Former Marchon Works, High Road, Whitehaven CA28 9LT

ECOLOGICAL SURVEY AND ASSESSMENT

October 2023

ERAP (Consultant Ecologists) Ltd ref: 2021-138

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Document Control

Survey Type:	Surveyors[1]	Survey Date(s)
Phase 1 Habitat Survey	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM Principal Ecologist	19th March 2019 6th October 2021 30th September 2023
Wintering and passage migrant bird surveys	Seumus Eaves MCIEEM	1st October 2018 to 28th March 2019 Refer to the separate Technical Appendix *Results of Wintering Bird Surveys 2018 to 2019*
Breeding bird surveys	Seumus Eaves MCIEEM	12th April 2019 7th June 2019 14th May 2021 7th June 2021 22nd June 2021
Reptile presence / absence surveys	Aidan Pickering Marie Pickering	Refer to the separate Technical Appendix *Reptile Presence / Absence Survey 2021 and Mitigation Strategy*
Reporting	**Personnel**	**Date**
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Revised and issued	Victoria Burrows	2nd October 2023
Report issued to	Persimmon Homes	
Version Number	1	

[1] *Licence reference numbers*
Bats
Victoria Burrows, Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-10390-CLS-CLS
Great crested newt
Victoria Burrows Natural England Class Survey Licence (Level 1) Registration Number 2015-16651-CLS-CLS

SUMMARY

Introduction and Scope

i. This ecological survey and assessment has been prepared for the land at the former Marchon Works off High Road, Whitehaven. The assessment was requested to inform the following planning application: "*Hybrid application seeking full planning permission for the erection of 139 residential dwellings (C3), new vehicular accesses off high road, public open space and ancillary infrastructure and outline planning permission for residential development units, retail and ancillary infrastructure with all matters reserved other than access*."

ii. The 28.52 hectares site lies to the south of Whitehaven and is an irregularly shaped area occupying land between High Road to the east and St. Bee's Coast to the west. The site encompasses an arable field, a field of improved grassland, an area which previously supported a railway track used for the transport of minerals (the former 'mineral line') and part of the former Marchon works; these areas are now characterised by neutral grassland, sparse ruderal herbs and hard-standing.

iii. This report presents the results of a desktop study and data search, an extended Phase 1 Habitat Survey and surveys for relevant protected species and other wildlife carried out between 2018 and 2023. The scope of survey undertaken is appropriate to identify potential ecological constraints and has facilitated the application of the mitigation hierarchy to inform the site proposals and the Landscape Strategy. The collated baseline surveys have informed the scope of recommendations and actions to be applied to secure maximised protection of existing features of ecological interest (particularly the off-site designated sites for nature conservation). The surveys have additionally informed the recommendations for the creation of compensatory and complementary habitats and opportunities for biodiversity as part of the development proposals.

Results of Survey and Assessment

iv. The site is located within 668 metres of the site to the Solway Firth Special Protection Area (SPA). The results of the wintering and passage migrant bird surveys, and the habitats and conditions at the site, are such that it is considered that habitats used by the qualifying species of the SPA will not be directly affected by the proposals. In addition, in the presence of a Landscape Strategy that buffers the coastal area and a Construction Environment Management Plan (CEMP) that describes the actions to be implemented to reduce the risk of construction-related disturbance / incidences on the SPA, it can be concluded that the project will have no adverse effect on the integrity and conservation objectives of the relevant identified European designated sites for nature conservation.

v. 0.0468 hectares of the St. Bee's Head Site of Special Scientific Interest (SSSI) and St. Bee's Head Site of Invertebrate Significance lies within the site boundary (at the south-western corner of the arable field at 'Phase 1'). This area lies outside the area of the site proposed to be developed and lies within the area of public open space allocated to be enhanced to coastal wildflower meadow and to provide habitats for use by reptiles and other fauna. It is considered that the proposals will not result in a direct adverse effect on the SSSI and it's features of interest.

vi. This assessment recognises that an increase in the local population as a result of the construction of residential properties in proximity to the SSSI may increase the footfall / use of the SSSI. Increased recreational pressure can have an adverse effect by damaging vegetation through trampling and erosion and eutrophication arising from dog fouling of the naturally infertile soils at the cliffs. This report describes the measures that are inherent to the proposals (and the additional mitigation to be implemented) to achieve the protection of the Priority Habitat and the ecological features for which St Bees Head SSSI has been designated.

vii. Owing to the distance between the site and any other statutory and non-statutory designated sites for nature conservation within the wider area, direct and indirect effects on other designated sites are reasonably discounted.

viii. Approximately 13.6% of the site is characteristic of Open Mosaic Habitat on Previously Developed Land Priority Habitat (OMH) and an area of 0.0336 (0.1%) of Lowland Heathland Priority Habitat is

present. No other Priority Habitats have been identified at the site. In terms of each habitat's importance in a geographical context, the areas of OMH and lowland heathland are of 'local authority-wide' importance. The neutral grassland is assessed to be of 'local' value, as the grassland is not species-rich, but will contribute to the diversity of habitats present in the local area. The remaining habitats are of 'site' value or less in terms of their intrinsic value and plant species diversity but contribute to the overall area of habitat used within the site by protected species (including reptiles).

ix. As detailed in **Section 5.2** and on the Landscape Strategy, all efforts have been made to ensure that the mitigation hierarchy is applied during the design of the scheme. The heathland Priority Habitat will be retained and protected as part of the proposals.

x. The proposals (including the mandatory remediation operations) will however result in a loss of OMH habitat assessed to be of 'local authority-wide' importance. It is proposed to minimise these impacts via the retention of the habitats (and suitable infertile substrates) at the western margin of the former Marchon Works where development is restricted for physical reasons. In addition, whilst it is recognised that the re-creation of OMH is difficult, the proposals intend to achieve a mosaic of habitats that are complementary to the local area, including retained heathland, coastal grassland, neutral (wildflower) grassland, patches of bare ground, bunds and ditches and scattered scrub. With the appropriate aftercare and management (to be secured by a Landscape and Ecological Management Plan), the proposals aim to provide a similar ecological function to the OMH present at the site for both colonisation by plant species and for use by fauna such as reptiles, common toad and nesting birds.

xi. Japanese Rose, an invasive plant species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), is present at the site. The proposals provide a mechanism to achieve the control / eradication of Japanese Rose as part of the site preparation works; this is considered to be a benefit of the proposals as control of this species on the site will minimise the risk of spread into the surrounding Priority Habitat and SSSI.

xii. Habitats at the site are suitable for use by foraging bats. In the presence of appropriate mitigation, including the appropriate use of lighting and habitat creation, adverse effects on conservation status of foraging bats can be avoided. It is intended that the site will continue to provide areas of habitats for the attraction of foraging bats and enhanced opportunities for roosting bats; recommendations are presented at **Section 5.5**.

xiii. Habitats at the site are used by a variety of nesting birds, including four Priority Species (skylark, linnet, song thrush and dunnock). The habitat creation and Landscape Strategy aim to conserve opportunities for these Priority Species and other bird species at the site over the long-term, however it is recognised that the displacement of nesting skylark from the site is a likely impact of the proposals.

xiv. The construction of a residential development secures an opportunity to provide habitat for other Priority Species within the built environment such as swift (a red-listed species), and house sparrow (a Priority Species and red-listed species) as described in **Section 5.5**.

xv. Slow-worm and common lizard are present at the site. A reptile mitigation strategy is presented at Section 6.0 of the separate technical appendix entitled *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022).

xvi. Appropriate survey effort and / or assessment, in accordance with standard guidance, has been carried out to reasonably discount adverse effects on other relevant protected species namely badger, roosting bats and great crested newt. No further surveys for protected species are required to inform the planning application.

Evaluation and Recommendations

xvii. The guidance outlined in **Section 5.0** outlines the mandatory measures and ecological recommendations to be applied to address and mitigate the identified effects of the proposals, ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF), local planning policy and best practice.

Conclusion

xviii. In the presence of the mitigation measures and habitat creation / landscape planting and a commitment to long-term habitat management, it is considered that the proposed residential development can be achieved in compliance with the NPPF, local planning policy and best practice.

xix. The site proposals, via the implementation of the recommendations in this ecological assessment and by the Landscape Strategy, will ensure the protection of the off-site designated sites for nature conservation, enhancement of the area of SSSI within the site, retain an area of Priority Habitat within the site, create compensatory habitat where losses of Priority Habitat are unavoidable, and mitigate for the protected species and Priority Species associated with the site.

xx. The separate *Assessment of Biodiversity Net Gain* (ERAP (Consultant Ecologists) Ltd, 2023) and BNG Metric demonstrate that the proposals will secure significant net gains for biodiversity.

1.0 INTRODUCTION

1.1 Background and Rationale

1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Persimmon Homes Lancashire to carry out an ecological assessment of the former Marchon Works off High Road, Whitehaven CA28 9LT (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is NX 9649 1615. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).

1.1.2 The assessment was requested to inform the following planning application:

"Hybrid application seeking full planning permission for the erection of 139 residential dwellings (C3), new vehicular accesses off high road, public open space and ancillary infrastructure and outline planning permission for residential development units, retail and ancillary infrastructure with all matters reserved other than access."

1.1.3 The planning application comprises two phases (refer to **Figure 2**), which have been used in the description of the site throughout this report:

a. 'Phase 1' (14.08 hectares), the northern portion of the site which comprises fields of arable farmland and improved grassland in agricultural production and the section of mineral line with retaining walls; and

b. 'Phase 2' (14.44 hectares) at the southern portion of the site that comprises part of the site of the former Marchon Works off High Road.

1.2 Scope of Works

1.2.1 The scope of ecological works undertaken between October 2018 and September 2023 comprised:

a. A desktop study and data search for known ecological information at the site and the local area;

b. An Extended Phase 1 Habitat Survey and assessment;

c. Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);

d. Survey and assessment of all habitats for relevant statutorily protected species[1] and other wildlife including badger (*Meles meles*), great crested newt (*Triturus cristatus*) and invertebrates;

e. A reptile presence and absence survey, as reported in the separate technical appendix entitled *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022);

f. A licensed daylight bat survey and assessment of the stone bridge (abutment and underarch) within the site, and all trees;

g. Wintering and passage migrant bird surveys, as reported in the separate technical appendix entitled *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023);

[1] In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance (for example) there are no freshwater water bodies or water courses within or adjacent to the site; there has been no requirement to consider water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) using freshwater habitats as part of this assessment.

h. Breeding bird surveys;

i. The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and

j. The identification of any further surveys or precautionary actions that may be required to inform a planning application and prior to the commencement of any construction activities.

1.2.2 The scope of ecological survey and assessment has informed an assessment of biodiversity net gain (BNG) using *The Biodiversity Metric 4.0 Calculation Tool (JP039)* (Natural England, 2023). The results of the assessment are presented in Former *Marchon Works, High Road, Whitehaven, CA28 9LT. Assessment of Biodiversity Net Gain* (ERAP (Consultant Ecologists) Ltd, 2023) and a completed Microsoft Excel spreadsheet assessment are presented as separate documents, entitled '*ERAP Ltd 2021-138 Biodiversity Metric 4.0 Calculation Tool Marchon Works 02.10.23"*.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

2.1.1 The following sources of information and ecological records were consulted:

a. MAGiC maps: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. Cumbria Biodiversity Data Centre;

c. Cumbria Biodiversity Action Plan (BAP);

d. The Extended Phase 1 Habitat Survey report previously prepared for the site, namely *Marchon Chemical Works Site, Whitehaven. Extended Phase 1 Habitat Survey* (BSG Ecology, 2017); and

e. The suite of ecological surveys submitted to inform a planning application for the development of a new underground metallurgical coal mine on land to the south of the site (Cumbria County Council reference 4/17/9007)[2]. The most recent report is *Cumbria Metallurgical Coal Project. Ecology Survey Update Report* (BSG Ecology, August 2021).

2.1.2 Information presented in the following consultation responses to the planning application was also taken into consideration:

a. Natural England letter dated 3rd December 2021; and

b. RSPB letter dated 26th November 2021.

2.2 Vegetation and Habitats

2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MCIEEM on 19th March 2019. The weather was dry with sunny intervals, a light breeze (Beaufort scale 2) and an air temperature of 9°C at 9am.

2.2.2 The Phase 1 Habitat Survey was updated by Victoria Burrows on 19th October 2021. The weather conditions were dry and sunny with a light air (Beaufort scale 1) and an air temperature of 10°C.

2.2.3 An updated walkover survey, UKHab Survey and collation of information to inform the Condition Assessments of the assessment of BNG was carried out on 30th September 2023. The weather conditions were dry and overcast with a light breeze (Beaufort scale 2) and an air temperature of 14°C.

2.2.4 A habitat and vegetation map was prepared for the site and the immediate surrounding area and is appended at **Figure 2**. The mapping is based on the Joint Nature Conservation Committee Phase 1

[2] Reports are currently available at https://legacy.cumberland.gov.uk/planning-environment/wcm.asp

Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.5 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.

2.2.6 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.

2.2.7 Habitats within the site were assessed (in 2023) in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales of minimum mappable unit (MMU): fine scale (25m^2 or 5 metres length) and large scale (400m^2 or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m^2 or 5 metres length MMU is appropriate.

2.2.8 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3rd Edition* (Stace, 2010).

2.2.9 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Badger

2.3.1 The survey area for badger covered the site (as annotated on **Figure 2**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens were excluded from the survey.

2.3.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2023).

2.3.3 The following signs of badger activity were searched for:

a. Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a ‘D’ on its side;

b. Large spoil heaps outside sett entrances;

c. Bedding outside sett entrances;

d. Badger footprints;

e. Badger paths;

f. Latrines;

g. Badger hairs on fences or bushes;

h. Scratching posts; and

i. Signs of digging for food.

2.3.4 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

2.4 Daylight Licensed Bat Survey and Assessment

Survey Personnel and Survey Guidelines

2.4.1 The habitats and features at the site were assessed for their suitability to support foraging, commuting and roosting bats by Victoria Burrows, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-10390-CLS-CLS. The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

2.4.2 The survey and assessment were carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers' Manual 3rd Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).

Habitat Assessment for Commuting / Foraging Bats

2.4.3 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),* (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented below.

Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Trees

2.4.4 A preliminary assessment of the trees within the site was conducted from the ground level to assess their suitability for use by roosting bats, and to inform whether further surveys or precautionary measures were required.

2.4.5 Each tree was searched for the presence of the following features:

Woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed platey bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy (Hedera helix) with stem diameters in excess of 50mm and bat, bird or dormouse (Muscardinus avellanarius) boxes.

2.4.6 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2nd Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).

2.4.7 The requirement for further presence / absence surveys at each tree was then considered.

Stone Bridge Abutment and Underarch

2.4.8 The stone walls and underarch at the area which previously supported a railway track used for the transport of minerals (the 'mineral line') were examined and searched for cracks, crevices and features with suitability for use by roosting bats. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were also carried out.

Equipment

2.4.9 A list of equipment used is detailed below:

Table 2.2: Survey Equipment Used During Daylight Bat Survey

Ladders
LED Lenser P14 torch
Canon Ixus digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-300

2.5 Wintering and Passage Migrant Bird Surveys

2.5.1 Refer to the separate technical appendix *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023).

2.6 Breeding Bird Surveys

Habitat Assessment

2.6.1 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

Breeding Bird Surveys

2.6.2 All breeding bird surveys were carried out by Seumus Eaves MCIEEM on the dates and at the times detailed at **Table 2.3**.

Table 2.3: Breeding Bird Survey Dates and Weather Conditions

Date	Period of Observation	Weather Conditions
12th April 2019	06:35 to 08:40	Dry and clear with a light air (Beaufort scale 1) and good visibility
7th June 2019	06:25 to 08:25	Dry and clear with a light air (Beaufort scale 1) and good visibility
14th May 2021	06:15 to 08:30	Overcast with a light air (Beaufort scale 1) and good visibility
7th June 2021	06:05 to 08:05	Overcast with sunny intervals, a light air (Beaufort scale 1) and good visibility
22nd June 2021	06:15 to 08:15	Overcast with sunny intervals, a light air (Beaufort scale 1) and good visibility

2.6.3 Binoculars (Zeiss 10x42 T*FL) and a telescope (Kowa TSN884 25-60x wide zoom) were used during the surveys. Transects were walked through the site and vantage points were used to make observations of the open areas of the site.

2.6.4 All visible and audible birds were recorded during the site survey following the standard recording methodology and codes of the *British Trust for Ornithology (BTO) Common Birds Census* (Marchant, 1983).

2.6.5 For the purposes of this assessment birds were counted as 'breeders' within the site (or close by) if they were recorded in territorial song, observed as a family, carrying food / nest material, in an actual nest and / or repeatedly giving alarm calls thought to have a strong territorial significance. Other birds have been categorised as 'non-breeders' if they were observed flying over the site only, were not engaged in any behaviours indicative of breeding and / or the habitat is not considered to be suitable breeding habitat for that species.

2.7 Great Crested Newt and Other Amphibians

Desktop Search for Ponds

2.7.1 In accordance with *Great crested newts: advice for making planning decisions* (Natural England, 2022) all ponds within an unobstructed 500 metres of a site should be considered for their suitability to support breeding great crested newts. The potential of the proposed development to impact upon any great crested newt population(s) whose breeding ponds are within 500 metres must be considered.

2.7.2 The search of habitats in the wider area up to a distance of 500 metres from the site boundary revealed the presence of two ponds, as detailed at **Table 2.4**.

Table 2.4: Ponds within 500 metres of the Site

Pond Reference	OS Grid Reference	Distance from Site Boundary	Location (refer to Figure 1)
1	NX 9659 1549	373 metres	Ephemeral pool to the south of the site
2	NX 9664 1534	509 metres	Attenuation area associated with the plant to the south of the site

Consideration of Requirement for Further Survey

2.7.3 The requirement for further survey at each pond was then assessed using the following:

a. Results of previous great crested newt and amphibian species presence / absence surveys at the ponds comprising *Land off High Road, Whitehaven. Ecological Survey and Assessment* (ERAP Ltd, 2013) and *Cumbria Metallurgical Coal Project. Ecology Survey Update Report* (BSG Ecology, August 2021);

b. Presence of dispersal barriers to great crested newt movements between ponds and the site, as detected during the walkover survey;

c. Distance of ponds from the site, and the potential influence of the proposed development of the site on any populations of great crested newt (if present at ponds), using the Natural England rapid risk assessment tool; and

d. Presence of other ponds which may form metapopulations and/or alter the influence of the site on ponds at greater distances.

Assessment of Terrestrial Habitat

2.7.4 An assessment of the terrestrial habitat within the site for great crested newts and other amphibians was conducted, as informed by the *Great Crested Newt Mitigation Guidelines* (English Nature / Natural England, 2001) and the *Great Crested Newt Conservation Handbook* (Langton, et al., 2001).

2.7.5 Habitats present within the site were assessed for their value to support foraging, sheltering and hibernating great crested newt. Favourable habitats can comprise rough grassland, scrubland, woodland and sites with underground crevices or cracks, such as mammal holes, voids in tree stumps or banks, and refugia such as rock piles or dead wood.

2.8 Reptile Presence / Absence Surveys

2.8.1 Please refer to the separate technical appendix *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022).

2.9 Other Wildlife

2.9.1 Evidence of other wildlife[3] observed whilst on site, but for which specific surveys were not made, was recorded and has been included in this report where it is considered of relevance to the planning application.

2.10 Survey and Reporting Limitations

2.10.1 Surveys were carried out within appropriate times of year for the maximum detection of the target species. The frequency of surveys over a number of years has enabled the collation of a large amount of data to inform the assessment. It is recognised that that not all the survey data were collated in 2023, however, the walkover surveys in 2021 and 2023 have confirmed that the conditions at the site have not significantly changed over the surveyed period. In accordance with guidance provided in *Advice Note on the Lifespan of Ecological Reports and Surveys* (CIEEM, April 2019), and in combination with the updated walkover surveys and consultation of survey data collated for land in the wider area, it is considered that the survey data collated in 2018/19 (wintering bird surveys), 2019 (breeding bird surveys) and 2021 (breeding bird and reptile surveys) can be relied on to inform this assessment.

2.10.2 Owing to the complex nature of the habitats on the site, particularly the mosaic of habitats on the former works portion of the site, defined habitat boundaries are not always present. The Phase 1 Habitat Survey mapping shows the most evident habitat present in each location, with variations and mosaics identified and described in the target notes. It is considered that this approach has ensured mapping is accurate, that the cover of individual habitats is not overestimated, and that specific areas of Priority Habitat, species-rich habitat and areas supporting notable plant species, where present, are identified and suitably quantified.

2.10.3 No other survey limitations were experienced.

2.10.4 All measurements within this report are approximate only, and have been either estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC and Google Earth.

2.11 Evaluation Methods

2.11.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

2.11.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities* (NERC) *Act 2006*. Where suitable, the ecological value of the habitats present has been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

2.11.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2021) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation*

[3] including Priority Species such as brown hare (*Lepus europaeus*) and hedgehog (*Erinaceus europaeus*).

of Habitats and Species (Amendment) (EU Exit) Regulations 2019, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.

2.11.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of habitats and / or species listed by the Cumbria Biodiversity Action Plan has been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

3.1.1 An area of 0.0468ha of the SSSI (and St. Bee's Head Site of Invertebrate Significance) lies within the site boundary (south-western corner of the arable field at Phase 1). This is considered further below.

3.1.2 Otherwise the site has no statutory designation for nature conservation.

3.1.3 Statutory designated sites for nature conservation within the site and within proximity to the site are described below and annotated on **Figure 1**.

St. Bee's Head Site of Special Scientific Interest (SSSI) and St. Bee's Head Site of Invertebrate Significance

3.1.4 The land immediately to the west of the northern section of the western site boundary is designated as St. Bee's Head Site of Special Scientific Interest (SSSI). An area of 0.0468ha of the SSSI (and St. Bee's Head Site of Invertebrate Significance) lies within the site boundary (the south-western corner of the arable field at Phase 1).

3.1.5 The SSSI is designated for its geological interest and for the presence of a mosaic of natural cliff-top grassland and heath. The cliff faces adjacent to the site and within the SSSI for a length of 2.6 kilometres are reported to provide the only breeding site in Cumbria for over 2000 pairs of guillemots (*Uria aalge*) along with lesser numbers of fulmar (*Fulmarus glacialis*), kittiwake (*Rissa tridactyla*), shag (*Phalacrocorax aristotelis*), puffin (*Puffinus griseus*), razorbill (*Alca torda*), cormorant (*Phalacrocorax carbo*) and herring gull (*Larus argentatus*). The cliffs are also reported to be the only breeding site on the entire coast of England for black guillemots (*Cepphus grille*). Other bird species reported to breed at the cliffs include tawny owl (*Strix aluco*), sparrowhawk (*Accipiter nisus*), peregrine (*Falco peregrinus*), raven (*Corvus corax*) and rock pipit (*Anthus petrosus petrosus*).

3.1.6 Plant species associated with sea cliffs comprise Thrift (*Armeria maritima*), Scurvy-grass (*Cochlearia officinalis*) and Sea Campion (*Silene maritima*). Sea Spleenwort (*Asplenium marinum*) is reported to occur in damp crevices and Rock Samphire (*Crithmum maritimum*) and the rare Rock Sea Lavender (*Limonium binervosum*) have also been recorded. Towards the top of the cliff, Bloody Crane's-bill (*Geranium sanguineum*), Wood Vetch (*Vicia sylvatica*) and Orpine (*Sedum telephium*) are found and Soft Shield-fern (*Polystichum setiferum*) occurs in several rocky recesses. Along the cliff top, on the dry sandy soils grassland with species such as Dyer's Greenweed (*Genista tinctoria*) alternates with patches of Western Gorse (*Ulex gallii*), Heather (*Calluna vulgaris*) and Bracken (*Pteridium aquilinum*).

Solway Firth Special Protection Area (SPA)

3.1.7 The site lies 668 metres from the nearest point of the Solway Firth Special Protection Area (SPA), which is designated for:

a. Regularly supporting a non-breeding population of European importance of red-throated diver (*Gavia stellata*), whooper swan (*Cygnus cygnus*), barnacle goose (*Branta leucopsis*), golden plover (*Pluvialis apricaria*) and bar-tailed godwit (*Limosa lapponica*);

b. Regularly supporting populations of European importance of the following migratory species pink-footed goose (*Anser brachyrhynchus*), shelduck (*Tadorna tadorna*), teal (*Anas crecca*), pintail (*Anas acuta*), shoveler (*Anas clypeata*), scaup (*Aythya marila*), common scoter (*Melanitta nigra*), goldeneye (*Bucephela clangula*), goosander (*Mergus merganser*), oystercatcher (*Haematopus ostralegus*), knot (*Calidris canutus*), ringed plover (*Charadrius hiaticula*), grey plover (*Pluvialis squatarola*), lapwing (*Vanellus vanellus*), dunlin (*Calidris alpina*), sanderling (*Calidris alba*), redshank (*Tringa totanus*), turnstone (*Arenaria interpres*), curlew (*Numenius arquata*), cormorant (*Phalacrocorax carbo*), black-headed gull (*Larus ridibundus*), common gull (*Larus canus*) and herring gull (*Larus argentatus*);

c. Regularly supporting populations of European importance of ringed plover (*Charadrius hiaticula*); and

d. Regularly supporting in excess of 20,000 water birds.

River Ehen Special Area of Conservation (SAC)

3.1.8 The River Ehen Special Area of Conservation (SAC) lies 5.5 kilometres to the south-east of the site and is designated for the presence freshwater pearl mussel (*Margaritifera margaritifera*), an Annex II species, and also for the presence of Atlantic salmon (*Salmo salar*).

Cumbria Coast Marine Conservation Zone

3.1.9 Cumbria Coast (Zones 1 and 2) Marine Conservation Zone (MCZ) is located off-shore and 70 metres from the western site boundary. The MCZs are designated for the protection of the following features:

a. High energy intertidal rock;

b. Honeycomb worm (*Sabellaria alveoata*) reefs;

c. Intertidal biogenic reefs;

d. Intertidal sand and muddy sand;

e. Intertidal underboulder communities;

f. Moderate energy infralittoral rock;

g. Peat and clay exposures; and

h. Razorbill (*Alca torda*).

Impact Risk Zones

3.1.10 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ).

3.1.11 The IRZ for land in the western portion of the site and closest to the SSSI states that Natural England must be consulted in relation to "*all planning applications"*.

3.1.12 The SSSI Impact Risk Zone at the OS grid reference at the centre of the site requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2023):

Infrastructure:	*Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.*
Wind and Solar Energy:	*Solar schemes with footprint greater than 0.5ha, all wind turbines.*
Minerals, Oil and Gas:	*Planning applications for quarries: new proposals or extensions, outside or extending outside existing settlements/urban areas affecting greenspace, farmland or semi natural habitats. Oil and gas exploration / extraction.*
Rural Non Residential:	*Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha.*

Rural Residential:	*Any residential development of 10 or more houses outside existing settlements / urban areas.*
Air Pollution:	*Any development that could cause air pollution (including: industrial / commercial processes, livestock & poultry units, slurry lagoons and digestate stores, manure stores).*
Combustion:	*All general combustion processes. Including: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.*
Waste:	*Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management.*
Composting:	*Any composting proposal. Including: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.*

3.1.13 The presence of the statutory designated sites and the SSSI IRZ are considered further at **Section 4.2**.

Non-statutory Designated Sites for Nature Conservation

3.1.14 The site has no non-statutory designation for nature conservation.

3.1.15 Land adjacent to the western boundary of the site is identified as St. Bee's Head Site of Invertebrate Significance (refer to **Figure 1**).

3.1.16 The site lies within 2 kilometres of two further locally designated sites, termed 'County Wildlife Sites' or 'CWS' in Cumbria. These sites are described at **Table 3.1**, below.

Table 3.1: Details of the CWS within a 2 kilometre Radius of the Site

Site Name	Distance from Site	Reasons for Designation
Woodhouse Quarry CWS	410 metres to the east	The site is a former quarry with geological and botanical interest.
Roska Park and Bellhouse Gill Wood CWS	1046 metres south	The site comprises ancient semi-natural woodland and semi-natural broadleaved woodland with areas of scrub, grassland and a stream.

3.1.17 The presence of the Site of Invertebrate Significance and CWS are considered further at **Section 4.2**.

Priority Habitats Inventory and Soilscape Information

3.1.18 The Priority Habitats Inventory[4] was checked via MAGiC maps. The majority of the former works portion of the site (and beyond the site boundary) is identified as Open Mosaic Habitat on Previously Developed Land Priority Habitat.

3.1.19 No other Priority Habitat is identified within the site.

3.1.20 Land to the west of the site boundary, and associated with St. Bee's Head, is identified as Maritime Cliffs and Slopes Priority Habitat on MAGiC maps.

3.1.21 In accordance with *Soilscape (England)* as presented on MAGiC Map (National Soil Resources Institute, 2005), the site supports '*freely draining slightly acid loamy soils*', and the characteristic semi-

[4] A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

natural habitats associated with the soils comprise '*neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands*'.

Protected and Notable Species

3.1.22 CBDC hold the following records of Priority Species (PS) and Local Biodiversity Action Plan (LBAP) species for the site:

a. Wall (*Lasiommata megera*): PS & LBAP. 2 records, dated 2012 and 2017 (noted as present in 2012 and with a count of 4 in 2017);

b. Small blue (*Cupido minimus*): PS & LBAP. 2 records, both dated 2017, with counts of 5 (in May) and 2 (in June);

c. Small heath (*Coenonympha pamphilus*): PS & LBAP. 2 records, dated 2012 and 2016, with a count of 1 reported for 2016 (no count is recorded for 2012); and

d. Cinnabar (*Tyria jacobaeae*): PS & LBAP. 1 record, of a count of 1 adult, dated 2008.

3.1.23 Records of protected and notable species for a 2 kilometres radius of the site are held for the wider area and are summarised below. Detail for records with locational data at a resolution finer than tetrad level (i.e. less than a 2 kilometre square) are separated from those recorded to tetrad level within the table.

Table 3.2: Records of Protected Species Within a 2 Kilometres Radius of the Site

Taxon Group	Species Name and Designations[1] and Notes
Amphibians	Common toad (*Bufo bufo*): PS & LBAP. 8 records, dated between 2012 and 2013, the closest of which is 195 metres to the south-east of the site, and from 2013.
	Common frog (*Rana temporaria*): 6 records, dated between 1997 and 2013, the closest of which is 30 metres to the south of the site, and from 2013.
	Palmate newt (*Lissotriton helveticus*): 1 record, 480 metres to the south of the site, and from 2013.
Birds – WCAs1 Species	Black redstart (*Phoenicurus ochruros*): WCAs1. 2 records, both from 2009, and recorded to tetrad level only.
	Greenshank (*Tringa nebularia*): WCAs1. 1 record, from 2008, and recorded to tetrad level only.
	Greylag goose (*Anser anser*): WCAs1. 4 records, dated between 2009 and 2010, and recorded to tetrad level only.
	Greenshank (*Tringa nebularia*): WCAs1. 1 record, from 2008, and recorded to tetrad level only.
	Long-tailed duck (*Clangula hyemalis*): WCAs1. 2 records, both from 2009, and recorded to tetrad level only.
	Purple sandpiper (*Calidris maritima*): WCAs1. 6 records, dated between 2007 and 2007, the closest of which is 1500 metres to the north of the site, and from 2007. A further 11 records (dated between 2007 and 2010) are reported to tetrad level only.
	Quail (*Coturnix coturnix*): WCAs1. 2 records, both from 2008, and recorded to tetrad level only.
	Redwing (*Turdus iliacus*): WCAs1. 1 record, 1360 metres to the north-east of the site, and from 2010. 4 further records (dated between 2009 and 2011) are recorded to tetrad level only.
	Red-throated diver (*Gavia stellata*): WCAs1. 1 record, from 2011, and recorded to tetrad level only.
Birds – sensitive species	Sensitive_species_d: 1 record, from 2009, and recorded to tetrad level only.
	Sensitive_species_l: 1 record, from 2011, and recorded to tetrad level only.
	Sensitive_species_t. 10 records, dated between 1998 and 2006, the closest of which is 680 metres to the south-east of the site, and from 2004.
	Sensitive_species_n: 6 records, dated between 1999 and 2009, the closest of which is 475 metres to the south-west of the site, and from 1999. A further 14 records (dated between 1999 and 2013) are reported to tetrad level only.
	Sensitive_species_r: 2 records, dated 2009 and 2010; the species is recorded to tetrad level only.

Taxon Group	Species Name and Designations[1] and Notes
	Sensitive_species_w: 1 record, 740 metres to the east of the site, and from 2007. A further 5 records (dated between 2009 and 2010) are reported to tetrad level only
	Sensitive_species_y: 1 record, 1360 metres to the north-east of the site, and from 2010. A further 3 records, dated between 2010 and 2012, are reported to tetrad level only.
Birds – PS and LBAP Species	**PS & LBAP** Arctic skua (*Stercorarius parasiticus*), cuckoo (*Cuculus canorus*), curlew (*Numenius arquata*), grey partridge (*Perdix perdix*), lapwing (*Vanellus vanellus*), spotted flycatcher (*Muscicapa striata*), grasshopper warbler (*Locustella naevia*), tree sparrow (*Passer montanus*), house sparrow (*Passer domesticus*), lesser redpoll (*Acanthis cabaret*), reed bunting (*Emberiza schoeniclus*), wood warbler (*Phylloscopus sibilatrix*), yellowhammer (*Emberiza citrinella*), dunnock (*Prunella modularis*), skylark (*Alauda arvensis*), song thrush (*Turdus philomelos*), starling (*Sturnus vulgaris*), bullfinch (*Pyrrhula pyrrhula*), Linnet (*Linaria cannabina*) and twite (*Linaria flavirostris*). **PS Only** Herring gull (*Larus argentatus*).
Cartilagenous Fish (Chondrichthyes)	Porbeagle shark (*Lamna nasus*): PS. 1 record, 1155 metres to the west of the site, and from 1980.
Flowering Plants	Bluebell (*Hyacinthoides non-scripta*): WCAs8. 2 records, both from 1999; the closest record is 1200 metres to the south-east of the site
Invertebrates - Butterflies	**PS & LBAP** Small blue (*Cupido minimus*), wall (*Lasiommata megera*), small heath (*Coenonympha pamphilus*), dingy skipper (*Erynnis tages*) and grayling (*Hipparchia semele*).
Invertebrates - moths	**PS & LBAP** Cinnabar (*Tyria jacobaeae*), garden tiger (*Arctia caja*), latticed heath (*Chiasmia clathrata*), ghost moth (*Hepialus humuli*) and small phoenix (*Ecliptopera silaceata*). **LBAP Only** Buff ermine (*Spilosoma lutea*).
Marine mammals	Common porpoise (*Phocoena phocoena*): EPS, WCAs5, PS & LBAP. 7 records, dated between 1991 and 2002, the closest of which is 500 metres to the north-west of the site, and from 2002.
	Bottle-nosed dolphin (*Tursiops truncatus*): EPS, WCAs5, PS & LBAP. 1 record, 2935 metres to the south-west of the site, and from 1987.
	Common seal (*Phoca vitulina*): PS & LBAP. 2 records, dated 2001 and 2014; the closest record is 155 metres to the west of the site, and from 2014.
Reptiles	Slow-worm (*Anguis fragilis*): WCAs5, PS & LBAP. 23 records, dated between 1998 and 2014, the closest of which is 120 metres to the south-west of the site, and from 1998.
	Common lizard (*Zootoca vivipara*): WCAs5, PS & LBAP. 26 records, dated between 1992 and 2014, the closest of which is 920 metres to the north of the site, and from 1999.
Terrestrial mammals	Bats (Order *Chiroptera*): EPS, WCAs5 & LBAP. 1 record, 660 metres to the north of the site, and from 2012.
	Pipistrelle bat species (*Pipistrellus* sp): EPS, WCAs5 & LBAP. 1 record, 1170 metres to the east of the site, and from 2007.
	Brown long-eared bat (*Plecotus auritus*): EPS, WCAs5, PS & LBAP. 1 record, 1785 metres to the south of the site, and from 1996.
	Common pipistrelle (*Pipistrellus pipistrellus*): EPS, WCAs5 & LBAP. 1 record, 1000 metres to the south-east of the site, and from 2001.
	Eurasian red squirrel (*Sciurus vulgaris*): WCAs5, PS & LBAP. 61 records, dated between 2002 and 2016, the closest of which is 440 metres to the north-east of the site, and from 2004.
	West European hedgehog (*Erinaceus europaeus*): PS & LBAP. 11 records, dated between 1997 and 2015, the closest of which is 55 metres to the west of the site, and from 2010.
	Eurasian badger (*Meles meles*): PBA. 1 record, over 1 kilometre from the site, and from 1999.

[1]Key to Designation Codes:
EPS = European Protected Species under *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.*
WCAs1 = Species receives full protection under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended).
WCAs5 = Species receives full protection under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended).
WCAs8 = Species receives full protection under Schedule 8 of the *Wildlife and Countryside Act 1981* (as amended).
PBA = Protection of Badger Act 1992.
PS = Priority Species listed under Section 41 of the NERC Act 2006.
LBAP = Species listed on the Cumbria Biodiversity Action Plan.

3.1.24 The presence of these protected and notable species within the wider area has been taken into account throughout this report.

3.2 Vegetation and Habitats

General Description

3.2.1 The 28.52 hectares site lies to the south of Whitehaven and is an irregularly shaped area occupying land between High Road to the east and St. Bee's Coast to the west. The site encompasses an arable field, a field of improved grassland, part of an area which previously supported a railway track used for the transport of minerals (the former 'mineral line') and part of the former Marchon works; these areas are now characterised by neutral grassland, sparse ruderal herbs and hard-standing.

3.2.2 The eastern site boundary is defined by High Road. The northern and southern site boundaries are undefined. The southern portion of the western site boundary is defined by the fenceline of the former works and the northern portion is undefined although the boundary meets the steep sloping land leading to the maritime cliffs at St. Bee's Head.

3.2.3 The Phase 1 Habitat Survey habitats at the site comprise the following:

- A2.1 Dense continuous scrub
- B2.1 Neutral grassland – unimproved
- B2.2 Neutral grassland – semi-improved
- C3.1 Other tall-herb and fern – tall ruderal
- D5 Dry heath / acid grassland
- J1.1 Cultivated / disturbed land – arable
- J.1.3 Cultivated / disturbed land – ephemeral / short perennial
- J4 Bare ground

3.2.4 The planning application comprises two phases (refer to **Figure 2**):

a. 'Phase 1' (14.08 hectares), the northern portion of the site which comprises fields of arable farmland and improved grassland in agricultural production and the section of mineral line with retaining walls; and

b. 'Phase 2' (14.44 hectares) at the southern portion of the site that comprises part of the site of the former Marchon Works off High Road.

3.2.5 A Phase 1 Habitat Survey map is appended at **Figure 2**. Photographs are appended at **Section 8.1**.

'Phase 1' Area

Improved / Modified Grassland

3.2.6 Refer to **Photos 1** and **2**. A triangular area of managed improved grassland is located at the eastern side of 'Phase 1' of the proposals. The grassland covers an area of 1.53 hectares and is regularly traversed by dog walkers.

3.2.7 The grassland is characterised by constant and abundant Perennial Rye-grass (*Lolium perenne*) with frequent Creeping Buttercup (*Ranunculus repens*), White Clover (*Trifolium repens*) and locally frequent Yorkshire-fog (*Holcus lanatus*). Cock's-foot (*Dactylis glomerata*) is locally abundant at the field margins with occasional Greater Plantain (*Plantago major*), Curled Dock (*Rumex crispus*), Broad-leaved Dock (*Rumex obtusifolius*) and Dandelion (*Taraxacum officinale* agg.).

3.2.8 A plant species list is appended at **Table 8.2**. The improved grassland is characteristic of an MG7 *Lolium perenne* ley community of the NVC (Rodwell, 1992), and is described by the UKHab as g4 modified grassland with the secondary code 64 mown.

3.2.9 At the northern end of the field of improved grassland (***Target Note 1***) the ground is waterlogged and, as a result, less frequently cut. This 0.15 hectare area is characterised by a higher cover of more competitive broad-leaved grass species such as frequent / locally abundant Common Couch (*Elytrigia repens*) and False Oat-grass (*Arrhenatherum elatius*) with frequent Cock's-foot, Meadow Foxtail (*Alopecurus pratensis*), Rough Meadow-grass (*Poa trivialis*) and Timothy (*Phleum pratense*). Forb species include occasional Common Hogweed (*Heracleum sphondylium*) with very locally abundant Hemp Agrimony (*Eupatorium cannabinum*), Silverweed (*Potentilla anserina*) and Great Willowherb (*Epilobium hirsutum*) and occasional Spear Thistle (*Cirsium vulgare*) and Common Ragwort (*Senecio jacobaea*).

3.2.10 A plant species list for this area is appended at **Table 8.3**. The vegetation in this area is also classed as improved / modified grassland and is characteristic of an MG7 *Lolium perenne* ley community of the NVC (Rodwell, 1992), and is described by the UKHab g4 modified grassland.

Arable Farmland

3.2.11 Refer to **Photos 3** and **4**. West of the improved grassland is an 11.2 hectares area of managed arable farmland. The grassland slopes downhill towards the sea cliffs at St. Bee's Head. At the time of the updated Phase 1 Habitat Survey in October 2021 the field was a wheat crop stubble. In September 2023 the stubble and remnant plants were indicative of a barley crop. Plants amongst the stubble included occasional Common Chickweed (*Stellaria media*), Wavy Bittercress (*Cardamine flexuosa*), Prickly Sow-thistle (*Sonchus asper*), Common Field Speedwell (*Veronica persica*), Annual Meadow-grass (*Poa annua*), Perennial Rye-grass and Dandelion.

3.2.12 No arable plant assemblage of greater conservation significance and indicative of less cultivated arable land, such as Fumitory species (*Fumaria* sp.), was detected. There is no evidence of management of the crop / land specifically for wildlife or the presence of Arable Field Margins Priority Habitat.

3.2.13 The off-site field to the north of the site is similar to the arable field within the site boundary.

Bramble Scrub and Neutral Grassland at the Former Mineral Line (Target Note 2)

3.2.14 Refer to **Photos 3**, **5** and **6**. Bisecting the field of improved grassland and the arable land is a straight linear path along the route of previous railway track used for the transport of minerals (the 'former mineral line'). The path is lined on both sides by a 1 to 2 metres high stone block wall with an earth embankment.

3.2.15 The Bramble scrub, neutral grassland and tall-herb vegetation present on the earth banks is characterised by constant and abundant Bramble (*Rubus fruticosus* agg.) and Red Fescue (*Festuca rubra*) with frequent Rough Meadow-grass, Common Nettle (*Urtica dioica*), Cock's-foot, Common Bent (*Agrostis capillaris*), Common Knapweed (*Centaurea nigra*) and locally abundant Rosebay Willowherb (*Chamerion angustifolium*). Colt's-foot (*Tussilago farfara*), Common Bird's-foot-trefoil (*Lotus corniculatus*) and Tufted Vetch (*Vicia cracca*) are very locally frequent with Ribwort Plantain (*Plantago lanceolata*).

3.2.16 The stones in the wall are fixed with mortar and rupestral plants are limited to occasional Hart's Tongue-fern (*Asplenium scolopendrium*) and rare Common Scurvy-grass (*Cochlearia officinalis)* with a diversity of crustose lichen species.

3.2.17 A plant species list is presented at **Table 8.4**. The vegetation has most affinity with the W24 *Rubus fruticosus – Holcus lanatus* and the MG1 *Arrhenatherum elatius, Festuca-rubra* sub-community grassland communities of the NVC (Rodwell, 1992) and is described by the UKHab as h3d Bramble scrub and g3c5 *Arrhenatherum* neutral grassland with the secondary code 77 neglected. The walls are described as u1e built linear features for the wall with the secondary codes 77 neglected.

Tall-herb Vegetation at the Embankment Between Improved Grassland and the Works Access Road (Target Note 3)

3.2.18 Refer to **Photo 7**. The earth embankment between the improved grassland and the access road to the former Marchon works is colonised by a mosaic of unmanaged neutral grassland and tall-herb vegetation characterised by abundant False Oat-grass and Cock's-foot with frequent Common Knapweed, Common Hogweed, Red Fescue, and frequent / locally abundant Common Nettle and Creeping Thistle (*Cirsium arvense*) with stands of locally abundant Bramble. Occasional Hawthorn (*Crataegus monogyna*) shrubs and rare Dog-rose (*Rosa canina*) are scattered with very locally frequent Heather (*Calluna vulgaris*).

3.2.19 A retaining brick wall on the west side of the access road supports plants of Wall-rue (*Asplenium ruta-muraria*).

3.2.20 A plant species list is appended at **Table 8.5**. The vegetation has most affinity with the NVC communities W24 *Rubus fruticosus – Holcus lanatus* (Rodwell, 1991) and MG1 *Arrhenatherum elatius, Festuca-rubra* sub-community grassland (Rodwell, 1992) and is described by the UKHab as h3d Bramble scrub and g3c5 *Arrhenatherum* neutral grassland with the secondary codes 16 tall herb and 77 neglected. The walls are described as u1e built linear features with the secondary code 77 neglected.

'Phase 2' Area

General Description

3.2.21 Any future residential development on land on the partial footprint of the former Marchon works will form a later phase of the proposals and follow remediation of this area.

3.2.22 Since the demolition of the buildings and structures associated with the Marchon works, vegetation has colonised the former verges, areas of hard-standing, shallow, infertile soils and exposed surface material of ballast and crushed and compacted concrete, and has created a mosaic of areas of bare ground, neutral grassland and sparse ruderal vegetation with scattered self-seeded shrubs.

3.2.23 As illustrated on **Figure 2**, this area comprises a mix of the following Phase 1 Habitat types:

- J4 Bare ground 4.76 ha
- J.1.3 Cultivated / disturbed land – ephemeral / short perennial[5] 3.92 ha
- B2.1 Neutral grassland - unimproved 5.76 ha

Bare Ground

3.2.24 Refer to **Photos 8** and **10**. The areas of bare ground comprise the concrete covered access roads and the concrete slabs (some of which are covered with floor tiles) of the former buildings. The areas of bare ground are devoid of vegetation and are described by the UKHab as u1b developed land; sealed surface.

Sparse, Ruderal / Ephemeral Vegetation

3.2.25 Refer to **Photos 9**, **11** and **12**. Shallow soil in the cracks between the concrete slabs has been colonised by ephemeral has been colonised by locally frequent Red Fescue, Common Ragwort (*Senecio jacobaea*), Lesser Trefoil (*Trifolium dubium*), Groundsel (*Senecio vulgare*), Biting Stonecrop (*Sedum acre*), Procumbent Pearlwort (*Sagina procumbens*), Mouse-ear Hawkweed (*Hieracium pilosella*) and Common Whitlow-grass.

[5] i.e. sparse, ruderal vegetation

3.2.26 These areas of vegetation are described by the UKHab as u1a open mosaic habitats on previously developed land and u1b6 other developed land with the secondary code 17 ruderal / ephemeral. The presence of this habitat is discussed further in **Section 4.3**.

Neutral Grassland – Unimproved

3.2.27 Refer to **Photos 13** and **14**. The areas of greatest vegetation cover (i.e. no areas of bare ground) have been classed as B2.1 neutral grassland – unimproved. The vegetation is characterised by constant and abundant Red Fescue and frequent / locally abundant Creeping Thistle, False Oat-grass and Cock's-foot. Other grass species include locally abundant Perennial Rye-grass and Creeping Bent with frequent Yorkshire-fog, Common Bent, Rough Meadow-grass and Smooth Meadow-grass (*Poa pratensis*) and very locally abundant Annual Meadow-grass.

3.2.28 The grassland patches support a variety of forbs including locally frequent Common Knapweed, Yarrow (*Achillea millefolium*) and Tufted Vetch. Bush Vetch (*Vicia sepium*), Black Medick, Common Vetch (*Vicia sativa*), Colt's-foot, Field Horsetail (*Equisetum arvense*) and Great Willowherb are very locally abundant and Ribwort Plantain is locally frequent. Small areas of ground with waterlogged soils and impeded drainage with ephemeral pooling support very locally abundant plants of Silverweed (*Potentilla anserina*) and very locally frequent Soft-rush (*Juncus effusus*).

3.2.29 Stands of tall-herbs such as Rosebay Willowherb are very locally abundant. An embankment near the existing residential properties off Water's Edge supports dense stands of Bramble. Self-seeded shrubs of Goat Willow (*Salix caprea*), Grey Willow (*Salix cinerea*) and Hawthorn are frequent, particularly towards the north-eastern corner of this area.

3.2.30 Within the neutral grassland at the eastern margin of the site is cluster of Southern Marsh-orchid (*Dactylorhiza praetermissa*) spikes (***Target Note 6***); 10 spikes were counted over a 5m^2 area.

3.2.31 A plant species list for the whole of the Marchon works area is appended at **Table 8.6**.

3.2.32 At the western boundary of the area of neutral grassland is a patch of Heather (***Target Note 8***) which covers an area of 0.0336ha within the site boundary (refer to **Photo 16**). This is identified as Lowland Heathland Priority Habitat and is described by the UKHab as h1a Lowland Heathland with the secondary code 13 scattered dwarf shrubs.

Off-site Habitats

Scrub on Reinforced Sloping Land

3.2.33 Refer to **Photo 15**. At the western boundary of the former Marchon Works area is a concrete slab retaining wall. Behind the wall is steeply sloping land that has been reinforced with a metal mesh (***Target Note 7***). The sloping land is colonised by an acid grassland flora characterised by abundant Common Bent and Yorkshire-fog with Bramble and shrubs of Common Gorse (*Ulex europaeus*) and Western Gorse (Ulex *gallii*). Purple Moor-grass (*Molinia caerulea*) and Male-fern (*Dryopteris filix-mas*) are frequent with locally abundant Common Polypody (*Polypodium vulgare*), Heather and occasional Foxglove (*Digitalis purpurea*) and Wood Sage (*Teucrium scorodonia*). There is a diversity of moss species present.

Coastal Grassland at Land Beyond the Western Boundary of Phase 1 of the Proposals (Target Note 4)

3.2.34 Beyond the edge of the arable field at the western boundary of Phase 1 of the proposals is a worn footpath. West of the path the land slopes steeply to meet the coastal grassland on the sea cliffs. The transitional vegetation includes stands of Perennial Rye-grass and Cock's-foot with abundant Red Fescue and stands of dense Bramble and Bracken (*Pteridium aquilinum*) to create a mosaic of the MG1 *Arrhenatherum elatius, Festuca-rubra* sub-community grassland with the W25 *Pteridium aquilinum – Rubus fruticosus* scrub community of the NVC (Rodwell, 1991).

3.2.35 The vegetation and coastal grassland lower down the steeply sloping sea cliff was not accessible to survey for health and safety reasons.

Coastal Heathland at Land Beyond the Southern Boundary of Phase 1 of the Proposals (Target Note 5)

3.2.36 Refer to **Photos 17** to **21**. Beyond the southern boundary of the arable field the land has an uneven topography although the general slope is down towards the sea cliffs. The vegetation in this area is characterised by a dwarf shrubs of Heather with a mosaic of neutral and acid grassland plant species frequent Common Bent, Common Cat's-ear (*Hypochaeris radicata*), Ribwort Plantain, Crested Dog's-tail (*Cynosurus cristatus*), Common Bird's-foot-trefoil, Sheep's Fescue (*Festuca ovina*), Red Fescue, and very locally abundant Common Whitlow-grass (*Draba verna*), Wood Vetch (*Vicia sylvatica*), Dyer's Greenweed (*Genista tinctoria*), Kidney Vetch (*Anthyllis vulneraria*) and Devil's-bit Scabious (*Succisa pratensis*). Maritime species including occasional Sea Plantain (*Plantago maritima*) and Thrift (*Armeria maritima*) are also present. The area supports scattered Grey Willow (*Salix cinerea*) shrubs.

3.2.37 A plant species list for the coastal grassland / heathland is appended at **Table 8.7**.

3.2.38 This coastal heathland vegetation has affinities with the MC8 *Festuca rubra – Armeria maritima* and the MC10 *Festuca rubra – Plantago* spp. communities of the NVC (Rodwell, 2000) and is described by UKHab as s2a maritime cliffs and slopes with the secondary codes 13 scattered dwarf shrubs and 27 heathland on maritime cliffs and slopes. This vegetation is identified as Maritime Cliff and Slopes Priority Habitat.

Invasive Plant Species

3.2.39 No Japanese Knotweed is present at the site.

3.2.40 As illustrated on **Figure 2** and shown on **Photo 22** a plant of Japanese Rose (*Rosa rugosa*) was detected in the former Marchon works area of the site. This species is listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); it is an offence to spread or cause its spread in the wild. This is considered further at **Section 4.3** below.

3.3 Badger

3.3.1 No badger, setts or badger fields signs were detected at the site during the site visits in 2023, 2021 or 2019. The presence of badger is reasonably discounted.

3.4 Bat Species

Habitat Assessment for Commuting / Foraging Bats

3.4.1 The large expanses of hard-standing, arable farmland, improved grassland and areas of bare ground are devoid of trees, exposed and are unlikely to provide an abundance or diversity of invertebrate prey for foraging bat species. These areas are therefore considered to be of 'low' suitability for use by foraging bats

3.4.2 In the context of the surrounding habitats it is considered that the more sheltered mosaic of unmanaged neutral grasslands with scattered shrubs within the former Marchon Works area of the site, are of 'low' suitability for use by foraging bats.

3.4.3 There is an absence of linear features at the site (such as watercourses, treelines and hedgerows). It is considered that the site currently has 'low' suitability for use by commuting bats.

Daylight Survey and Assessment: Trees and Shrubs

3.4.4 No features with suitability for use by roosting bats were detected at the trees and shrubs within the site boundary. All trees and shrubs are assessed to be of 'negligible' suitability.

3.4.5 Refer to **Photos 23** to **26**. Inspection of the stone bridge abutments and underarch (***Target Note 9***) on the survey dates in 2023, 2021 and 2019 did not detect any bats or evidence of the current or previous use of the structure by roosting bats.

3.4.6 Inspection of the structure confirmed that the crevices / joins between the stone blocks are shallow (less than 0.03 metres) and are not considered to extend deep enough to provide a suitable opportunity for use by roosting bats. The structure is currently assessed to be of 'negligible' suitability for use by roosting bats.

3.5 Wintering and Passage Migrant Bird Surveys

3.5.1 An overview of the wintering bird survey results (as extracted from the separate technical appendix *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023) is presented below for ease of reference:

"Sixty-four species were recorded in total…

…Fifteen of the recorded species (bar-tailed godwit, black-headed gull, common gull, common scoter, cormorant, curlew, goosander, herring gull, oystercatcher, pink-footed goose, pintail, redshank, red-throated diver, turnstone and whooper swan) are listed on the designated sites citations.

In addition to common scoter, curlew, herring gull and red-throated diver (Priority Species listed above) 7 other Priority Species (dunnock, grey partridge, linnet, reed bunting, skylark, song thrush, and starling) were also recorded to give a total of 11 Priority Species.

Five raptor species / birds of prey were recorded (buzzard, kestrel, merlin, peregrine and sparrowhawk).

Ten bird species[6] included on the red-list namely grey partridge, common scoter, shag, curlew, herring gull, kittiwake, merlin, skylark, starling and greenfinch were also recorded.

The greatest diversity of bird species (39 species) was recorded in the survey area on 27th February 2019.

The greatest number of individual birds (1921) was recorded in the survey area on 29th October 2018; this figure is inflated owing to the recordings of large flocks of starling (1256 in total) observed in the survey area on this date (as is expected in this area at this time of year)."

3.5.2 **Table 3.3** below, is extracted from *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023) and provides a summary of the Priority Species and qualifying species of the designated sites detected during the 2018/19 surveys. The figures in the table are representative of the peak count of birds observed in a single flock during a single survey effort.

[6] The surveys were carried out prior to the inclusion of swift, greenfinch and house martin on the red-list and, as such these species may have been present but not recorded

Table 3.3: Summary of Priority Species and Qualifying Species of the Designated Sites Detected During the 2018/19 Surveys

Category	Common Name	Peak Count[2] within Site	Peak Count[2] within Survey Area	Total No. Surveys the Species was Present[3]
Qualifying Species of the Relevant Designated Sites	Bar-tailed godwit	0	1	1
	Black-headed gull	0	7	7
	Common gull	0	2	1
	Common scoter[1]	0	35 (in flight)	9
	Cormorant	0	460 (in flight)	9
	Curlew[1]	0	1	4
	Goosander	0	1	1
	Herring gull[1]	8 (in flight)	100	11
	Oystercatcher	0	6	10
	Pink-footed goose	210 (in flight)	38 (in flight)	3
	Pintail	0	7 (in flight)	1
	Redshank	0	2	1
	Red-throated diver[1]	0	10 (in flight)	8
	Turnstone	0	3	2
	Whooper swan	0	180 (in flight)	2
Priority Species	Dunnock	3	4	11
	Grey partridge	4	1 (no activity) 3 (in flight)	8
	Linnet	4	4	4
	Reed bunting	1	1	8
	Skylark	72	44 (in flight)	11
	Song thrush	2	1	8
	Starling	34 (in flight)	1000 (in flight)	7

[1] Also a Priority Species
[2] The peak count for each species is determined by the highest number of birds observed in a single flock during one survey effort. Peak counts for each species may be taken from different survey dates.
[3]11 surveys were undertaken in total

3.5.3 Further consideration of the findings of the wintering bird surveys, particularly in relation to the proximity of the site to the Solway Firth SPA, is presented at *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023) and at **Section 4.4**.

3.6 Breeding Bird Surveys

Surveys in 2019

3.6.1 A summary table of the results of the breeding bird surveys carried out in 2019 is presented below. Raw data are presented at **Tables 8.8** and **8.9** and results are plotted on **Figures 3** and **4**.

Table 3.4: Summary of 2019 BBS Survey Results

Scientific Name	Common Name	Number of Birds Detected		Total	No. of Surveys Bird Species Observed
		12th April 2019	7th June 2019		
Turdus merula	Blackbird	1	5	6	2
Sylvia atricapilla	Blackcap	-	1	1	1
Corvus corone corone	Carrion crow	35	1	36	2
Fringilla coelebs	Chaffinch	-	1	1	**1**
Phalacrocorax carbo	Cormorant	-	2	2	**1**
Prunella modularis	**Dunnock**	**-**	**2**	**2**	**1**
Fulmarus glacialis	Fulmar	1	-	1	1
Carduelis carduelis	Goldfinch	9	25	34	2
Perdix perdix	**Grey partridge**	**2**	**-**	**2**	**1**
Larus argentatus	**Herring gull**	**55**	**16**	**71**	**2**
Delichon urbica	House martin	-	2	2	**1**
Passer domesticus	**House sparrow**	**-**	**1**	**1**	**1**
Corvus monedula	Jackdaw	10	7	17	2
Larus fuscus	Lesser black-backed gull	1	1	2	2
Carduelis cabaret	**Lesser redpoll**	**4**	**-**	**4**	**1**
Carduelis cannabina	**Linnet**	**43**	**8**	**51**	**2**
Stercorarius longicaudus	Long-tailed skua	-	1	1	**1**
Anthus pratensis	Meadow pipit	52	19	71	2
Falco peregrinus	Peregrine	1	-	**1**	**1**
Phasianus colchicus	Pheasant	1	1	2	2
Motacilla alba	Pied wagtail	1	-	1	1
Carduelis spinus	Siskin	1	-	**1**	**1**
Turdus philomelos	**Song thrush**	**-**	**3**	**3**	**1**
Alauda arvensis	**Skylark**	**4**	**9**	**13**	**2**
Sturnus vulgaris	**Starling**	**31**	**321**	**352**	**2**
Saxicola torquata	Stonechat	-	4	4	1
Hirundo rustica	Swallow	1	6	7	2
Oenanthe oenanthe	Wheatear	1	-	**1**	**1**
Sylvia communis	Whitethroat	-	17	17	1
Phylloscopus trochilus	Willow warbler	1	2	3	2
Columba palumbus	Wood pigeon	3	-	3	1
Troglodytes troglodytes	Wren	4	3	**7**	**2**
Species highlighted in **bold** are Priority Species					

3.6.2 Thirty-two bird species were recorded during the 2019 breeding bird surveys.

3.6.3 Sixteen species (blackbird, blackcap, chaffinch, dunnock, goldfinch, linnet, meadow pipit, pheasant, pied wagtail, song thrush, skylark, stonechat, wheatear, whitethroat, willow warbler and wren) were exhibiting territorial song and behaviour indicative of breeding at the site (or close by).

3.6.4 Four species typically associated with the nearby marine / coastal habitats were recorded in flight over the site namely fulmar, long-tailed skua, lesser black-backed gull and herring gull.

3.6.5 Other species namely carrion crow, house martin, jackdaw, lesser redpoll, swallow, siskin, starling and wood pigeon were recorded in flight over the site only. The site does not currently support habitat typically used by these species for breeding.

3.6.6 The breeding bird survey data indicates that the site is used by bird species typically associated with open grassland habitats and scattered scrub with at least four singing meadow pipits and up to six singing skylark recorded.

3.6.7 Nine Priority Species were recorded with of four these species (dunnock, linnet, song thrush and skylark) as confirmed breeders within the site boundary.

3.6.8 None of the bird species listed on the SPA citations were recorded as breeding within the site, although sightings of fulmar, peregrine, cormorant and herring gull that breed on the nearby sea cliffs were recorded.

Surveys in 2021

3.6.9 A summary table of the results of the breeding bird surveys carried out in 2021 is presented below. Raw data are presented at **Tables 8.10** to **8.12** and results are plotted on **Figures 5** to **7**.

Table 3.5: Summary of 2021 BBS Survey Results

Scientific Name	Common Name	Number of Birds Detected			Total	No. of Surveys Bird Species Observed
		14th May 2021	7th June 2021	22nd June 2021		
Turdus merula	Blackbird	2	10	1	13	3
Cyanistes caeruleus	Blue tit	1	-	-	1	1
Corvus corone corone	Carrion crow	26	9	7	42	3
Phylloscopus collybita	Chiffchaff	1	-	-	1	1
Prunella modularis	**Dunnock**	**1**	**3**	**-**	**4**	**2**
Carduelis carduelis	Goldfinch	10	17	3	30	3
Uria aalge	Guillemot	1	-	-	1	1
Larus argentatus	**Herring gull**	**24**	**33**	**4**	**61**	**3**
Corvus monedula	Jackdaw	25	4	2	31	3
Falco tinnunculus	Kestrel	1	2	2	5	3
Carduelis cannabina	**Linnet**	**32**	**9**	**15**	**56**	**3**
Carduelis cabaret	**Lesser redpoll**	**9**	**1**	**-**	**10**	**2**
Anthus pratensis	Meadow pipit	4	11	4	19	3
Haematopus ostralegus	Oystercatcher	1	2	-	3	2
Perdix perdix	**Grey partridge**	**4**	**-**	**1**	**5**	**2**
Phasianus colchicus	Pheasant	1	1	-	2	2
Alauda arvensis	**Skylark**	**3**	**7**	**6**	**16**	**3**
Saxicola torquata	Stonechat	4	3	2	9	3
Sturnus vulgaris	**Starling**	**45**	**-**	**7**	**52**	**2**
Carduelis spinus	Siskin	3	1	-	4	2
Hirundo rustica	Swallow	3	-	2	5	**2**
Oenanthe oenanthe	Wheatear	3	-	-	3	1
Sylvia communis	Whitethroat	10	8	5	23	3
Columba palumbus	Wood pigeon	1	-	-	1	1
Troglodytes troglodytes	Wren	1	1	2	4	**3**
Phalacrocorax carbo	Cormorant	**-**	3	-	3	**1**
Fringilla coelebs	Chaffinch	**-**	1	-	1	1
Locustella naevia	**Grasshopper warbler**	**-**	**1**	**-**	**1**	**1**
Passer domesticus	**House sparrow**	**-**	**2**	**1**	**3**	**2**
Larus fuscus	Lesser black-backed gull	**-**	1	-	1	**1**
Turdus viscivorus	Mistle thrush	**-**	1	-	1	1
Pica pica	Magpie	**-**	1	-	1	1
Phylloscopus trochilus	Willow warbler	**-**	1	1	2	2
Delichon urbica	House martin	**-**	-	1	1	2
Lagopus lagopus	Red Grouse	**-**	-	1	1	1
Corvus corax	Raven	**-**	-	1	1	1
Corvus frugilegus	Rook	**-**	-	1	1	1
Riparia riparia	Sand martin	**-**	-	4	4	1
Turdus philomelos	**Song thrush**	**-**	**-**	**4**	**4**	**1**
Species highlighted in **bold** are Priority Species						

3.6.10 Thirty-nine bird species were recorded during the 2021 breeding bird surveys.

3.6.11 Sixteen species (blackbird, blue tit, chaffinch, dunnock, goldfinch, grey partridge, linnet, meadow pipit, pheasant, song thrush, skylark, stonechat, wheatear, whitethroat, willow warbler and wren) were exhibiting territorial song and behaviour indicative of breeding at the site with an additional three species namely chiff-chaff, grasshopper warbler and mistle thrush with recorded behaviours indicative of breeding just outside the site boundary.

3.6.12 Similar species to those recorded in flight over the site in 2019 were re-recorded in 2021 with the addition of kestrel, oystercatcher and guillemot in flight.

3.6.13 As evidence by the 2019 survey data, the breeding bird survey data indicates that the site is used by bird species typically associated with open grassland habitats and scattered scrub with at least one singing meadow pipit (and one with food) and up to four singing skylark recorded.

3.6.14 Ten Priority Species (same nine species as detected in 2019 with the addition of grasshopper warbler) were recorded with of four these species (dunnock, linnet, song thrush and skylark) as confirmed breeders within the site boundary.

3.6.15 None of the bird species listed on the SPA citations were recorded as breeding within the site, although sightings of guillemot, raven, cormorant and herring gull that breed on the sea cliffs were recorded.

3.7 Great Crested Newt and Other Amphibians

Great Crested Newt

3.7.1 Pond 1 is an ephemeral pool that was dry in October 2021. Pond 1 is located in the site boundary of the Cumbria Metallurgical Coal Project and was reported to be dry in May 2021 in *Cumbria Metallurgical Coal Project. Ecology Survey Update Report* (BSG Ecology, August 2021). Pond 1 is assessed to be unsuitable for use by breeding amphibians.

3.7.2 Pond 2 is located over 500 metres from the site boundary. Great crested newt presence / absence surveys of Pond 2 carried out in 2013[7] did not detect great crested newt. A great crested newt eDNA presence / absence survey at Pond 2 in 2021 (as reported in *Cumbria Metallurgical Coal Project. Ecology Survey Update Report* (BSG Ecology, August 2021) for the Cumbria Metallurgical Coal Project did not detect great crested newt.

3.7.3 Owing to the absence of any other known ponds within an unobstructed 500 metres radius of Pond 2 it is advised that the likelihood of great crested newt colonising Pond 2 since 2013 is negligible. In addition, no amphibian species were detected beneath the reptile refuge trap survey carried out at the site and surrounds in 2021, as reported in the *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022)).

Other Amphibian Species

3.7.4 Breeding common toad (*Bufo bufo*), a Priority Species, was detected at Pond 2 in 2013.

3.7.5 The terrestrial habitats within the site, particularly the piles of brick and concrete rubble and the areas of more dense grassland are suitable for use by sheltering common toad. This is taken into consideration in the discussion at **Section 4.4** and the recommendations at **Section 5.0**.

3.8 Reptiles

3.8.1 As reported in *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022) the site and surrounds support a population of slow-worm and common lizard.

3.8.2 The report advises that:

[7] As reported in *Land off High Road, Whitehaven. Ecological Survey and Assessment* (ERAP Ltd, 2013)

"A peak count of 10 adult slow-worm and 11 adult common lizard were detected at the approximately 10.25 hectares of favourable habitat within and immediately adjacent to the site. In accordance with Table 2 of Evaluating local mitigation/translocation programmes: Maintaining Best Practices and lawful standards. HGBI advisory notes for Amphibians and Reptile Groups (ARGs) (HGBI, 1998) this relates to the following population sizes for the site:

a. Slow-worm: low population (<50 per hectare); and

b. Common lizard: low population (<20 per hectare)."

3.8.3 The presence of reptile species at the site is considered further at **Section 4.4.**

3.9 Other Wildlife / Incidental Observations

3.9.1 On 29th October 2018 two harbour porpoises were observed for 15 minutes off the coast of St. Bee's Head.

3.9.2 Rabbit activity is frequent at the site. No observations of brown hare were made during the site visits.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

4.1.1 The planning application at the site is as follows:

"Hybrid application seeking full planning permission for the erection of 139 residential dwellings (C3), new vehicular accesses off high road, public open space and ancillary infrastructure and outline planning permission for residential development units, retail and ancillary infrastructure with all matters reserved other than access."

4.1.2 Ecological guidance based on the baseline surveys has been provided to the design team to inform the preparation of the site proposals, and the preparation of the detailed areas of the landscape strategy.

4.1.3 This approach has aimed to ensure that the proposals have applied the Mitigation Hierarchy (i.e. avoid, mitigate, compensate) to achieve a sympathetic scheme which avoids features of ecological interest (where possible) and seeks to minimise and mitigate / compensate for adverse effects where avoidance is not possible.

4.1.4 The proposals are illustrated on *Marchon (Phase 1 and 2) Whitehaven. Proposed Masterplan - August 2023* (Persimmon, 2023) and *Marchon Outline Landscape Strategy Rev C* (Westwood Landscape, 2023) with the more detailed proposals at Phase 1 outlined on *Phase 1 Landscape Plan (detail). Drawing PHM-WW02 Rev D* (Westwood Landscape, 2023) and *Phase 1 Landscape Plan with POS. Drawing PHM-WW01 Rev E*(Westwood Landscape, 2023). Hereafter the landscape plans are referred to collectively as the 'Landscape Strategy'.

4.1.5 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site is evaluated at **Section 4.3**, and protected and notable species are considered at **Section 4.4**.

4.2 Designated Sites for Nature Conservation

Solway Firth SPA

4.2.1 Solway Firth SPA is located 668 metres from the site, although it is recognised that the sea and coastal habitats / maritime cliffs nearer the site will also be used by the qualifying species relevant to the SPA.

4.2.2 The following statements are made in *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023) in relation to the usage of the site (and survey area) by the qualifying species associated with the SPA:

"SPA Qualifying Species

Within the Site

Of the fifteen recorded qualifying species the following statements are made:

a. No pink-footed geese have been recorded resting in the site (or in the remainder of the arable field adjacent to the western area of the site);

b. No other qualifying bird species relevant to the European designated sites have been recorded resting in the site;

c. A peak count of 210 pink-footed geese were recorded in flight over the site on 11th February 2019 (Survey 8); and

d. A peak count of 8 herring gull were recorded in flight over the site on 2nd January 2019 (Survey 5).

Within the Survey Area

Other qualifying bird species relevant to the European designated sites have been recorded in the wider area and observations comprise:

a. Flocks of up to 35 birds of common scoter flying over the sea to the west of the site with the largest flocks observed on 2nd January 2019 (Survey 5);

b. Flocks of up to 460 cormorant flying over the sea to the west of the site with the largest flocks observed on 9th January 2019 (Survey 6);

c. Flocks of pink-footed goose (up to 38 individual birds) observed in flight over the fields and sea;

d. Flocks of whooper swan in flight over the sea with the peak count of 180 observed on 28th March 2019 (Survey 11);

e. Count of 100 herring gull on the rocks at the base of the cliff adjacent to the site;

f. Flocks of up to 10 red-throated diver in flight over the sea to the west of the site;

g. Observations of up to 3 turnstone on the rocks at the base of the sea cliff;

h. Observations of low numbers of common gull, black-headed gull, oystercatcher, redshank and pintail; and

i. Sightings of single birds of bar-tailed godwit, curlew and goosander."

4.2.3 The report concludes that no data / evidence has been recorded to indicate that the site is functionally-linked land[8] for the support of the qualifying bird species at the designated site and that none of the survey data indicate that the land in the wider area (outside the site boundary) is functionally-linked land for the support of the qualifying bird species at the designated site.

4.2.4 Habitats used by the qualifying species of the SPA will not be directly affected by the proposals.

4.2.5 The report identifies that the sea cliffs and marine habitat to the immediate west of the site are utilised by qualifying species of the SPA (15 species) with 10 of the qualifying species recorded on more than 1 survey visit and that the majority of the qualifying species of the SPA were recorded in flight adjacent

[8] As defined by Natural England in *Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions. NECR207* (Natural England, 2016).

to the site. Whilst the proposals will not result in the temporary or permanent presence of a feature that could pose as a hazard or obstruction to birds in flight over the site (such as a tall building or a wind turbine), in the presence of unmitigated actions during the construction period, such as the inappropriate use of lighting, there is a minor risk of the disturbance of the SPA qualifying birds in the local area. Mitigation to minimise the risk of disturbance can be secured by protective measures to be outlined in a Construction Environment Management Plan (CEMP), as outlined in **Section 5.4**.

4.2.6 Other measures to avoid / reduce the risk of adverse effects on water quality and the maritime environment, particularly during the construction period, are feasible and can be secured by the implementation of actions to be outlined in the CEMP (refer to **Section 5.4**).

4.2.7 It is advised that the information presented in *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023) and **Section 5.0** of this report provides appropriate information for the competent authority (Copeland Borough Council) to carry out a Habitats Regulations Assessment (HRA), as needed.

Cumbria Coast Marine Conservation Zones

4.2.8 As the proposals will not affect hydrological processes nor directly affect the marine habitats within the MCZ, it is considered that the proposals will not have an adverse effect on the integrity of the Cumbria Coast MCZ nor the conservation status of the qualifying species. The 'marine licence interactive assistance tool' provided by the Marine Management Organisation (MMO) advises that a "marine licence is not required" for the proposals at the site.

4.2.9 The implementation of protective measures to be presented in a CEMP (refer to **Section 5.4**) are appropriate to ensure that risks to the MCZs during the construction phase of the proposed development are avoided.

St. Bee's Head SSSI

Direct Changes of Habitat within the SSSI

4.2.10 Refer to **Figure 1.** It is recognised that 0.0468 hectares of the site (namely the land at the south-western corner of the arable field within 'Phase 1') lies within the land designated as St. Bee's Head SSSI. This area lies outside the area of the site proposed to be developed and lies within the area of public open space allocated to be enhanced to coastal wildflower meadow and to provide habitats for use by reptiles and other fauna.

4.2.11 It is therefore considered that the proposals will not result in a direct adverse effect on the SSSI and its features of interest. The conversion of this area from arable farmland to a coastal wildflower grassland habitat complementary to the other habitats along the maritime cliffs is assessed as a minor benefit to the SSSI.

Habitat Damage / Recreational Impacts

4.2.12 The England Coastal Path (a public footpath) is located at the western boundary of the 'Phase 1' area of the site, at the interface between the arable land and the coastal grassland and maritime cliffs. Observations made by the surveyors during the site visits indicate that the footpath at the western site boundary is not well used and daily walkers and dog walkers enter the St. Bee's Head area via the public footpath along the former mineral line before heading westward towards the cliffs. The lower areas of the maritime cliffs in this area are too steep and considered too dangerous for direct access from the top of the slope.

4.2.13 It is recognised that an increase in the local population as a result of the construction of residential properties in proximity to the SSSI may increase the footfall / use of the SSSI. This has the potential to have an adverse effect by damaging vegetation, including plants such as Dyer's Greenweed (listed as 'Vulnerable' in England), through trampling and erosion. **Photos 19** and **20** show damaged areas of Heather as a result of an informal pathway and provide an example of the potential effects of

increased recreational impacts. Eutrophication, arising from nitrogen-rich dog fouling of the naturally infertile soils at the cliffs, is also an identified potential adverse effect of the proposals.

4.2.14 To avoid and mitigate the risk of a likely significant effect the following measures have been accommodated by the proposals and / or can be secured by planning conditions (refer to **Section 5.0**).

Inherent Mitigation

a. The arable fields slope downhill towards the cliffs and the sea; currently any fertiliser and / or spray will naturally percolate towards the maritime cliffs. The conversion of the arable land at the western area of 'Phase 1' to coastal wildflower grassland will remove this activity and is likely to reduce the long-term enrichment of the soil (at least in the vicinity of the arable fields that lie within the site);

b. The proposals accommodate a large area of public open space (POS) with designated footpaths that create a meandering (rather than direct) route towards the coast. This area is not currently accessible to the public at all times of year owing to the presence of a crop, and it is therefore considered that the area of POS represents a significant expansion of the accessible area away from the coast. By expansion of the accessible area, and by buffering the maritime heath via the POS, it is considered that the impact of disturbance and the concentration of dog-fouling will be diluted and will be directed away from the heathland;

c. The proposals at the public open space, both in 'Phase 1' and as outlined in *Marchon (Phase 1 and 2) Whitehaven. Proposed Masterplan - August 2023* (Persimmon, 2023) in the 'Phase 2' area, provide an alternate area for use by dog walking and other recreational activities to ensure that residents are not always directed to the maritime heath habitats;

Additional Measures

d. The provision (and maintenance) of dog litter bins will also assist in the reduction of phosphorus pollution (i.e. enrichment of the soil) by dog faeces (as suggested in *'Beware the dog: the ecological and environmental impact of pet dogs'* (Harris, S., 2023)) and can be secured by the proposals;

e. Currently the area used by dog walkers is considered to be poorly signed with few way markers. It is advised that the installation of way markers and more evident entry points to the public footpaths along St. Bee's Head will act to detract from the use of the informal footpaths, reduce risk of the damage elsewhere and will enable the recolonisation of locally damaged areas; and

f. Local residents can be informed of and educated on the value of the habitats in the wider area and the avoidance of potentially harmful activities by the installation of information signs / interpretation boards and by the distribution of an advisory leaflet in the sale pack of the properties (refer to **Section 5.2**). This will include guidance on keeping dogs on leads, particularly during the bird nesting season.

Summary of Potential Impacts to Solway Firth SPA, Cumbria Coast MCZs and St Bees Head SSSI

4.2.15 It is considered that, provided the design of the site and measures outlined above during the construction and operational phases of the proposed development are adhered to, significant adverse impacts to the Solway Firth SPA, Cumbria Coast MCZs and St Bees Head SSSI and the associated featured of interest can be avoided and mitigated.

Other Statutory Designated Sites

4.2.16 Owing to the distance between the site and any other statutory designated sites for nature conservation within the wider area (as outlined in **Section 3.1**), direct and indirect effects on other statutory designated sites are reasonably discounted.

Non-statutory Designated Sites

4.2.17 Owing to the distance between the site and the non-statutory designated sites for nature conservation within the wider area, direct and indirect effects on non-statutory designated sites are reasonably discounted.

4.3 Vegetation and Habitats

Individual Plant Species

4.3.1 No 'rare'[9] plant species have been detected at the site. Direct adverse effects on individual plant species of conservation concern are reasonably discounted.

4.3.2 Potential impacts as a consequence of recreational pressures from the proposals on individual plants in the wider area, such as Dyer's Greenweed, are discussed in **Section 4.2**.

Priority Habitat

4.3.3 MAGiC Maps identifies the majority of the former works portion of the site (and beyond the site boundary) as Open Mosaic Habitat on Previously Developed Land Priority Habitat (hereafter referred to as 'OMH'). For completeness and in consideration of whether the vegetation in the proposed development site meets the criteria to be defined as OMH Priority Habitat the following documents were referred to:

a. *UK Biodiversity Action Plan; Priority Habitat Descriptions Open Mosaic Habitat on Previously Developed Land* (Maddock, 2010);

b. *Definition and mapping of open mosaic habitats on previously developed land: Phase 1 Final Report*. (Riding, A., Critchley, N., Wilson, L. and Parker, J. , December 2009); and

c. The botanical survey and assessment as presented in the *Cumbria Metallurgical Coal Project. Ecology Survey Update Report* (BSG Ecology, August 2021) which encompasses the similar habitats over the remainder of the former Marchon Works.

4.3.4 It is considered that the areas of neutral grassland – unimproved within the former Marchon Works area are too closed and dense and therefore do not meet the description of OMH.

4.3.5 The areas of concrete hard-standing with no gaps / cracks and large areas that are entirely devoid of vegetation and also do not meet the description of OMH.

4.3.6 The areas mapped as colonising ruderal herbs on the Phase 1 Habitat Survey (**Figure 2**) however form a mosaic of bare ground, sparse, ruderal herbs, mosses, open grassland and flower-rich grassland. The 3.92 ha area of colonising ruderal herbs has been assessed against the qualifying criteria in **Table 4.1**, below. To qualify as OMH the habitat must meet all criteria.

[9] As defined by the IUCN Red Lists (IUCN, 2022)

Table 4.1: **Assessment of Habitats at the Former Marchon Works Against Criteria for Open Mosaic Habitat (OMH) on Previously Developed Land**

Criterion	Qualifying Criterion	Represented at Site	Criterion Met?
1	The area of open mosaic habitat is at least 0.25ha in size.	The area of mapped as colonising ruderal herbs on the Phase 1 Habitat Survey that forms a mosaic of bare ground, sparse, ruderal herbs, mosses, open grassland and flower-rich grassland covers an area of 3.92ha.	✓
2	Known history of disturbance at the site or evidence that soil has been removed or severely modified by the previous use(s) of the site. Extraneous materials / substrates such as industrial spoil may have been added.	The site was previously developed and used as a chemical works. Although the buildings have been removed, the demolition has created disturbance and there are areas of concrete rubble that are providing shallow and infertile substrates for plant growth.	✓
3	The site contains some vegetation. This will comprise early successional communities consisting of stress-tolerant species. Early successional communities are composed of: a) annuals, or b) mosses/liverworts, or c) lichens, or d) ruderals, or e) inundation species, or f) open grassland, or g) flower-rich grassland, or h) heathland.	The habitat comprises a mosaic of bare ground and early successional communities including (b) mosses, (d) ruderals, (f) open grassland and (g) flower-rich grassland. Heathland is present on the margins.	✓
4	The site contains unvegetated, loose bare substrate and pools may be present.	Un-vegetated bare ground with loose substrate is present. Occasional (2-3) ephemeral pools are present in a local area (i.e. not across the whole of the area of OMH) where the drainage is impeded by an impervious substrate.	✓ (locally)
5	The site shows spatial variation, forming a mosaic of one or more of the early successional communities a-h (in criterion 3) plus bare substrate within 0.25ha.	Complex mosaic of bare ground and early successional communities including (b) mosses, (d) ruderals, (f) open grassland and (g) flower-rich grassland is present.	✓

4.3.7 It is considered that, in combination with the conditions present, the plant species list at **Table 8.6** and the consideration of the criteria at **Table 4.1**, that the habitat is an example of OMH Priority Habitat.

4.3.8 The area of 0.0336 (0.1%) of dense Heather shrubs at ***Target Note 8*** is assessed as Lowland Heathland Priority Habitat.

4.3.9 No other Priority Habitat is present at the site.

4.3.10 The proximity of the site / operations to Maritime Cliffs and Slopes Priority Habitat to the west is recognised and protective measures achieved during the site design and to be applied during construction are outlined at **Sections 4.2** and **5.2** and **5.3**.

Habitat Importance / Value in a Geographical Context

4.3.11 In terms of each habitat's importance in a geographical context[10], the areas of OMH are of 'local authority-wide' importance. The neutral grassland is assessed to be of 'local' value as the grassland is not species-rich.

4.3.12 The areas of arable land, hard-standing, Bramble scrub, tall-herb vegetation and improved / modified amenity grassland are of 'site' value, as they are not of interest in terms of their plant species composition or rarity, but do provide suitable habitat for the protected species (including slow-worm and common lizard) associated with the site, and provide suitable habitat for nesting birds.

Assessment of Impacts and Application of the Mitigation Hierarchy

4.3.13 Ecological advice has been adopted during the design of the site, and the proposals have been informed by the 'Mitigation Hierarchy' (i.e. avoid, mitigate, compensate).

4.3.14 The heathland Priority Habitat will be retained and protected as part of the proposals.

4.3.15 It is recognised that the proposals (including the mandatory remediation operations) will result in a loss of habitat area and habitat (OMH) assessed to be of 'local authority-wide' importance.

4.3.16 It is proposed to minimise these impacts via the retention of the habitats (and suitable infertile substrates) at the western margin of the former Marchon Works where development is restricted for physical reasons.

4.3.17 In addition, whilst it is recognised that the re-creation of OMH is difficult, the proposals intend to achieve a mosaic of habitats that are complementary to the local area, including heathland, coastal grassland, neutral (wildflower) grassland, patches of bare ground, bunds and ditches and scattered scrub.

4.3.18 With the appropriate aftercare and management (to be secured by a Landscape and Ecological Management Plan), the proposals aim to provide a similar ecological function to the OMH present at the site for both colonisation by plant species and for use by fauna such as reptiles, common toad and nesting birds.

Invasive Plant Species

4.3.19 Japanese Rose was detected at the site. The proposals provide a mechanism to achieve the control / eradication of this invasive plant species as part of the site preparation works; this is considered to be a benefit of the proposals as control of this species on the site will minimise the risk of spread into the surrounding Priority Habitat and SSSI.

[10] Using the terms presented at Section 4.7 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), i.e. International and European, National, Regional, Local Authority-wide area, River Basin District, Estuarine system / Coastal cell or Local. The term 'site' value is additionally used to highlight ecological features considered to be of importance in the context of the wider site habitats, but which are of negligible value in the context of the local area.

4.3.20 In the presence of the best practice measures for biosecurity (as recommended at **Section 5.4**) the proposals can be achieved with minimal risk of the introduction and spread of invasive plant species.

Off-site Habitats and Context

4.3.21 The position of the site within an area bordered by other OMH Priority Habitat to the south and Maritime Cliffs and Slopes Priority Habitat to the west is recognised.

4.3.22 As outlined on *Phase 1 Landscape Plan (detail). Drawing PHM-WW02 Rev D* (Westwood Landscape, 2023) and *Phase 1 Landscape Plan with POS. Drawing PHM-WW01 Rev D* (Westwood Landscape, 2023) buffers of complementary vegetation will be retained and created between the site and the off-site Priority Habitats to protect these habitats.

4.3.23 It is considered that this inherent mitigation as part of the site design (and the application of an appropriate lighting strategy) minimise the risk of adverse effects on the off-site Priority Habitats and their ecosystem services function.

4.4 Protected Species and Other Wildlife

Bat Species

Foraging Habitat

4.4.1 Activities during the construction phase, including the removal of vegetation, are not likely to result in a significant reduction in habitat availability for use by foraging bats or any core habitat relied on by bats at roosts in the wider area.

4.4.2 In the longer term it is considered that the habitat creation proposals including the creation of areas of wildflower grassland and tree planting will provide comparable (and possibly increased) opportunities for the attraction of foraging bats to the site and local area.

Disturbance During Construction and Operation

4.4.3 Any adverse effects as a result of lighting during the construction period are a temporary effect of a negligible magnitude and are not considered to be significant at the local scale. The appropriate use of lighting can be secured by the implementation of guidance / actions to be outlined in a CEMP.

4.4.4 In consideration of the disturbance of bats as a result of lighting during the operation of the site it is advised that impacts can be avoided and mitigated by the appropriate use of lighting; further guidance is provided in **Section 5.3**.

Roosting Bats

4.4.5 The proposals will have no adverse effect on roosting bats. The construction of the residential properties with bat access panels and the landscape planting scheme which includes kested hedgerows (i.e. hedgerows at the top of small embankments) and trees provides an opportunity to significantly increase the suitability of the local area for use by roosting and foraging bats. Ecological enhancements for bat species are presented at **Section 5.5**.

Bird Species

Wintering Birds

4.4.6 Based on the survey data presented in *Results of Wintering Bird Surveys 2018 to 2019* (ERAP (Consultant Ecologists) Ltd, 2023) adverse effects on wintering birds as a result of habitat loss are reasonably discounted.

4.4.7 It is advised that the implementation of the appropriate use of lighting and noise limitation to be secured by the implementation of guidance / actions, and to be outlined in a CEMP, can minimise the risk of adverse effects on birds flying over and near the site in the construction period.

Breeding Birds

4.4.8 The conversion of arable land and loss of the pockets of grassland in the areas of OMH is likely to remove habitats used by nesting skylark (a Priority Species) and meadow pipit. Subject to the areas of grassland between the paths being large enough and the responsible use of the area by people and dog walkers (i.e. keeping to the paths and keeping dogs on leads during the nesting season) it is considered that the area of POS to the west of 'Phase 1' may be large enough to accommodate use by nesting skylark and meadow pipit (albeit likely in smaller numbers than present at the site currently). The loss of these species from the site / reduction in carrying capacity of the site for use by nesting skylark is an identified impact of the proposals and it is considered that these birds will be displaced to similar (and available) habitats in the local area.

4.4.9 Boundary vegetation (including the habitat in the western area of the former Marchon Works) will be retained by the proposals, and an appropriate landscape strategy that specifies native hedgerows, scrub and Gorse scrub is proposed for the site. It is therefore considered that the other Priority Species recorded breeding at the site (namely dunnock, linnet and song thrush) will be conserved at the site and local area in the long-term.

4.4.10 In addition, the construction of a residential development secures an opportunity to provide habitat for other conservation Priority Species within the built environment such as swift (a red-listed species), and house sparrow (a Priority Species and red-listed species). Features suitable for use by nesting birds to be incorporated into the site design are described at **Section 5.5**.

4.4.11 Activities during the construction phase, including the removal of vegetation to facilitate development, have the potential to impact breeding and nesting birds in contravention of the *Wildlife and Countryside Act 1981* (as amended). Mandatory actions to protect nesting birds during site clearance are outlined at **Section 5.4**.

Common Toad

4.4.12 Habitats within the site are suitable for use by sheltering common toad, a Priority Species. Reasonable avoidance measures to minimise the impacts on common toad during the site clearance and construction period and actions to secure the long-term conservation of habitats for sheltering amphibians at the site are described in **Sections 5.4**.

Reptile Species

4.4.13 Section 5.2 of *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022) assesses the impact on reptiles (slow-worm and common lizard) and their habitats associated with habitat loss, fragmentation / isolation of habitats, habitat degradation (shading) and killing and injury (including cat predation). A mitigation strategy is outlined at Section 6.0 of the report.

4.4.14 It is considered that the mitigation strategy outlined in the above report is achievable at the site in accordance with the proposed layout presented at *Marchon (Phase 1 and 2) Whitehaven. Proposed Masterplan - August 2023* (Persimmon, 2023).

Other Protected Species / Animal Life

4.4.15 Appropriate survey effort and / or assessment in accordance with standard guidance, has been carried out to reasonably discount adverse effects on relevant protected species. No further surveys for other protected species are necessary to inform a planning application.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

5.1.1 Ecological guidance, based on the baseline surveys, has been provided to the design team throughout the preparation of the proposals plans, the landscape proposals and the planning application.

5.1.2 The recommendations and guidance provided in this section of the report follow 'The Mitigation Hierarchy' (i.e. avoid, mitigate, compensate) and describe actions accommodated by the proposals to avoid significant effects and minimise impacts where avoidance is not possible. In addition, and where possible, opportunities to enhance the ecological interest and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified to ensure compliance with Chapter 15, paragraph 180(d) of the NPPF which states:

'opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.

5.1.3 These recommendations aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.

5.1.4 All recommendations are appropriate to the geographical area, the habitats in the wider area, the wildlife present in the local area (and likely to use the site post-construction) and take into consideration the end use of the site.

5.2 Recommendations in Relation to Proposals Plans and Landscape Proposals

5.2.1 *Phase 1 Landscape Plan with POS. Drawing PHM-WW01 Rev D* (Westwood Landscape, 2023) has been prepared in accordance with the objectives listed below to ensure the proposals are policy compliant and meet best practice requirements.

5.2.2 The detailed proposals for 'Phase 2' will also be prepared in accordance with these objectives and the parameters as set out in the *Assessment of Biodiversity Net Gain* (ERAP (Consultant Ecologists) Ltd, 2023).

5.2.3 As creation of some of the habitats will require the preparation / inversion of soils it is advised that a detailed habitat creation / landscape plan with working method statements is prepared to outline the specific activities required.

Public Open Space / Habitat Areas

a. The area of public open space at the western area of 'Phase 1' is to provide a significant area of habitats that are complementary to the maritime cliffs and coastal heathland / grassland and will include:

- Coastal wildflower grassland (currently Boston Seeds Coastal Area Wildflower Mix that includes a number of plant species such as Viper's Bugloss, Evening Primrose, Hare's-foot Clover, Kidney Vetch and Wild Carrot that are also typically associated with OMH is proposed);
- Creation of bunds and ditches to create a varied terrain to replicate the ephemeral pools at the OMH and to create microhabitats / opportunities for invertebrates (including prey for reptiles, amphibians and bird species);
- Creation of hibernacula / log piles for colonisation by sheltering / hibernating reptiles, amphibians and small mammals and for colonisation by fungi and invertebrates;
- Copses of scrub, including Gorse, that provide opportunities for use by nesting and feeding bird species typical to the area and recorded during the 2019 and 2021 breeding bird surveys such as grasshopper warbler, linnet, stonechat and lesser redpoll;

- Creation of copses of dense Bramble and Gorse to provide reptile species with a refuge from cat access and the risk of predation (as advised in *Reptile Habitat Management Handbook* (Edgar, et al., 2010));
- Designation of specific pathways that act to provide a safe, alternate area for dog walking (away from the maritime cliffs and heath) and direct users towards controlled / designated entrances to the SSSI habitats / England Coastal Path / Cumbria Coastal Way;
- Demarcation of the interface between the residential area and the POS and controlled access the POS / wider area by the planting of kested[11] hedgerows with scattered trees and an associated linear ditch;
- Screening of the residential development, particularly areas that will be used by moving vehicles, from the POS and the maritime habitats to the west by the planting of native kested hedgerows and tree lines;
- Maximised habitat connectivity by use of kested hedgerows and tree planting (where appropriate);
- Inclusion of benches and seating features along the former mineral line 'Wagon Way' and at the far eastern edge of the POS to provide opportunities for walkers to meet and rest that is away from the designated sites; and
- Installation of litter bins (including dog waste) to encourage users to place dog waste for refuse collection (rather than deposition at the SSSI) which can assist in the reduction of phosphorus pollution (i.e. enrichment of the soil) by dog faeces (as suggested in *'Beware the dog: the ecological and environmental impact of pet dogs'* (Harris, S., 2023));

b. Other areas of POS around 'Phase 2' to provide a mosaic of habitats including species-rich, wildflower grassland, pools, ditches, bunds, scrub and scattered trees;

c. More formal areas of POS (i.e. mown amenity grassland and play areas) to be located at the eastern area of the site (closer to High Road / the existing built environment and away from the designated sites);

d. Use of seed mixes that contain Yellow-rattle (*Rhinanthus minor*). Yellow-rattle is semi-parasitic on grass species and can suppress grass growth, thereby reducing the mowing management requirements and reduce disturbances close to the SSSI;

Built Environment Areas

e. Design and implementation of an appropriate and sensitive lighting strategy to avoid any adverse effects on wildlife such as foraging bats, including the avoidance of lighting where not required. Lighting strategy to be prepared in accordance with reference to current guidance, namely:
   - *Guidance Note 08/23: Bats and Artificial Lighting at Night* (Institution of Lighting Professionals & Bat Conservation Trust, 2023); and
   - Bats and lighting: Overview of current evidence and mitigation guidance (Stone, 2014).

f. Arrange and align properties to create contiguous gardens;

g. Incorporation of features for wildlife such as boxes for roosting bats and nesting birds within the developed areas of the site (refer to **Section 5.5**);

h. Creation of habitat connectivity through the built environment by the planting of hedgerows and trees (that will provide stepping stones);

i. Ensure that the developed areas of the site are accessible to wildlife such as hedgehog (a Priority Species) by the installation of lifted gates and plot boundary fences and / or the accommodation of gaps to permit the passage of wildlife beneath (refer to **Insert 1**, below);

[11] Native hedgerows planted on low earth bunds

Insert 1: Showing wildlife access gap within fencing

j. Landscape planting within the development and areas of green infrastructure / habitat creation to be composed of native species and species such as fruit trees known to be of value for the attraction of wildlife.

5.2.4 The creation of the significant area of POS at the 'Phase 1' stage will secure the creation and establishment of habitats prior to the construction of the properties in 'Phase 2'. It is advised that this is beneficial as it will permit time for the new habitats to establish and for any remedial actions to be attended to (as identified by the monitoring to be detailed in a Landscape and Ecological Management Plan, refer to **Section 5.6**).

5.3 Homeowners' Pack / Advisory Leaflet and Signage

Homeowners' Pack / Advisory Leaflet

5.3.1 To address the potential risk of an increased recreational pressure on the designated sites and a zone of potential influence it is recommended that an advisory leaflet is distributed in the sale pack of the properties. The leaflet will provide the following guidance:

a. That the properties and site are within proximity to the designated sites for nature conservation, clearly set out the value, importance and sensitivity of the areas, identify the potentially damaging operations and also outline a 'responsible use code' such as advising the need to keep dogs on leads and keeping to the footpaths, for example; and

b. Identify other areas for recreation / dog walking, away from the sensitive areas and the public footpaths, with maps and walking distances, as needed.

5.3.2 *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022) also advises that the following information is included in the distributed information:

a. The presence of slow-worm and common lizard;

b. The protection afforded to these reptile species under wildlife legislation and their conservation status;

c. An overview of the habitats preferred by these species and their ecology;

d. Good practice to minimise adverse effects (i.e. how to avoid risk of fire) and disturbance of reptiles and their habitats; and

e. Where to find more information in relation to reptiles and what to do if an injured reptile is found (including a reptile brought in by a cat).

Signage

5.3.3 The information presented in the Homeowners' Pack and Advisory Leaflet can also be presented on interpretation boards to be installed along the footpaths and other appropriate areas in the site.

5.4 Protection of Existing Features During Construction and Construction Environment Management Plan (CEMP) for Biodiversity

Introduction

5.4.1 Based on the sensitive position of the site, the presence of Priority Habitats within and bordering the site, the presence of protected species (slow-worm and common lizard) and Priority Species (common toad), and the use of the habitats in the wider area by wintering and breeding birds it is recommended that site preparation and construction activities are informed by a CEMP for Biodiversity. The CEMP for Biodiversity will describe the following actions / measures:

Preparation of Programme of Works and Toolbox Talk

5.4.2 Owing to the presence of protected species and habitats and features that require protection at the site and the wider area, prior to the commencement of works it is essential that an ecologist / Ecological Clerk of Works (ECoW) is involved in the site preparation planning and the proposed programme of works.

5.4.3 In addition, in accordance with best practice, it is recommended that an Ecological Toolbox Talk is provided by an ecologist to all site personnel prior to the start of works.

Protection of On and Off-site Vegetation / Habitats to be Retained / Enhanced

5.4.4 During the construction phase, temporary protective demarcation fencing will be used to protect the vegetation and habitats to be retained (including the temporary retention of habitats prior to / during the translocation of reptile species) and the habitats to be enhanced. The fencing must remain in position until all areas have been developed to ensure protection is provided throughout the construction phase.

5.4.5 The fencing near trees will be in accordance with *BS5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

Protection of Water Quality

5.4.6 In the absence of updated guidance, the following Pollution Prevention Guidelines (PPG) will be adhered to:

a. PPG1: Basic good environmental practices (Environment Agency, 2013);

b. PPG5: Works in, near or over watercourses (Environment Agency, 2014);

c. PPG6: Construction and demolition sites (Environment Agency, 2012); and

d. PPG7: Operating refuelling sites (Environment Agency, 2011).

Dust Suppression, Incidents and Accidents

5.4.7 The risk of adverse effects on retained vegetation, habitats and wildlife as a result of dust, spills and leaks will be controlled by the application of best practice measures and appropriate environmental controls such as dust suppression, appropriate storage of chemicals and fuel, presence of spill kits and appropriate training of all on-site personnel.

Lighting

5.4.8 Paragraph 185c of the NPPF states that development should:

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

5.4.9 Any lighting to be used during the construction phase must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over the retained habitats, including the maritime habitats to the west, as lighting overspill may deter use by wildlife such as foraging bats and migrating birds.

Invasive Plant Species and Biosecurity

5.4.10 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Japanese Rose in the wild. The CEMP will accommodate an Invasive Plant Species Management Method Statement to outline the measures to be applied to minimise the risk of spread of the identified stands of invasive plants at the site (i.e. excavation and burial on site).

5.4.11 To minimise the risk of introduction of other invasive species to the site and Priority Habitats in the wider area all machinery / plant to be brought to the site must be clean. Wheels / tracks of machinery / plant must have been pressure washed before use at the site. No excessive remnant soil or plant material from other sites must be present on the machinery / plant or in the tyre treads as this may increase the risk of spread of non-native and invasive plant species e.g. Japanese Knotweed, Indian Balsam and Giant Hogweed.

Soil Management Plan

5.4.12 It is advised that the success of the proposed habitat creation and enhancement will be related to an appropriately detailed habitat creation / landscape plan. The Plan should be prepared with input from the groundworks contractor, ecologist, landscape architect and other specialists.

Nesting Birds

5.4.13 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive.

5.4.14 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

Wintering and Breeding Birds on Off-site Land

5.4.15 In accordance with best practice, reduction of noise during construction with limited working hours, noise limiters on machinery and, where appropriate, temporary acoustic fencing will be applied to minimise the temporary and short-term risk of disturbance of birds using the cliffs and maritime habitats in the wider area during the construction period.

Reptile Species

5.4.16 A reptile mitigation strategy is presented at Section 6.0 of the separate technical appendix *Reptile Presence / Absence Survey and Mitigation Strategy* (ERAP (Consultant Ecologists) Ltd, 2022). The strategy will form part of the CEMP.

Best Practice for the Protection of Wildlife

5.4.17 During the site preparation and construction operations, for the protection of wildlife (including amphibians), it is essential that the following best practice is applied:

a. No trenches must be left open overnight. Trenches or holes must be properly covered with a board or fitted with a means of escape (such as ramped edge or a sloping plank of timber). This will ensure that any inquisitive / other wildlife do not become trapped. Trenches / holes must be searched for wildlife prior to backfilling;

b. Any pipes must be stored with caps on (to prevent entry by wildlife);

c. No fires must be lit at the site;

d. Any chemicals or harmful materials must be safely and correctly stored so that they cannot be accessed by inquisitive wildlife;

e. Between the current time and the commencement of site clearance it is recommended that the current agricultural management at the site is continued and the habitats are not permitted to grow dense or rank which may increase the opportunities for attraction of sheltering wildlife. If this is not possible then arrangements must be made for the progressive flailing of the vegetation on the site prior to commencement of works on the site; and

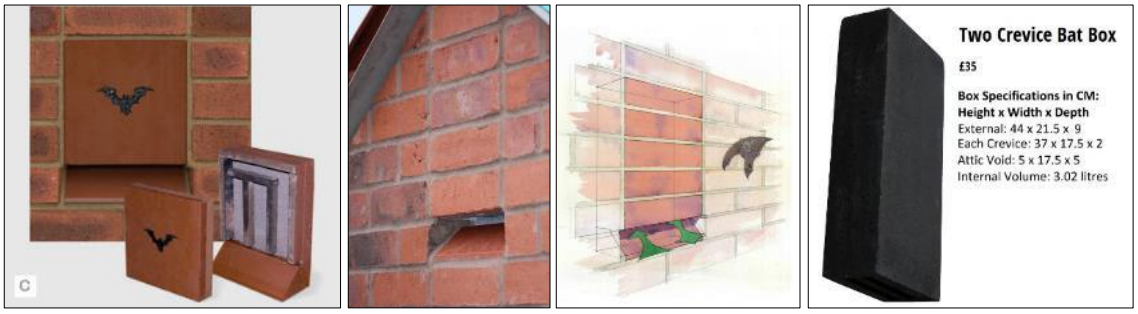
f. Any queries / issues in relation to wildlife on site must be directed to ERAP (Consultant Ecologists) Ltd (01772 750502).

5.5 Ecological Enhancement for Bat and Bird Species

Provisions for Roosting Bats

5.5.1 To enhance the opportunities at the site for roosting bats it is recommended that the development incorporates the installation of bat access panels at the new buildings.

5.5.2 The bat access panels should be sited at least 4 metres above ground level, ideally facing or close to areas of landscape planting or existing linear features. The access panels should not be positioned over windows or doorways where bat droppings may become a perceived nuisance. Once the development layout has been finalised, an ecologist will advise on the appropriate number and positions for the bat access panels.



Insert 2: Examples of integrated bat access panels and an externally mounted box[12]

Provisions for Nesting Birds

House Sparrow and Starling

5.5.3 House sparrows are associated with suburban areas. Monitoring suggests a severe decline in the UK house sparrow population, estimated as halving in rural areas, and dropping by 60% in towns and cities since the mid-1970's (RSPB, 2018).

5.5.4 House sparrow and starling are both Priority Species.

5.5.5 The installation of house sparrow terrace nest boxes and starling nest boxes is recommended at the new housing. The boxes will not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. Examples of suitable bird boxes are given below.

[12] Left to right: IBstock Enclosed Bat Box 'c' (left); Habibat Bat Access Panels (centre left and centre right) and Greenwood's Ecohabitat's two crevice bat box (right). Products with a brick face are illustrated, however the Habibat bat access panels can be supplied unfaced to enable the additional of matching material.

Insert 3: Schwegler 1SP House Sparrow Nesting Terrace and Vivara Pro Woodstone Starling Nest Box

5.5.6 Such bird boxes are available from the NHBS (www.nhbs.com) or Wild Care (www.wildcare.co.uk). ERAP (Consultant Ecologists) Ltd will advise on the appropriate number and siting of bird boxes once the development layout has been finalised.

Swift

5.5.7 The swift (*Apus apus*) has been added to *The Birds of Conservation Concern Red list* (Stanbury, et al., 2021) owing to the recorded recent declines and its identified status as a high conservation priority.

5.5.8 The construction of the residential properties provides an opportunity for the installation of additional nesting opportunities for swift to assist their conservation. Suitable swift nest boxes are illustrated at **Insert 4** below.

Insert 4: Examples of swift nest boxes[13]

5.6 Landscape and Ecological Management

5.6.1 A Landscape and Ecological Management Plan will be prepared for all retained and created habitats to ensure the long-term management is applied in accordance with nature conservation objectives and to maintain a safe and attractive site.

5.7 Assessment of Biodiversity Net Gain

5.7.1 The separate *Assessment of Biodiversity Net Gain* (ERAP (Consultant Ecologists) Ltd, 2023) and BNG Metric demonstrate that the proposals can achieve significant net gains for biodiversity.

5.7.2 As the planning application for the 'Phase 2' area of the site is made in outline the specific habitats are not confirmed. In this instance it has been appropriate to make reasonable assumptions on the habitats to be created, based on the location of the areas of POS and the areas of the site that cannot, for contaminated land reasons and other reasons, be built on. It is recognised that the BNG Metric will need to be updated when the detailed landscape proposals for Phase 2 are prepared. The separate

[13] From left to right No. 17A Schwegler Swift Nest Box (Triple Cavity) as installation (left), Manthorpe Swift Nesting Box (centre) and Ibstock Eco-habitat for Swift (right), all available from www.NHBS.com)

assessment of BNG therefore provides a series of parameters that should be adhered to during the preparation of the detailed landscape proposals at 'Phase 2' to have confidence in the delivery of BNG.

5.7.3 Long-term management of the proposed habitats is required to secure the proposed condition and will be secured by implementation of actions in a Landscape and Ecological Management Plan as recommended in the 2023 ecology report.

6.0 CONCLUSION

6.1 In the presence of the mitigation measures and habitat creation / landscape planting and a commitment to long-term habitat management, this report advises that the proposed residential development can be achieved in compliance with the NPPF, local planning policy and best practice.

6.2 Protection of off-site designated sites for nature conservation, Priority Habitat, creation of compensatory habitats and mitigation for associated relevant protected species and Priority Species is feasible in accordance with the proposals and by the implementation of the recommendations of this ecological assessment and the landscape strategy.

6.3 The separate *Assessment of Biodiversity Net Gain* (ERAP (Consultant Ecologists) Ltd, 2023) and BNG Metric demonstrate that the proposals will secure significant net gains for biodiversity.

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8.0 APPENDIX 1: TABLES

8.1 Photographs

Table 8.1: Photographs

Photo 1: Improved / modified grassland at 'Phase 1'

Photo 2: Less frequently mown improved / modified grassland at northern end of 'Phase 1' (Target Note 1)

Photo 3: Arable field (with former mineral line in the foreground)

Photo 4: Arable field

Photo 5: Vegetation along the former mineral line (Target Note 2)

Photo 6: Vegetation at retaining walls at former mineral line (Target Note 2)

Photo 7: Bare ground along former Marchon Works site access road (Target Note 3)

Photo 8: Mosaic of bare ground, sparse, ruderal vegetation and neutral grassland in the former Marchon Works (in 'Phase 2')

Photo 9: Mosaic of bare ground, sparse, ruderal vegetation and neutral grassland in the former Marchon Works

Photo 10: Mosaic of bare ground, sparse, ruderal vegetation and neutral grassland in the former Marchon Works

Photo 11: Mosaic of bare ground, sparse, ruderal vegetation and neutral grassland in the former Marchon Works

Photo 12: Mosaic of bare ground, sparse, ruderal vegetation and neutral grassland in the former Marchon Works

Photo 13: Neutral grassland in the former Marchon Works

Photo 14: Southern Marsh-orchid spike (Target Note 6)

Photo 15: Off-site area of dense scrub and tall-herb vegetation (Target Note 7)

Photo 16: Patch of Heather at site boundary (Target Note 8)

Photo 17: Coastal grassland and heathland at maritime cliffs (off-site)

Photo 18: Coastal grassland and heathland at maritime cliffs (off site) (Target Notes 4 and 5)

Photo 19: Paths through the Heather (off-site)

Photo 20: Paths through the Heather (off-site)

Photo 21: Coastal grassland and heathland at maritime cliffs (off site) (Target Notes 4 and 5)

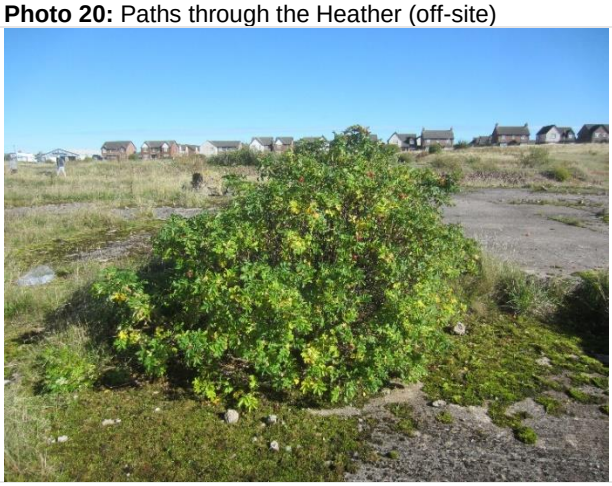


Photo 22: Japanese Rose within the site

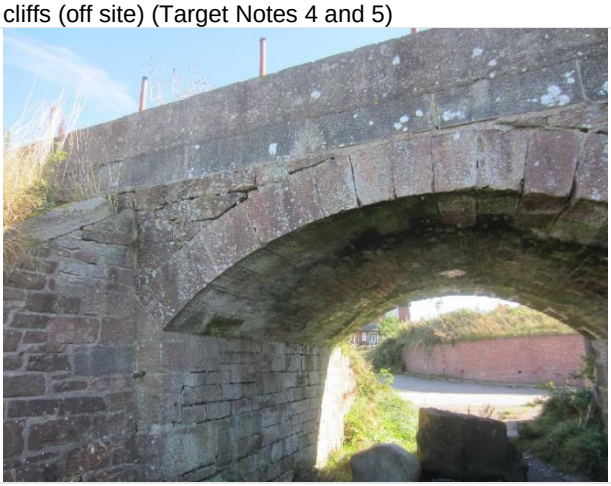


Photo 23: Stone bridge and abutments at the former mineral line (Target Note 9)

Photo 24: Stone bridge and abutments at the former mineral line (Target Note 9)

Photo 25: Stone bridge and abutments at the former mineral line (Target Note 9)

Photo 26: Stone bridge and abutments at the former mineral line (Target Note 9)

8.2 Plant Species Lists

Table 8.2: Plant Species List for the Managed Improved Grassland

Scientific Name	Common Name	DAFOR[1]	Cover
Cerastium fontanum	Common Mouse-ear	VLF	<1%
Cirsium vulgare	Spear Thistle	R	<1%
Dactylis glomerata	Cock's-foot	LA	<1%
Holcus lanatus	Yorkshire Fog	LF	<1%
Lolium perenne	Perennial Rye-grass	A*	90%
Plantago lanceolata	Ribwort Plantain	VLF	<1%
Plantago major	Greater Plantain	O	<1%
Ranunculus repens	Creeping Buttercup	F	5%
Rumex crispus	Curled Dock	O	<1%
Rumex obtusifolius	Broad-leaved Dock	O	<1%
Senecio jacobaea	Common Ragwort	R	<1%
Taraxacum officinale agg.	Dandelion	O	<1%
Trifolium repens	White Clover	F	5%
[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

Table 8.3: Plant Species List for the Less Frequently Mown Area of Improved Grassland (Target Note 1)

Scientific Name	Common Name	DAFOR[1]	Cover
Agrostis stolonifera	Creeping Bent	F/LVA	10%
Alopecurus pratensis	Meadow Foxtail	F	5%
Arrhenatherum elatius	False Oat-grass	F/LA	5%
Carex pendula	Pendulous Sedge	O	<1%
Cirsium arvense	Creeping Thistle	F	1%
Cirsium vulgare	Spear Thistle	O	<1%
Dactylis glomerata	Cock's-Foot	F	5%
Elytrigia repens	Common Couch	F/LA	20%
Epilobium hirsutum	Great Willowherb	VLA	<1%
Eupatorium cannabinum	Hemp Agrimony	VLA	<1%
Heracleum sphondylium	Common Hogweed	O	<1%
Holcus lanatus	Yorkshire-fog	F/LA	20%
Juncus effusus	Soft-rush	O	<1%
Lolium perenne	Perennial Rye-grass	F/LA	50%
Odontites vernus	Red Bartsia	VLF	<1%
Phleum pratense	Timothy-grass	F	5%
Plantago lanceolata	Ribwort Plantain	F	5%
Poa trivialis	Rough Meadow-grass	F	5%
Potentilla anserina	Silverweed	VLA	<1%
Ranunculus acris	Common Buttercup	LA	5%
Rubus fruticosus agg.	Bramble	LF	2%
Rumex crispus	Curled Dock	O	<1%
Rumex obtusifolius	Broad-leaved Dock	O	<1%
Senecio jacobaea	Common Ragwort	O	<1%
Trifolium repens	White Clover	A	15%
Urtica dioica	Common Nettle	F	5%
Vicia sativa	Common Vetch	O	<1%
[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

Table 8.4: Plant Species List for the Mineral Line Between the Improved Grassland and the Arable Land (Target Note 2)

Scientific Name	Common Name	DAFOR[1]	Cover
Achillea millefolium	Yarrow	LF	1%
Agrostis capillaris	Common Bent	F	5%
Arrhenatherum elatius	False Oat-grass	F	10%
Asplenium scolopendrium	Hart's-tongue Fern	O	<1%
Centaurea nigra	Common Knapweed	F	2%
Cerastium fontanum	Common Mouse-ear	O	<1%
Chamerion angustifolium	Rosebay Willowherb	LA	5%
Cirsium arvense	Creeping Thistle	O	1%
Cochlearia officinalis	Common Scurvy-grass	R	<1%
Dactylis glomerata	Cock's-foot	F	15%
Dryopteris filix-mas	Male-fern	O	<1%
Eupatorium cannabinum	Hemp Agrimony	O	<1%
Festuca rubra	Red Fescue	A*	35%
Heracleum sphondylium	Common Hogweed	O	<1%
Hieracium murorum	Wall Hawkweed	O	<1%
Hieracium pilosella	Mouse-ear Hawkweed	VLA	<1%
Hieracium umbellatum	Narrow-leaved Hawkweed	O	<1%
Holcus lanatus	Yorkshire-fog	F	5%
Leontodon autumnalis	Autumn Hawkweed	O	<1%
Lotus corniculatus	Common Bird's-foot-trefoil	VLA	<1%
Medicago lupulina	Black Medick	VLA	<1%
Plantago lanceolata	Ribwort Plantain	VLF	<1%
Poa annua	Annual Meadow-grass	VLA	<1%
Poa trivialis	Rough Meadow-grass	F	10%
Rubus fruticosus agg.	Bramble	A*	30%
Senecio jacobaea	Common Ragwort	O	<1%
Sonchus arvensis	Perennial Sow Thistle	O	<1%
Sonchus asper	Prickly Sow-thistle	O	<1%
Taraxacum officinale agg.	Dandelion	VLF	<1%
Trifolium repens	White Clover	VLA	<1%
Tussilago farfara	Colt's Foot	VLA	<1%
Urtica dioica	Common Nettle	F	5%
Verbascum thapsus	Great Mullein	R	<1%
Veronica persica	Common Field-speedwell	VLA	<1%
Vicia cracca	Tufted Vetch	VLF	<1%
[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

Table 8.5: Plant Species List for Earth Embankment Between the Improved Grassland and the Access Road (Target Note 3)

Scientific Name	Common Name	DAFOR[1]	Cover
Woody Species			
Crataegus monogyna	Hawthorn	O	<1%
Rosa canina	Dog-Rose	R	<1%
Sorbus aria	Common Whitebeam	R	<1%
Herb Species			
Achillea millefolium	Yarrow	VLF	<1%
Arrhenatherum elatius	False Oat-grass	A*	20%
Artemisia vulgaris	Common Mugwort	VLF	<1%
Asplenium ruta-muraria	Wall-rue	VLF	<1%
Asplenium scolopendrium	Hart's-tongue Fern	R	<1%
Calluna vulgaris	Heather	VLF	<1%
Centaurea nigra	Common Knapweed	F	25%
Chamerion angustifolium	Rosebay Willowherb	A	20%
Cirsium arvense	Creeping Thistle	F/LA	10%
Cirsium vulgare	Spear Thistle	O	<1%
Dactylis glomerata	Cock's-foot	A*	20%
Dryopteris filix-mas	Male-fern	O	<1%
Epilobium hirsutum	Great Willowherb	LVA	5%
Festuca arundinacea	Common Fescue	F	5%
Heracleum sphondylium	Common Hogweed	F	2%
Plantago lanceolata	Ribwort Plantain	VLA	<1%
Plantago major	Greater Plantain	VLF	<1%
Potentilla anserina	Silverweed	VLF	<1%
Rubus fruticosus agg.	Bramble	LA	25%
Rumex obtusifolius	Broad-leaved Dock	O	<1%
Tussilago farfara	Colt's Foot	VLF	<1%
Urtica dioica	Common Nettle	F/LA	10%
Vicia cracca	Tufted Vetch	LF	1%
Vicia sepium	Bush Vetch	O	<1%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

Table 8.6: Plant Species List for the Mosaic of Neutral Grassland and Ruderal / Ephemeral Vegetation over the Former Marchon Works Portion of the Site

Scientific Name	Common Name	DAFOR[1]	Cover
Woody Species			
Buddleia davidii	Butterfly-bush	R	<1%
Crataegus monogyna	Hawthorn	LF	1%
Fraxinus excelsior	Ash Sapling	R	<1%
Rosa canina	Dog-rose	R	<1%
Salix caprea	Goat Willow	LF	2%
Salix cinerea	Grey Willow	O/LF	2%
Sambucus nigra	Elder	O	<1%
Sorbus aria	Common Whitebeam	R	<1%
Ulex europaeus	Gorse	R	<1%
Herb Species			
Achillea millefolium	Yarrow	LF	<1%
Agrostis capillaris	Common Bent	F	5%
Agrostis stolonifera	Creeping Bent*	LA	1%
Arrhenatherum elatius	False Oat-Grass	F/LA	20%
Artemisia vulgaris	Common Mugwort	VLF	<1%
Bellis perennis	Daisy	VLA	<1%
Calluna vulgaris	Heather	VLA	<1%
Cardamine flexuosa	Wavy Bittercress*	R	<1%
Carex hirta	Hairy Sedge	VLF	<1%
Centaurea nigra	Common Knapweed	LF	2%
Cerastium fontanum	Common Mouse-ear	VLF	<1%
Chamerion angustifolium	Rosebay Willowherb	LVA	2%
Cirsium arvense	Creeping Thistle	F/LA	2%
Cirsium vulgare	Spear Thistle	O	<1%
Dactylis glomerata	Cock's-foot	F/LA*	20%
Dactylorhiza praetermissa	Southern Marsh-orchid	VLA	<1%
Daucus carota	Wild Carrot	O	<1%
Dryopteris filix-mas	Male-fern	O	<1%
Epilobium hirsutum	Great Willowherb	VLA	<1%
Equisetum arvense	Field Horsetail	VLA	<1%
Eupatorium cannabinum	Hemp Agrimony	O	<1%
Euphorbia helioscopia	Sun Spurge*	R	<1%
Festuca rubra	Red Fescue	A*	50%
Fragaria sp.	Strawberry	R	<1%
Geranium molle	Dove's-foot Crane's-bill*	VLA	<1%
Gnaphalium uliginosum	Marsh Cudweed	R	<1%
Heracleum sphondylium	Common Hogweed	VLA	1%
Hieracium pilosella	Mouse-ear Hawkweed*	VLA	<1%
Hieracium umbellatum	Narrow-leaved Hawkweed	O	<1%
Holcus lanatus	Yorkshire Fog	F	5%
Hypericum perforatum	Perforate St John's-wort	VLF	<1%
Hypochaeris radicata	Common Cat's-ear*	VLA	<1%
Juncus articulatus	Jointed Rush*	VLA	<1%
Juncus effusus	Soft Rush	VLF	<1%
Lactuca muralis	Wall Lettuce*	VLA	<1%
Leucanthemum vulgare	Ox-eye Daisy	VLA	<1%
Lolium perenne	Perennial Ryegrass	LA	2%
Lotus corniculatus	Common Bird's-foot-trefoil	VLA	<1%
Medicago lupulina	Black Medick	VLA	5%
Myosotis sp.	Forget-me-not species	R	<1%
Odontites vernus	Red Bartsia*	VLF	<1%
Oenothera biennis	Evening Primrose*	VLF	<1%
Plantago lanceolata	Ribwort Plantain	LF	1%
Poa annua	Annual Meadow-grass*	VLA	<1%
Poa pratensis	Smooth Meadow-grass	F	5%
Poa trivialis	Rough Meadow-grass	F	5%
Polypodium vulgare	Common Polypody	R	<1%
Potentilla anserina	Silverweed*	VLA	<1%

Scientific Name	Common Name	DAFOR[1]	Cover
Prunella vulgaris	Self-heal^	VLA	<1%
Ranunculus acris	Meadow Buttercup	R	<1%
Ranunculus repens	Creeping Buttercup	VLA	<1%
Reseda luteola	Weld^	R	<1%
Rosa rugosa	Japanese Rose	R	<1%
Rubus fruticosus agg.	Bramble	LA	2%
Rumex crispus	Curled Dock	O	<1%
Rumex obtusifolius	Broad-Leaved Dock	O	<1%
Sagina procumbens	Procumbent Pearlwort^	R	<1%
Scrophularia nodosa	Common Figwort^	R	<1%
Sedum acre	Biting Stonecrop^	LA	2%
Sedum sp.	Sedum (garden variety and not keyed out as Orpine)^	R	<1%
Senecio jacobaea	Common Ragwort^	O	<1%
Senecio vulgaris	Groundsel^	VLA	<1%
Sisymbrium officinale	Hedge Mustard^	VLA	<1%
Sonchus arvensis	Perennial Sow Thistle^	LF	<1%
Sonchus asper	Prickly Sow Thistle^	O	<1%
Stachys sylvatica	Hedge Woundwort	R	<1%
Taraxacum officinale agg.	Dandelion	O	<1%
Trifolium pratense	Red Clover	R	<1%
Trifolium repens	White Clover	LA	2%
Tripleurospermum inodorum	Scentless Mayweed^	R	<1%
Tussilago farfara	Colt's-foot	VLA	1%
Urtica dioica	Common Nettle	VLA	<1%
Veronica persica	Common Field Speedwell^	LF	<1%
Vicia cracca	Tufted Vetch	LF	<1%
Vicia sativa	Common Vetch	VLA	<1%
Vicia sepium	Bush Vetch	VLA	<1%
Vicia tetrasperma	Smooth Tare	VLA	<1%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

^ = Species more typically associated with the areas of sparse / ruderal vegetation / open mosaic habitats.

Table 8.7: Plant Species List (indicative species) at the Coastal Grassland and Heathland at Section of St. Bee's Head Adjacent to the Site

Scientific Name	Common Name
Achillea millefolium	Yarrow
Agrostis capillaris	Common Bent
Agrostis stolonifera	Creeping Bent
Angelica sylvatica	Angelica
Anthyllis vulneraria	Kidney Vetch
Calluna vulgaris	Heather
Centaurea nigra	Common Knapweed
Chamerion angustifolium	Rosebay Willowherb
Cynosurus cristatus	Crested Dog's-tail
Equisetum arvense	Field Horsetail
Festuca ovina	Sheep's Fescue
Festuca rubra	Red Fescue
Genista tinctoria	Dyer's Greenweed
Heracleum sphondylium	Common Hogweed
Holcus lanatus	Yorkshire-fog
Hypochaeris radicata	Common Cat's-ear
Juncus tenuis	Slender-rush
Lolium perenne	Perennial Rye-grass
Lotus corniculatus	Common Bird's-foot-trefoil
Medicago lupulina	Black Medick
Odontites verna	Red Bartsia
Plantago lanceolata	Ribwort Plantain
Plantago major	Greater Plantain
Plantago maritima	Sea Plantain
Poa annua	Annual Meadow-grass
Poa trivialis	Rough Meadow-grass
Polystichum setiferum	Soft Shield-fern
Rumex acetosella	Sheep's Sorrel
Salix cinerea	Grey Willow
Senecio jacobaea	Common Ragwort
Trifolium pratense	Red Clover
Trifolium repens	White Clover
Tussilago farfara	Colt's-foot
Vicia sylvatica	Wood Vetch

8.3 Results of Breeding Bird Surveys 2019 and 2021

Table 8.8: Results Breeding Bird Survey 1, 12th April 2019 (22 Species)

Scientific Name	Common Name	Times Observed	Total Seen	BOCC	Singing	Calling	In Flight	In Site	Outside Site	Flying Over Site
Turdus merula	Blackbird	1	1	Green	0	1	0	0	1	0
Corvus corone corone	Carrion crow	15	35	Green	0	0	4	23	10	2
Fulmarus glacialis	Fulmar	1	1	Amber	0	0	1	0	1	0
Carduelis carduelis	Goldfinch	2	9	Green	0	5	4	5	4	0
Larus argentatus	**Herring gull**	**14**	**55**	**Red**	**0**	**0**	**14**	**36**	**14**	**5**
Corvus monedula	Jackdaw	3	10	Green	5	0	0	10	0	0
Larus fuscus	Lesser black-backed gull	1	1	Amber	0	0	0	0	1	0
Carduelis cannabina	**Linnet**	**12**	**43**	**Red**	**0**	**26**	**15**	**12**	**23**	**8**
Carduelis cabaret	**Lesser redpoll**	**2**	**4**	**Red**	**0**	**0**	**4**	**0**	**0**	**4**
Anthus pratensis	Meadow pipit	16	52	Amber	4	3	45	6	10	36
Perdix perdix	**Grey partridge**	**1**	**2**	**Red**	**0**	**0**	**2**	**0**	**0**	**2**
Falco peregrinus	Peregrine	1	1	Green	0	0	1	0	0	1
Phasianus colchicus	Pheasant	1	1	Green	0	1	0	1	0	0
Motacilla alba	Pied wagtail	1	1	Green	0	0	1	0	1	0
Alauda arvensis	**Skylark**	**4**	**4**	**Red**	**4**	**0**	**0**	**3**	**1**	**0**
Sturnus vulgaris	**Starling**	**2**	**31**	**Red**	**0**	**0**	**31**	**0**	**0**	**31**
Carduelis spinus	Siskin	1	1	Green	0	0	1	0	1	0
Hirundo rustica	Swallow	1	1	Green	0	0	1	0	1	0
Oenanthe oenanthe	Wheatear	1	1	Amber	0	0	0	1	0	0
Columba palumbus	Wood pigeon	2	3	Green	0	0	3	0	3	**0**
Troglodytes troglodytes	Wren	4	4	Green	2	1	0	0	4	0
Phylloscopus trochilus	Willow warbler	1	1	Amber	1	0	0	0	1	0
Species listed in **bold** are Priority Species										

Table 8.9: Results Breeding Bird Survey 2, 7th June 2019 (24 Species)

Scientific Name	Common Name	Times Observed	Total Seen	BOCC	Singing	Calling	In Flight	With Food	Juvenile	In Site	Outside Site	Flying Over Site
Turdus merula	Blackbird	5	5	Green	0	0	0	0	1	0	5	0
Sylvia atricapilla	Blackcap	1	1	Green	1	0	0	0	0	0	1	0
Corvus corone corone	Carrion crow	1	1	Green	0	0	0	0	0	0	1	0
Phalacrocorax carbo	Cormorant	1	2	Green	0	0	2	0	0	0	2	0
Fringilla coelebs	Chaffinch	1	1	Green	1	0	0	0	0	0	1	0
Prunella modularis	**Dunnock**	**2**	**2**	**Amber**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
Carduelis carduelis	Goldfinch	12	25	Green	0	11	13	0	0	**7**	**11**	7
Larus argentatus	**Herring gull**	**12**	**16**	**Red**	**0**	**0**	**15**	**0**	**0**	**1**	**8**	**7**
Delichon urbica	House martin	2	2	Amber	0	0	2	0	0	0	1	1
Passer domesticus	**House sparrow**	**1**	**1**	**Red**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
Corvus monedula	Jackdaw	6	7	Green	0	0	5	0	0	2	0	5
Larus fuscus	Lesser black-backed gull	1	1	Amber	0	0	1	0	0	0	0	1
Carduelis cannabina	**Linnet**	**5**	**8**	**Red**	**0**	**1**	**6**	**0**	**0**	**0**	**8**	**0**
Anthus pratensis	Meadow pipit	15	19	Amber	4	1	2	3	0	6	11	2
Stercorarius longicaudus	Long-tailed skua	1	1	Green	0	0	1	0	0	0	1	0
Phasianus colchicus	Pheasant	1	1	Green	0	0	0	0	0	0	1	0
Alauda arvensis	**Skylark**	**8**	**9**	**Red**	**6**	**1**	**0**	**0**	**0**	**7**	**2**	**0**
Saxicola torquata	Stonechat	4	4	Green	0	1	0	1	1	0	4	0
Sturnus vulgaris	**Starling**	**11**	**321**	**Red**	**0**	**0**	**21**	**0**	**0**	**140**	**161**	**20**
Hirundo rustica	Swallow	4	6	Green	0	0	6	0	0	0	6	0
Turdus philomelos	**Song thrush**	**3**	**3**	**Red**	**1**	**0**	**0**	**0**	**2**	**0**	**3**	**0**
Sylvia communis	Whitethroat	14	17	Amber	7	4	0	0	0	5	12	0
Troglodytes troglodytes	Wren	3	3	Green	2	1	0	0	0	0	3	0
Phylloscopus trochilus	Willow warbler	2	2	Amber	1	0	0	0	0	0	2	0
Species listed in **bold** are Priority Species												

Table 8.10: Results Breeding Bird Survey 3, 14th May 2021 (25 Species)

Scientific Name	Common Name	Times Observed	Total Seen	BOCC	Singing	Calling	In Flight	Nesting Material	With Food	In Site	Outside Site	Flying Over Site
Turdus merula	Blackbird	2	2	Green	2	0	0	0	0	0	2	0
Cyanistes caeruleus	Blue tit	1	1	Green	0	0	0	1	0	0	1	0
Corvus corone corone	Carrion crow	10	26	Green	0	0	6	0	0	15	8	3
Phylloscopus collybita	Chiffchaff	1	1	Green	1	0	0	0	0	0	1	0
Prunella modularis	**Dunnock**	**1**	**1**	**Amber**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Carduelis carduelis	Goldfinch	3	10	Green	0	6	2	0	0	6	4	0
Uria aalge	Guillemot	1	1	Amber	0	0	0	0	0	0	1	0
Larus argentatus	**Herring gull**	**9**	**24**	**Red**	**0**	**0**	**11**	**1**	**0**	**1**	**20**	**3**
Corvus monedula	Jackdaw	15	25	Green	0	0	9	0	0	15	3	7
Falco tinnunculus	Kestrel	1	1	Amber	0	0	0	0	0	1	0	0
Carduelis cannabina	**Linnet**	**9**	**32**	**Red**	**2**	**2**	**11**	**0**	**0**	**21**	**5**	**6**
Carduelis cabaret	**Lesser redpoll**	**3**	**9**	**Red**	**0**	**0**	**9**	**0**	**0**	**0**	**7**	**2**
Anthus pratensis	Meadow pipit	4	4	Amber	0	0	0	0	0	1	3	0
Haematopus ostralegus	Oystercatcher	1	1	Amber	0	0	1	0	0	0	1	0
Perdix perdix	**Grey partridge**	**2**	**4**	**Red**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**
Phasianus colchicus	Pheasant	1	1	Green	0	1	0	0	0	0	1	0
Alauda arvensis	**Skylark**	**3**	**3**	**Red**	**3**	**0**	**0**	**0**	**0**	**2**	**1**	**0**
Saxicola torquata	Stonechat	4	4	Green	0	0	0	0	1	1	3	0
Sturnus vulgaris	**Starling**	**7**	**45**	**Red**	**0**	**0**	**15**	**0**	**0**	**30**	**0**	**15**
Carduelis spinus	Siskin	1	3	Green	0	0	3	0	0	0	0	3
Hirundo rustica	Swallow	2	3	Green	0	0	3	0	0	0	3	0
Oenanthe oenanthe	Wheatear	3	3	Amber	0	0	0	0	0	2	1	0
Sylvia communis	Whitethroat	10	10	Amber	6	1	0	0	0	4	6	0
Columba palumbus	Wood pigeon	1	1	Green	0	0	0	0	0	0	1	0
Troglodytes troglodytes	Wren	1	1	Green	1	0	0	0	0	0	1	0
Species highlighted in **bold** are Priority Species												

Table 8.11: Results Breeding Bird Survey 4, 7th June 2021 (25 Species)

Scientific Name	Common Name	Times Observed	Total Seen	BOCC	Singing	Calling	In Flight	Nesting Material	With Food	Juvenile	In Site	Outside Site	Flying Over Site
Turdus merula	Blackbird	10	10	Green	1	0	1	0	1	2	1	8	1
Corvus corone corone	Carrion crow	6	9	Green	0	0	2	0	0	0	4	4	1
Phalacrocorax carbo	Cormorant	2	3	Green	0	0	3	0	0	0	0	3	0
Fringilla coelebs	Chaffinch	1	1	Green	0	0	0	0	0	0	0	1	0
Prunella modularis	**Dunnock**	**3**	**3**	**Amber**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
Locustella naevia	**Grasshopper warbler**	**1**	**1**	**Red**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Carduelis carduelis	Goldfinch	6	17	Green	1	0	15	0	0	0	2	5	10
Larus argentatus	**Herring gull**	**15**	**33**	**Red**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**24**	**9**
Passer domesticus	**House sparrow**	**2**	**2**	**Red**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**
Corvus monedula	Jackdaw	2	4	Green	0	0	1	0	0	0	3	0	1
Falco tinnunculus	Kestrel	2	2	Amber	0	0	1	0	0	0	0	2	0
Larus fuscus	Lesser black-backed gull	1	1	Amber	0	0	1	0	0	0	0	1	0
Carduelis cannabina	**Linnet**	**4**	**9**	**Red**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**6**	**3**
Carduelis cabaret	**Lesser redpoll**	**1**	**1**	**Red**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Turdus viscivorus	Mistle thrush	1	1	Amber	0	0	0	0	0	0	0	1	0
Pica pica	Magpie	1	1	Green	0	0	1	0	0	0	0	0	1
Anthus pratensis	Meadow pipit	10	11	Amber	1	1	2	1	1	0	5	6	0
Haematopus ostralegus	Oystercatcher	1	2	Amber	0	0	2	0	0	0	0	2	0
Phasianus colchicus	Pheasant	1	1	Green	0	1	0	0	0	0	0	1	0
Alauda arvensis	**Skylark**	**5**	**7**	**Red**	**3**	**2**	**0**	**0**	**0**	**0**	**6**	**1**	**0**
Saxicola torquata	Stonechat	3	3	Green	2	1	0	0	0	0	0	3	0
Carduelis spinus	Siskin	1	1	Green	0	0	1	0	0	0	0	0	1
Sylvia communis	Whitethroat	7	8	Amber	6	2	0	0	0	0	2	6	0
Troglodytes troglodytes	Wren	1	1	Green	1	0	0	0	0	0	0	1	0
Phylloscopus trochilus	Willow warbler	1	1	Amber	1	0	0	0	0	0	0	1	0

Species highlighted in **bold** are Priority Species

Table 8.12: Results Breeding Bird Survey 5, 22nd June 2021 (23 Species)

Scientific Name	Common Name	Times Observed	Total Seen	BOCC	Singing	Calling	In Flight	With Food	In Site	Outside Site	Flying Over Site
Turdus merula	Blackbird	1	1	Green	0	0	0	0	0	1	0
Corvus corone corone	Carrion crow	4	7	Green	0	0	2	0	3	4	0
Carduelis carduelis	Goldfinch	1	3	Green	0	0	3	0	0	0	3
Larus argentatus	**Herring gull**	**4**	**4**	**Red**	**0**	**0**	**4**	**0**	**0**	**2**	**2**
Delichon urbica	House martin	1	1	Amber	0	0	1	0	0	1	0
Passer domesticus	**House sparrow**	**1**	**1**	**Red**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Corvus monedula	Jackdaw	1	2	Green	0	0	2	0	0	0	2
Falco tinnunculus	Kestrel	2	2	Amber	0	0	0	0	1	1	0
Carduelis cannabina	**Linnet**	**9**	**15**	**Red**	**1**	**0**	**12**	**0**	**0**	**9**	**6**
Anthus pratensis	Meadow pipit	4	4	Amber	1	2	0	1	3	1	0
Perdix perdix	**Grey partridge**	**1**	**1**	**Red**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
Lagopus lagopus	Red grouse	1	1	Amber	0	0	0	0	0	0	1
Corvus corax	Raven	1	1	Green	0	0	1	0	0	1	0
Corvus frugilegus	Rook	1	1	Green	0	0	1	0	0	0	1
Alauda arvensis	**Skylark**	**6**	**6**	**Red**	**4**	**0**	**0**	**0**	**4**	**2**	**0**
Saxicola torquata	Stonechat	2	2	Green	0	1	0	0	2	0	0
Sturnus vulgaris	**Starling**	**1**	**7**	**Red**	**0**	**0**	**7**	**0**	**0**	**0**	**7**
Hirundo rustica	Swallow	2	2	Green	0	0	2	0	0	1	1
Riparia riparia	Sand martin	1	4	Amber	0	0	4	0	0	4	0
Turdus philomelos	**Song thrush**	**4**	**4**	**Red**	**0**	**0**	**0**	**2**	**1**	**3**	**0**
Sylvia communis	Whitethroat	5	5	Amber	4	0	0	0	0	5	0
Troglodytes troglodytes	Wren	2	2	Green	2	0	0	0	1	1	0
Phylloscopus trochilus	Willow warbler	1	1	Amber	1	0	0	0	0	1	0
Species highlighted in **bold** are Priority Species											

9.0 APPENDIX 2: FIGURES

Figure 1: Aerial Image of the Site, Surrounding Habitats and Nearby Designated Sites

Figure 2: **Phase 1 Habitat and Vegetation Map**

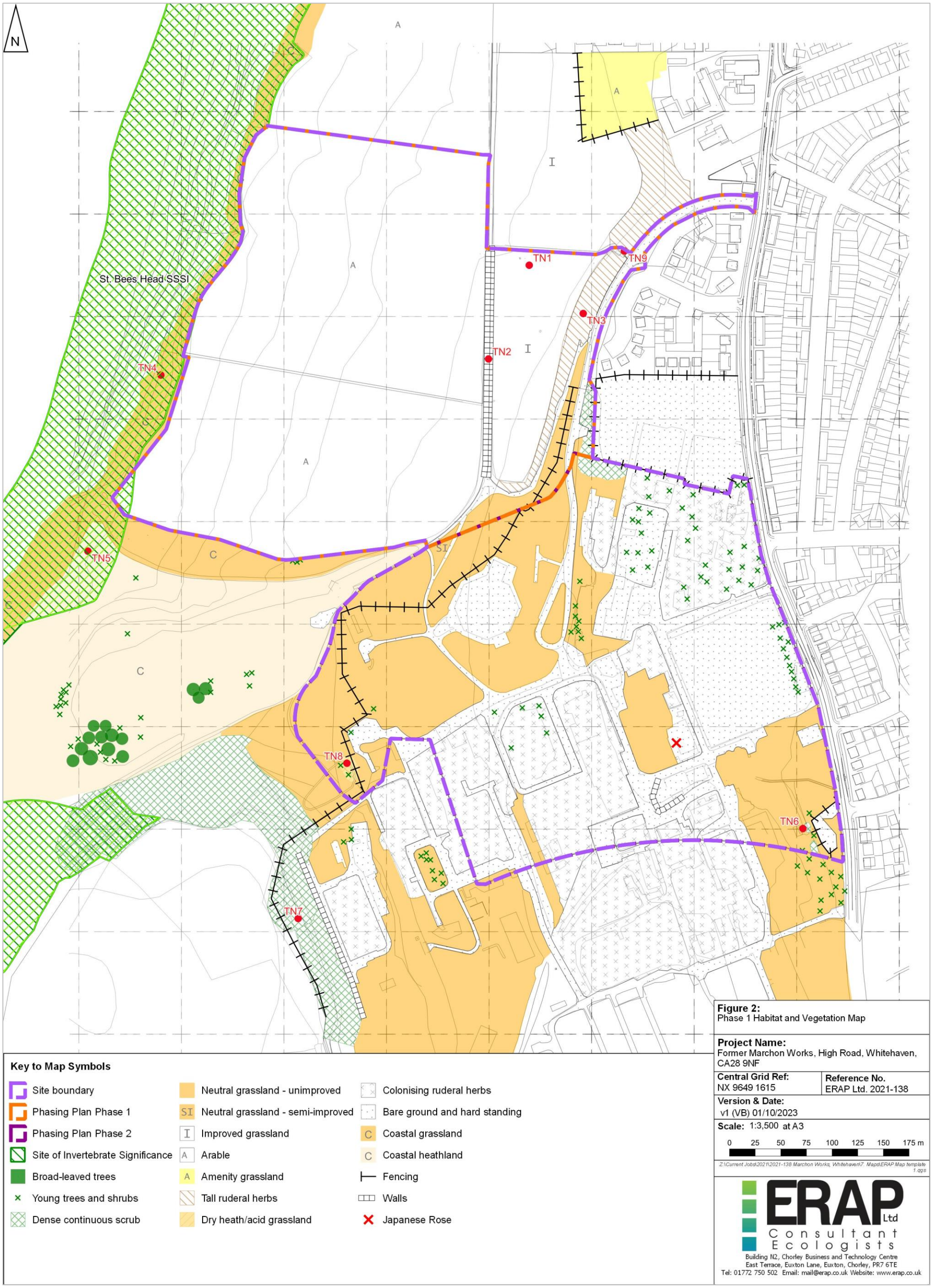
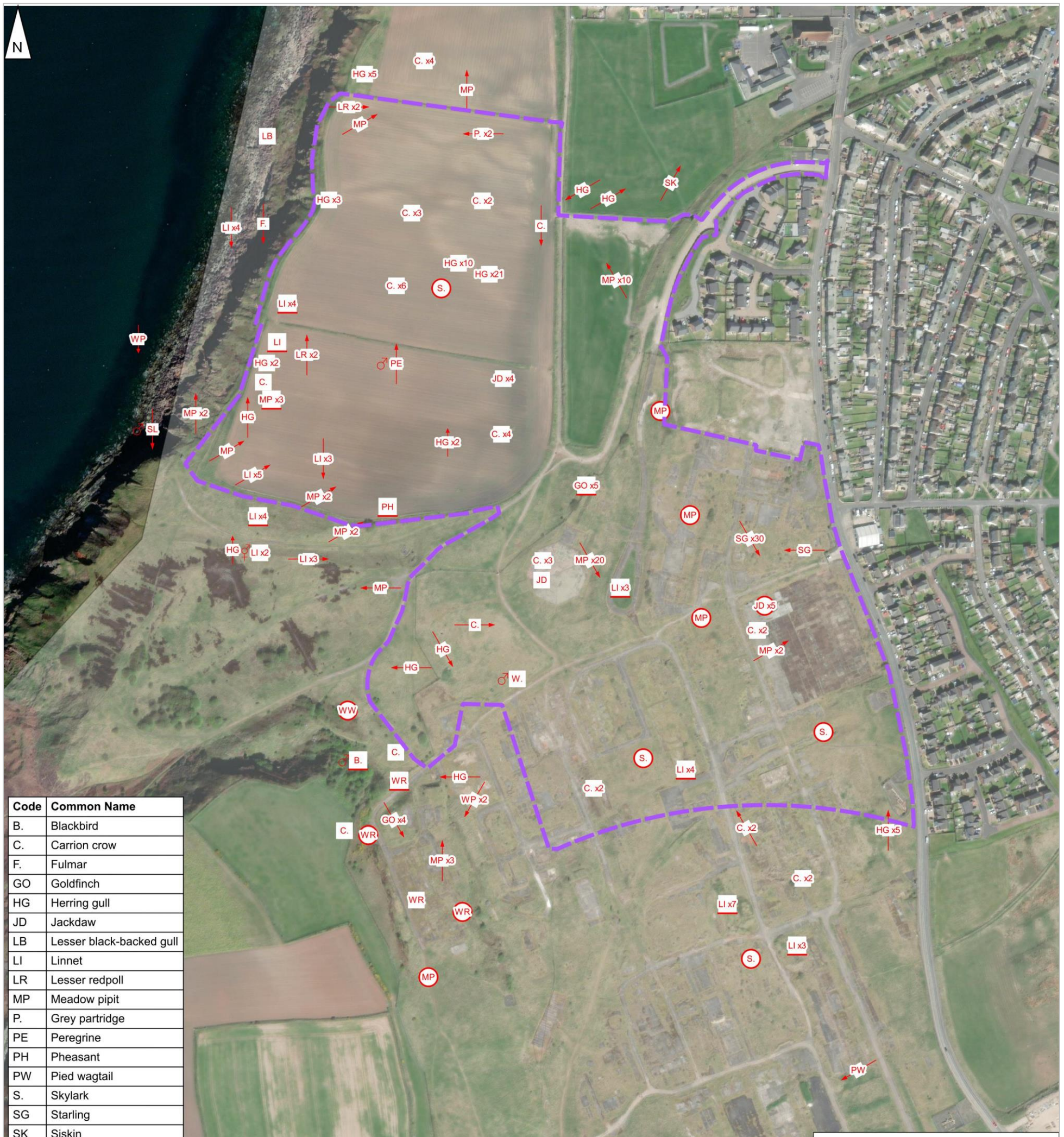


Figure 3: **Plan to Show Results of First 2019 Breeding Bird Survey 12.04.2019**



Code	Common Name
B.	Blackbird
C.	Carrion crow
F.	Fulmar
GO	Goldfinch
HG	Herring gull
JD	Jackdaw
LB	Lesser black-backed gull
LI	Linnet
LR	Lesser redpoll
MP	Meadow pipit
P.	Grey partridge
PE	Peregrine
PH	Pheasant
PW	Pied wagtail
S.	Skylark
SG	Starling
SK	Siskin
SL	Swallow
W.	Wheatear
WP	Wood pigeon
WR	Wren
WW	Willow warbler

Key to Map Symbols

- Site boundary
- Singing
- Calling
- In flight
- ♂ Male
- ♂♀ Male & Female

Source Image: ESRI World Imagery

Figure 3:
Plan to Show Results of First 2019 Breeding Bird Survey 12.04.2019

Project Name:
Former Marchon Works, High Road, Whitehaven, CA28 9NF

Central Grid Ref:	**Reference No.**
NX 9649 1615	ERAP Ltd. 2021-138

Version & Date:
v1 (CH) 27/01/2022

Scale: 1:4,000 at A3

0 50 100 150 200 m

Z:\Current Jobs\2021\2021-138 Marchon Works, Whitehaven\7. Maps\ERAP Map template 1.qgs

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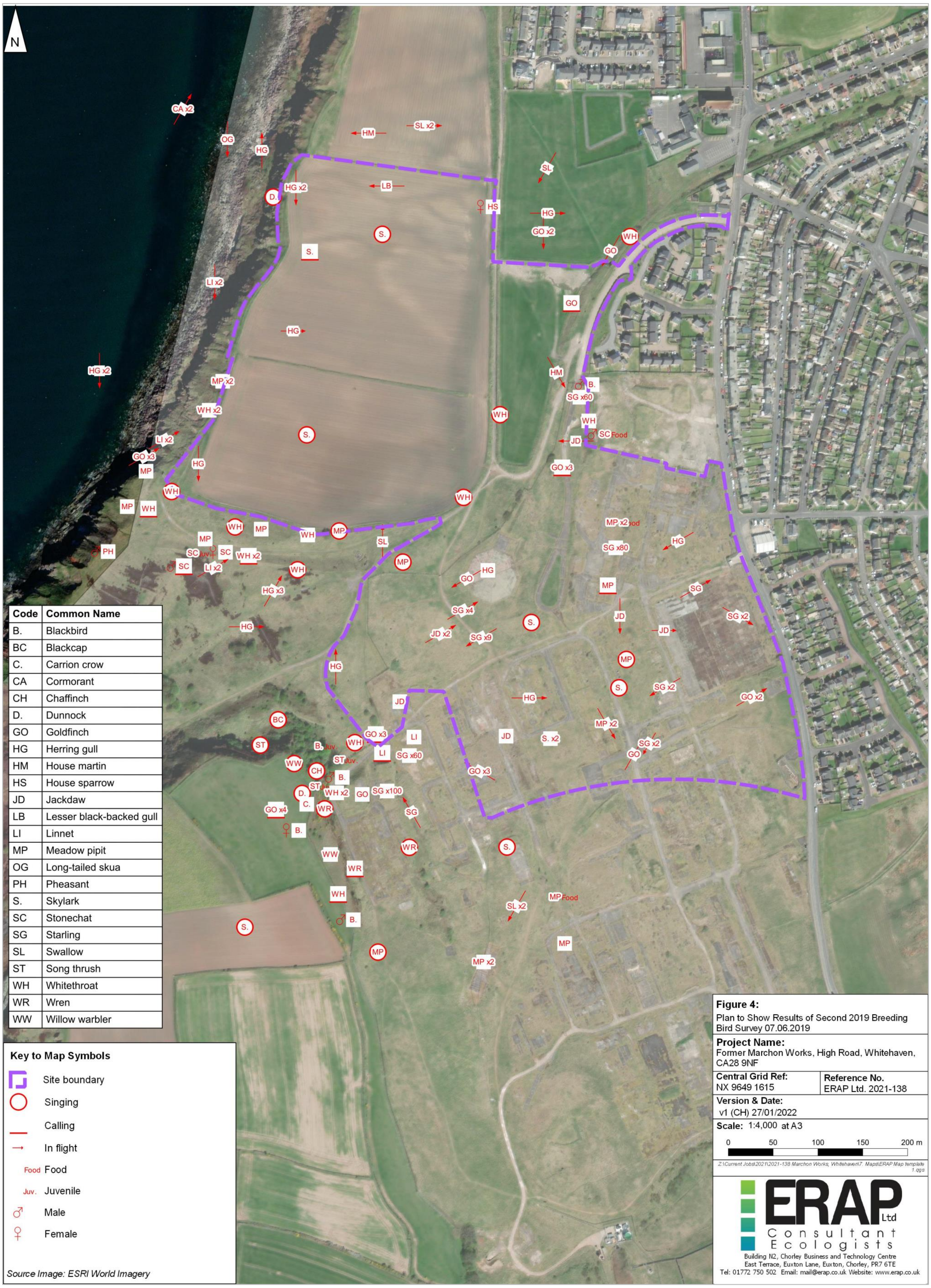
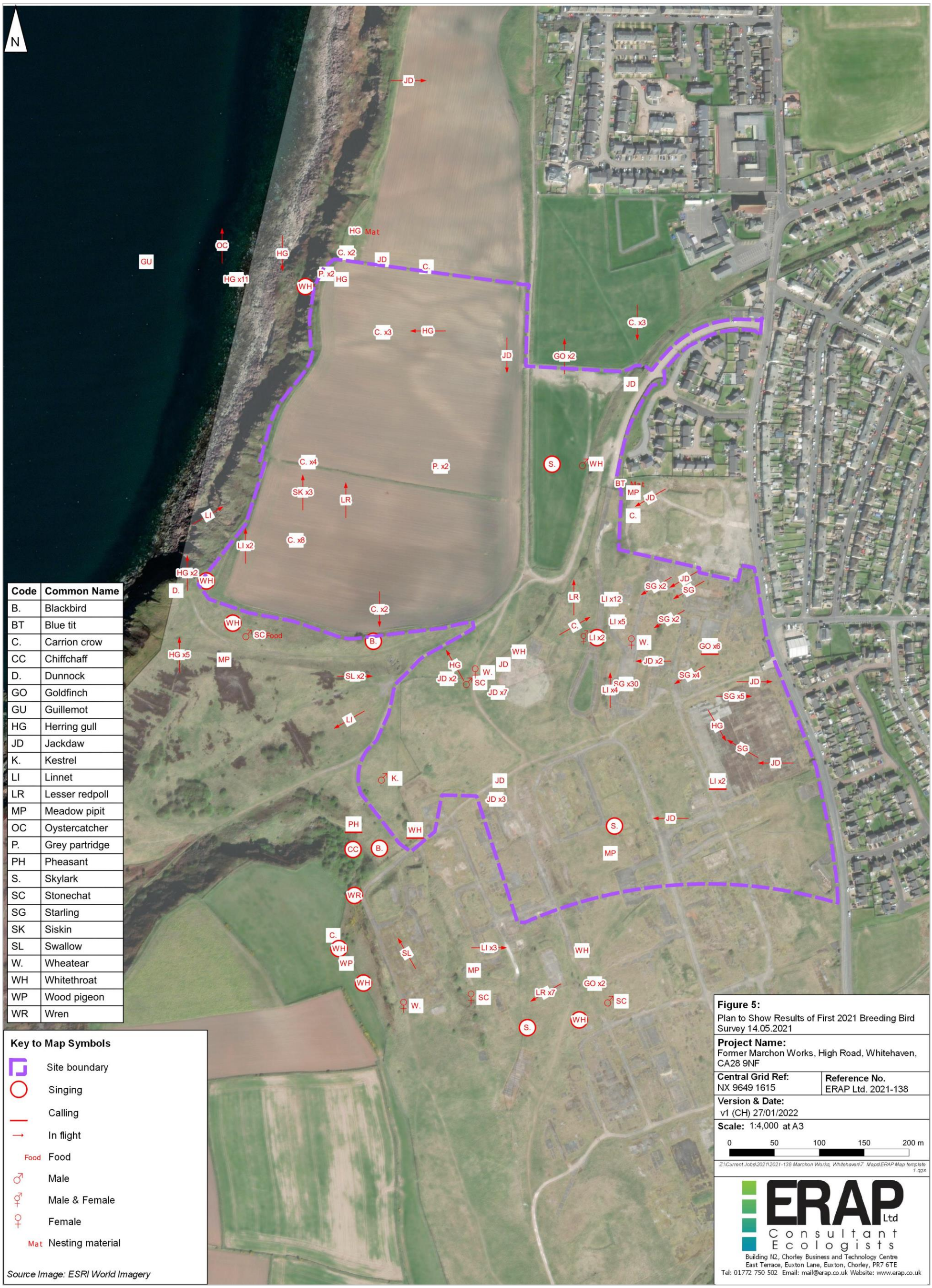
Figure 4: **Plan to Show Results of Second 2019 Breeding Bird Survey 07.06.2019**



Code	Common Name
B.	Blackbird
BC	Blackcap
C.	Carrion crow
CA	Cormorant
CH	Chaffinch
D.	Dunnock
GO	Goldfinch
HG	Herring gull
HM	House martin
HS	House sparrow
JD	Jackdaw
LB	Lesser black-backed gull
LI	Linnet
MP	Meadow pipit
OG	Long-tailed skua
PH	Pheasant
S.	Skylark
SC	Stonechat
SG	Starling
SL	Swallow
ST	Song thrush
WH	Whitethroat
WR	Wren
WW	Willow warbler

Figure 5: **Plan to Show Results of First 2021 Breeding Bird Survey 14.05.2021**



Code	Common Name
B.	Blackbird
BT	Blue tit
C.	Carrion crow
CC	Chiffchaff
D.	Dunnock
GO	Goldfinch
GU	Guillemot
HG	Herring gull
JD	Jackdaw
K.	Kestrel
LI	Linnet
LR	Lesser redpoll
MP	Meadow pipit
OC	Oystercatcher
P.	Grey partridge
PH	Pheasant
S.	Skylark
SC	Stonechat
SG	Starling
SK	Siskin
SL	Swallow
W.	Wheatear
WH	Whitethroat
WP	Wood pigeon
WR	Wren

Key to Map Symbols

- Site boundary
- Singing
- Calling
- In flight
- Food — Food
- ♂ Male
- ♀ Male & Female
- ♀ Female
- Mat — Nesting material

Source Image: ESRI World Imagery

Figure 5:
Plan to Show Results of First 2021 Breeding Bird Survey 14.05.2021

Project Name:
Former Marchon Works, High Road, Whitehaven, CA28 9NF

Central Grid Ref: NX 9649 1615

Reference No. ERAP Ltd. 2021-138

Version & Date: v1 (CH) 27/01/2022

Scale: 1:4,000 at A3

0 50 100 150 200 m

Z:\Current Jobs\2021\2021-138 Marchon Works, Whitehaven\7. Maps\ERAP Map template 1.qgs

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Tel: 01772 750 502 Email: mail@erap.co.uk Website: www.erap.co.uk

Figure 6: **Plan to Show Results of Second 2021 Breeding Bird Survey 07.06.2021**

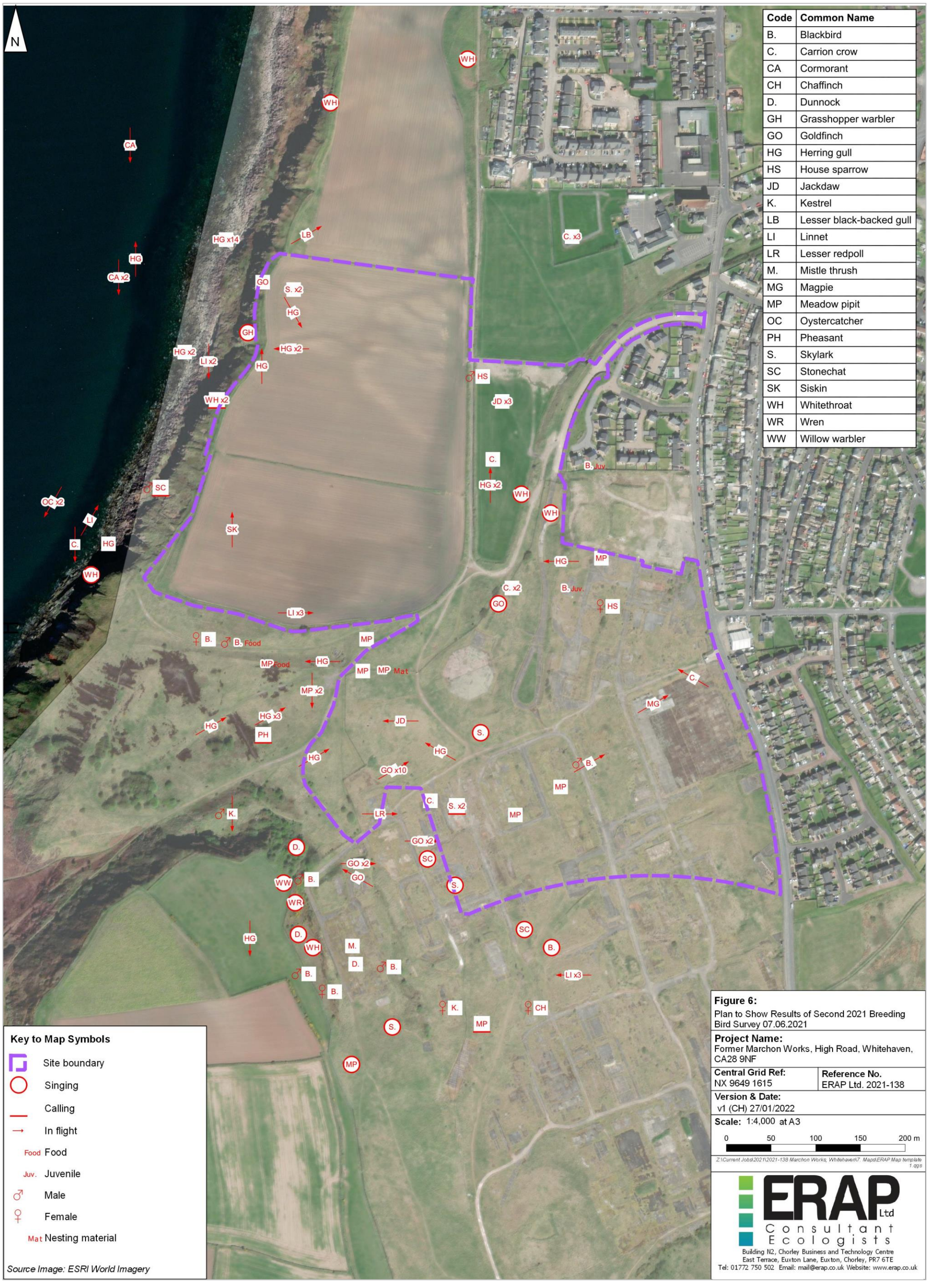

Figure 7: **Plan to Show Results of Third 2021 Breeding Bird Survey 22.06.2021**