late season cutting for hay;
 - The provision of a heathland edge to the restored area especially to the north and west where it abuts existing heathland/moorland habitats;
 - The provision of areas of wet/damp grassland and marshy grassland habitats by deliberately impeded drainage;
 - The retention of long views from the site interior by keeping hedgerow plantings to the absolute minimum required.
- 6.1.4 Monitoring of the wading bird population via three surveys during the first five years following restoration should be considered so that the management operations can be reviewed and modified if necessary.

¹⁰ <https://www.rspb.org.uk/our-work/conservation/conservation-and-sustainability/farming/advice/helping-species/curlew/>

- 6.1.5 Other bird species on site would benefit from the above provisions although the retention/encouragement of scattered areas of gorse scrub would provide a nesting resource for linnet *Linaria cannabina*, yellowhammer *Emberiza citrinella* and other passerine species associated with upland margins.
- 6.1.6 In terms of other species, lightly grazed grassland and meadow grassland would contribute towards the habitat requirements of brown hare, which is abundant locally. Badger would also benefit from an increase in foraging resources and the habitats in general terms are anticipated to support an increase in small mammals which in turn would provide foraging resource for owls and raptors.
- 6.1.7 It is recommended that the ecological provisions are worked up into a Habitat Management Plan, to accompany or be incorporated with the restoration proposals.

7 REFERENCES

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Appendix 1

Legislation and Policy Summary

Appendix 1 – Legislation and Policy Summary

Legislation for Habitats/Sites

Designated Site/Habitat	Status
Ramsar Sites	Ramsar Sites are wetlands of international importance designated following The Ramsar Convention. RAMSAR sites have the same level of protection as SSSIs under the Wildlife and Countryside Act 1981 (as amended).
SPA (Special Protection Areas)	SPAs are classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC), the Birds Directive. They are they seek to protect the habitats of rare and vulnerable birds, listed in Annex I of the Birds Directive, and for regularly occurring migratory species. The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 implement the Birds Directive in the UK.
SAC (Special Areas for Conservation)	SACs are strictly protected areas which represent typical European Union of habitats and (non-bird) species listed in Annexes I and II of the EC Habitats Directive. The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 implement the Habitats Directive in the UK.
SSSI (Sites of Special Scientific Interest)	SSSIs protect the best examples of the UK's flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were renotified under the Wildlife and Countryside Act 1981 (as amended). Modified provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000.
NNR (National Nature Reserves)	NNRs are examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. NNRs are declared by the statutory country conservation agencies under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended). Legal protection of NNRs is provided under The Wildlife and Countryside Act 1981 (as amended).
Hedgerows	All hedgerows are protected by the Hedgerows Regulations 1997, under which it is an offence to remove or destroy certain

Designated Site/Habitat	Status
	hedgerows without planning consent or permission from the Local Planning Authority. These regulations do not apply to any hedgerow within the curtilage of, or marking the boundary of the curtilage of, a dwelling house.
LNR (Local Nature Reserves)	Designated by the National Parks and Access to the Countryside Act 1949, LNRs may be declared for nature conservation by local authorities after consultation with the relevant statutory nature conservation agency. Legal protection of LNRs is provided under The Wildlife and Countryside Act 1981 (as amended).

Legislation for Species

Species	Legal Status
<i>European Legislation</i>	
Creeping Marshwort, Early Gentian, Fen Orchid, Floating-leaved Water Plantain, Killaney Fern, Lady's Slipper, Shore Dock, Slender Naiad, Yellow Marsh Saxifrage	Under the Conservation of Habitats and Species Regulations 2010 (and as amended), it is illegal to deliberately pick, collect, uproot or destroy any such species.
Bats, Dormouse, Otter, Wild Cat, Great Crested Newt, Natterjack Toad, Sand Lizard, Smooth Snake, Large Blue Butterfly	These animals and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2010 (and as amended), which makes it illegal to: • Deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs; • Deliberately disturb¹¹ such an animal; and • Damage or destroy a breeding site or resting place of such an animal. European Protected Species (EPS) licenses can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation

¹¹ Under the Conservation Regulations, disturbance of protected animals includes in particular any disturbance which is likely to: (i) impair their ability to survive, breed or reproduce, or to rear or nurture their young or to hibernate or migrate; (ii) significantly affect the local distribution or abundance of the species in question.

Species	Legal Status
	Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed, namely: • The development is for reasons of overriding public interest; • There is no satisfactory alternative; and • The favourable conservation status of the species concerned will be maintained and/or enhanced. Under Regulation 9(5) of the Conservation Regulations, Planning Authorities have a duty to 'have regard to the requirements of the EC Habitats Directive' i.e. LPA's must consider the above 3 'tests' when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations.
<i>Domestic (UK) Legislations</i>	
Bats, Dormouse, Great Crested Newt, Heath Fritillary, High Brown Fritillary, Large Blue, Marsh Fritillary, Natterjack Toad, Pine Martin, Otter, Red Squirrel, Sand Lizard, Smooth Snake, Swallowtail, Water Vole, Wildcat	These animals receive full protection under the Wildlife and Countryside Act 1981 (and as amended), which makes it illegal (subject to certain exceptions) to: • Intentionally kill, injure or take any such animal; • Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any such animal; and • Intentionally or recklessly disturb such animals while they occupy a place used for shelter or protection.
Adder, Common Lizard, Grass Snake, Slow Worm, White-clawed Crayfish	These animals receive partial protection under The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which provide protection against intentional killing or injury of any such animal.
Nesting Birds	All wild birds (as defined by the act) are protected under the Wildlife and Countryside Act 1981 (and as amended), which makes it illegal (subject to exceptions) to: • Intentionally kill, injure or take any wild bird; • Take, damage or destroy the nest (whilst being built or in use) or eggs of any wild bird.
WCA Schedule 1 listed Birds	Additional protection is provided to birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (and as amended). In

Species	Legal Status
	addition to the offences detailed above relating to all wild birds, it is illegal to: Intentionally or recklessly disturb any bird listed on Schedule 1, or their dependent young while nesting.
Badgers	The Protection of Badgers Act 1992 makes it illegal to wilfully kill or injure a Badger, or attempt to do so and to intentionally or recklessly interfere with a Badger sett. This includes: - damaging or destroying an active sett; - obstructing access to a sett; and - disturbing a Badger while it is occupying a sett. Licences can be granted to permit sett closure and/or disturbance between July and November inclusive (i.e. outside the sow pregnancy/birth period).
Wild Mammals	The Wild Mammals (Protection) Act 1996 provides legal protection to all wild mammals (as defined by the act) against the following actions: mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, drown, crush, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.
<i>Invasive Species</i>	
WCA Schedule 9 listed animals (Part 1) and plants (part 2)	Certain species of plants and animals that do not naturally occur in Great Britain have become established in the wild and represent a threat to the natural fauna and flora. Section 14 of the Wildlife & Countryside Act prohibits the release of any animal species that are: <i>“not ordinarily resident in and is not a regular visitor to Great Britain in a wild state”</i>

Policy Summary

Section 40 of the Natural Environment and Rural Communities (NERC) Act imposes a legal duty on Planning Authorities to ‘have regard’ to the conservation of biodiversity when considering planning applications.

Section 41 of the NERC Act requires the Secretary of State to publish a list of species and habitats of principal importance for conserving biodiversity in the UK. Such Biodiversity Action Plan (BAP) Habitats and Species (2007) do not offer the species any specific protection but help to highlight the species importance at a national level. This list is used by Local Planning Authorities to identify the species and habitats that should be afforded priority when applying the requirements of the National Planning Policy Framework (NPPF).

The NPPF underpins the Government's planning policies for England and how these are to be applied. The central theme of the NPPF is a presumption in favour of sustainable development. This presumption does not apply where development requiring Appropriate Assessment under the Birds or Habitats Directives is being considered, planned or determined.

The NPPF states:

'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 (SSSI) likely to have an adverse effect on a SSSI (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 SSSIs;*
- 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;*
- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and*
- the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites; and sites identified, or*

required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'

The NPPF requires the Planning Authority to have a responsibility to promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan. In addition, the planning system should contribute to and enhance the natural and local environment by 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.

DRAWINGS



KEY

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Neutral grassland - unimproved
- I Improved grassland
- Other tall herb and fern - ruderal
- Waterbody
- S Spoil
- Bare ground

Notes:

Boundaries are indicative.

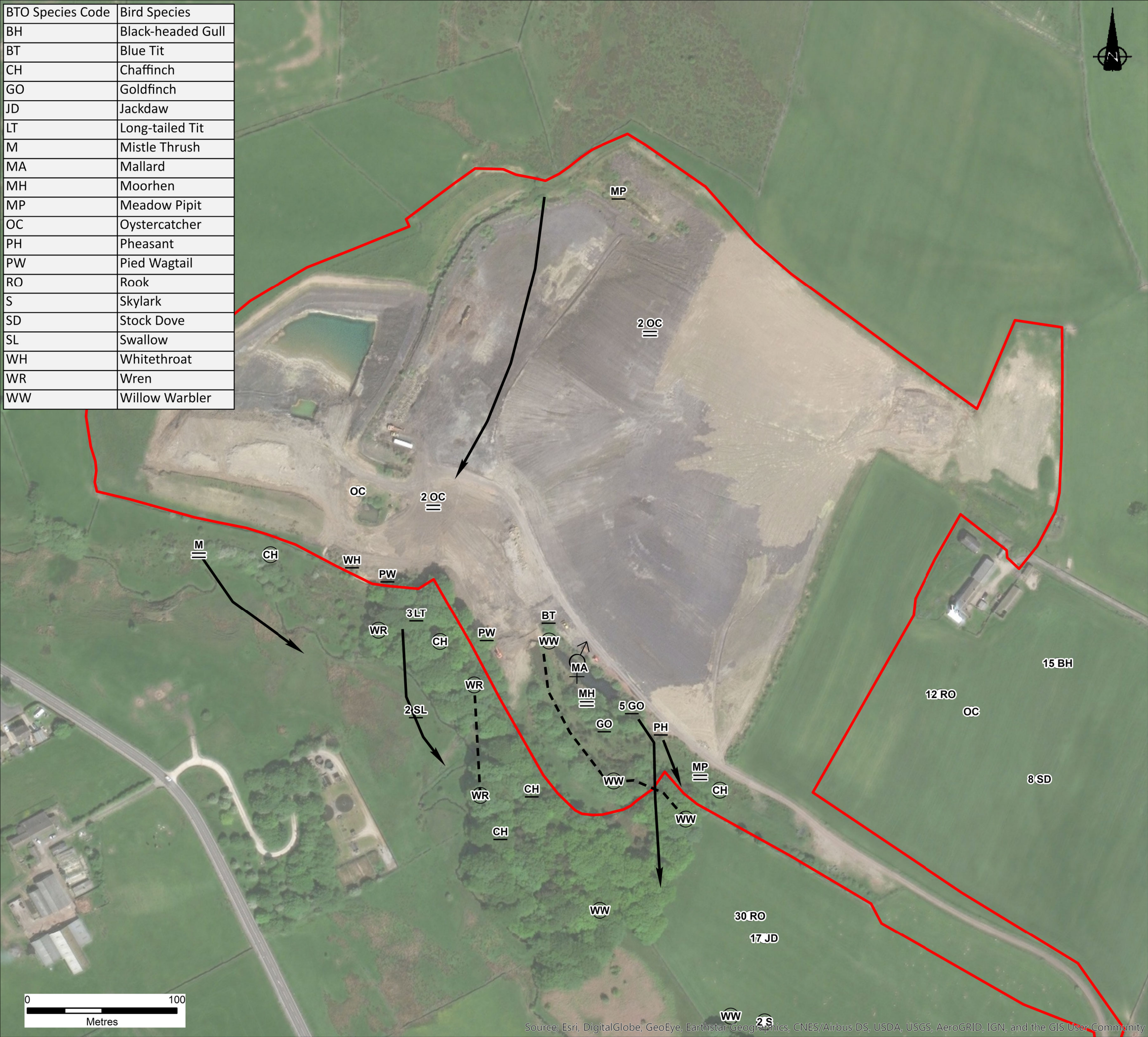
Aerial imagery shown for context purposes only.

Classifications in accordance with Handbook for Phase 1 Habitat Survey - A technique for Environmental Audit (JNCC 2010)

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
PICKFORD CONTRACTING LTD					
PROJECT					
MIDDLECLIFFE QUARRY, PENISTONE					
DRAWING TITLE					
EXTENDED PHASE 1 HABITAT RESULTS PLAN					
DRG No.		SH12283/003		REV A	
DRG SIZE A3		SCALE 1:2,500		DATE 01/07/2019	
DRAWN BY SW		CHECKED BY EC		APPROVED BY TP	
 NEWCASTLE UPON TYNE TEL 0191 232 0943 WWW.WARDELL-ARMSTRONG.COM ☐ BIRMINGHAM ☐ BOLTON ☐ CARDIFF ☐ CARLISLE ☐ EDINBURGH ☐ GLASGOW ☐ LONDON ☐ MANCHESTER ☐ SHEFFIELD ☐ STOKE ON TRENT					

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

BTO Species Code	Bird Species
BH	Black-headed Gull
BT	Blue Tit
CH	Chaffinch
GO	Goldfinch
JD	Jackdaw
LT	Long-tailed Tit
M	Mistle Thrush
MA	Mallard
MH	Moorhen
MP	Meadow Pipit
OC	Oystercatcher
PH	Pheasant
PW	Pied Wagtail
RO	Rook
S	Skylark
SD	Stock Dove
SL	Swallow
WH	Whitethroat
WR	Wren
WW	Willow Warbler



KEY

- Site Boundary
- Pair of birds
- Bird(s) repeatedly calling
- Sighting of Bird(s)
- Calling bird(s)
- Singing bird(s)
- Bird(s) in flight
- Two birds in song at the same time

Notes:

Boundaries are indicative.
Aerial imagery shown for context purposes only.

REVISION	DETAILS				DATE	DRAWN	CHKD	APPD
CLIENT								
PICKFORD CONTRACTING LTD								
PROJECT								
MIDDLECLIFFE QUARRY, PENISTONE								
DRAWING TITLE								
BREEDING BIRD SURVEY RESULTS								
DRG No.		SH12283/004				REV		
						A		
DRG SIZE		A3		SCALE		DATE		
				1:2,500		01/07/2019		
DRAWN BY		SW		CHECKED BY		APPROVED BY		
				EC		TP		
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