

Report to:-
Quarryplan (GB) Ltd
The Borough Mall
Wedmore
Somerset
BS28 4EB

August 2014

**PHASE 1 SURVEY
OF A PROPOSED EXTENSION
OF SWANWORTH QUARRY,
WORTH MATRAVERS,
SWANAGE, DORSET
BH19 3LE**

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**PHASE 1 SURVEY OF A PROPOSED EXTENSION OF SWANWORTH QUARRY,  
WORTH MATRAVERS, SWANAGE, DORSET BH19 3LE.****1. SUMMARY**

1.1.1 In order to establish habitat types (and their extent), and provide a predictive assessment of their likely dependent fauna, AEcol were commissioned by Quarryplan (GB) Ltd to perform a Phase 1 (JNCC 2003) survey of approximately 30.7 ha of land to the north of Swanworth Quarry, Worth Matravers, Swanage, Dorset BH19 3LE.

1.1.2 The Phase 1 survey comprised:-

- A desk-study including a search for historical biological data relating to the site and a stratified radius performed by Dorset Environmental Records Centre (DERC);
- Phase 1 habitat mapping to the method set out in the *Handbook for Phase 1 Habitat Survey: A technique for environmental audit* (JNCC 2003) on 13<sup>th</sup> August 2014;
- An assessment of the conservation value of the habitats present against the criteria set for Priority Habitats within the UK Biodiversity Action Plan; and
- A predictive assessment of the potential dependent legally protected and/or UK Biodiversity Action Plan (BAP) fauna using published scientific accounts.

1.1.3 The conclusions of the Swanworth Quarry Extension Phase 1 survey are as follows:-

1. The site has eight Statutory Wildlife Sites within a 2 km radius comprising Isle of Portland to Studland Cliffs Special Area of Conservation (SAC), St Albans Head to Durlston Head SAC, Dorset Heaths SAC, Dorset Heathlands Ramsar, Corfe Common Site of Special Scientific Interest (SSSI), South Dorset Coast SSSI, Blashenwell Farm Pit SSSI and Dorset Area of Outstanding Natural Beauty (AONB);
2. The site has 11 non-Statutory Wildlife Sites within a 1 km radius comprising Westhill Wood Site of Nature Conservation Interest (SNCI), Afflington Wood SNCI, The Plantation SNCI, Swanworth Quarry Local Geological Site (LGS), Swanworth Quarry Habitat Restoration Site (HRS), Coombe Bottom HRS, West of the Lookout HRS, West of Downshay Wood HRS, South of the Lookout HRS, West of Afflington Wood HRS and Kingston Toll Conservation Verge;
3. The site holds 11 Phase 1 (JNCC 2003) habitat types which encompass two Priority Habitats within the UK Biodiversity Action Plan comprising A1.1.1 – Woodland / Broadleaved / Semi-natural, which qualifies as ‘Lowland Mixed Deciduous Woodland’ within the UK BAP criteria and J2.1.2 – Miscellaneous / Boundaries / Intact Hedge / Species-poor, which qualifies as ‘Hedgerows’ within the UK BAP criteria;
4. The site holds a moderately diverse flora but no legally protected and/or UK BAP Priority Species of plants were recorded;
5. The site holds suitable habitat for 68 (38% overall county fauna) UK BAP Priority Species of invertebrates;
6. The site holds no suitable habitat for any legally protected and/or UK BAP

Priority Species of fish;

7. The site holds suitable terrestrial habitat for two (67% overall county fauna) legally protected and/or UK BAP Priority Species of amphibian comprising great crested newt *Triturus cristatus* and common toad *Bufo bufo*. Great crested newts are legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*. Both species are listed as Priority Species within the UK Biodiversity Action Plan;
  8. The site holds suitable habitat for four (67% overall county fauna) legally protected and/or UK BAP Priority Species of reptile comprising slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, grass snake *Natrix natrix* and adder *Vipera berus*. All four species are legally protected under the *Wildlife & Countryside Act 1981 (& as amended)* and are listed as Priority Species within the UK Biodiversity Action Plan;
  9. The site holds suitable habitat for 41 (41% overall county fauna) Schedule 1 and/or UK BAP Priority Species of birds. The nests of all wild birds are protected under the *Wildlife & Countryside Act 1981 (& as amended)*;
  10. The site holds suitable habitat for six (75% overall county fauna) legally protected and/or UK Biodiversity Action Plan Priority Species of mammals (excluding bats) comprising common dormouse *Muscardinus avellanarius*, harvest mouse *Micromys minutus*, brown hare *Lepus europaeus*, hedgehog *Erinaceus europaeus*, badger *Meles meles* and polecat *Mustela putorius*. Common dormice are legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*, badgers are legally protected under the *Protection of Badgers Act 1992* and five of these species (i.e. excluding badger) are listed as Priority Species within the UK Biodiversity Action Plan;
  11. The site holds suitable habitat for all of Dorset's overall 16 bat species (100% overall county fauna) comprising barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, Bechstein's bat *Myotis bechsteinii*, Brandt's bat *M. brandtii*, Daubenton's bat *M. daubentonii*, whiskered bat *M. mystacinus*, Natterer's bat *M. nattereri*, Leisler's bat *Nyctalus leisleri*, noctule *N. noctula*, Nathusius' pipistrelle *Pipistrellus nathusii*, common pipistrelle *P. pipistrellus*, soprano pipistrelle *P. pygmaeus*, brown long-eared bat *Plecotus auritus*, grey long-eared bat *P. austriacus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *R. hipposideros*. All bat species and their roosts are legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*. Barbastelle, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat are listed as Priority Species within the UK Biodiversity Action Plan.
- 1.1.4 The IEEM (2006) suggest that a clear rationale should be given for deciding which features and resources should be subject to more detailed consideration within EcIA. Taking a simplistic approach, and defining a trigger for survey as: the potential for a legally protected species to occur within a site; and/or a minimum 50% of the total county UK BAP Priority fauna to occur within a site, in order to produce a robust assessment of the overall Phase 1 survey site the following surveys should be considered as a minimum:-

- Great crested newt terrestrial survey (optimum survey period July through September);
- Reptile survey (optimum survey period April through June and September);
- Breeding bird survey (optimum survey period March through July);
- Dormouse survey (optimum survey period April through September);
- Badger survey (optimum survey period December through March); and
- Bat survey (optimum survey period foraging presence/absence – May through October, roosting presence/absence – potentially full year).

## **2. BACKGROUND**

### **2.1 General**

- 2.1.1 In order to establish habitat types (and their extent), and provide a predictive assessment of their likely dependent fauna, AEcol were commissioned by Quarryplan (GB) Ltd to perform a Phase 1 (JNCC 2003) survey of approximately 30.7 ha of land to the north of Swanworth Quarry, Worth Matravers, Swanage, Dorset BH19 3LE.
- 2.1.2 AEcol is an independent ecological consultancy with competence in species survey and habitat assessment, restoration and management in the UK (see [www.aecol.co.uk](http://www.aecol.co.uk)).
- 2.1.3 This report presents the findings of:-
- A desk-study;
  - Phase 1 habitat mapping to the method set out in the *Handbook for Phase 1 Habitat Survey: A technique for environmental audit* (JNCC 2003);
  - An assessment of the conservation value of the habitats present against the criteria set for Priority Habitats within the UK Biodiversity Action Plan; and
  - A predictive assessment of the potential dependent legally protected and/or UK Biodiversity Action Plan fauna using published scientific accounts.

## **3. LEGISLATIVE & POLICY MECHANISMS**

### **3.1 General**

- 3.1.1 This section summarises the legal and conservation policy mechanisms that determine the need for specific surveys.

### **3.2 National Planning Policy Framework (NPPF)**

- 3.2.1 In the most basic terms, Paragraph 109 of the NPPF states that “*The planning system should contribute to and enhance the natural and local environment by... minimising impacts on biodiversity and providing net gains in biodiversity where possible...*”. In addition, Paragraph 117 identifies the need for planning policies to identify and map

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components of local ecological networks (both designated sites and stepping stones in between), and promote the preservation, restoration and enhancement of UK Biodiversity Action Plan Priority Habitats and ecological networks, whilst also promoting the protection and recovery of Priority Species. In particular, the NPPF highlights that any development proposal on land within or outside a Site of Special Scientific Interest (SSSI) or any other 'irreplaceable' habitat (such as ancient woodland or veteran trees), that might have a negative effect upon the site interest, should be refused unless the need for, and benefits of, the development in that location clearly outweigh the consequential loss or damage.

- 3.2.2 Specific legislation and policy relating to habitats and species is summarised in the following sub-sections, however, it is not the remit of an ecologist to provide planning advice, and where doubt exists the reader should defer to a qualified and experienced planner.

|                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Note:</b> AEcol have no legal specialism and are in no way legally qualified. Reference to legislation made in broad terms within relevant sections of this report is included purely to identify conservation mechanisms etc. For detailed interpretation, or where doubt exists as to the legality of actions, qualified legal advice should be sought.</p> |
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### **3.3 *The Conservation of Habitats and Species Regulations 2010***

- 3.3.1 *The Conservation of Habitats and Species Regulations 2010* consolidate all the various amendments made to *The Conservation (Natural Habitats, &c.) Regulations 1994* in respect of England and Wales, which transposed Council Directive 92/43/EEC into national law. The Regulations provide for:-

- The designation and legal protection of 'European Sites';
- The legal protection of 'European Protected Species' (EPS); and
- The adaptation of planning and other controls for the protection of European Sites.

### **3.4 *Wildlife & Countryside Act 1981 (& as amended)***

- 3.4.1 *The Wildlife & Countryside Act 1981 (& as amended)* is the principle mechanism for the legislative protection of wildlife sites and species in Great Britain.

### **3.5 UK Biodiversity Action Plan**

- 3.5.1 The UK Biodiversity Action Plans (UK BAP) were established in order to provide detailed strategies for the conservation of the most threatened habitats and species at a national level (JNCC 2001). Such habitats and species are known as Priority Habitats and Priority Species. Lists of Priority Habitats and Species are updated regularly to ensure they remain relevant to the true conservation situation.

- 3.5.2 In order to satisfy the requirement for Planning Authorities to promote the preservation, restoration and enhancement of UK Biodiversity Action Plan Priority

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Habitats and recovery of Priority Species, the Planning Authority need to know the location and extent of any UK Biodiversity Action Plan Priority Habitats occurring within a site that is proposed for development, as well as Priority Species which either occur within the site, or primarily outside the site but for which the site represents an important part of that species range (i.e. bats that may forage over the site in a specific part of the year but roost elsewhere, or migratory birds that may overwinter in the site but are absent for the greater part of the spring and summer).

### **3.6 Hedgerows Regulations 1997**

3.6.1 Some hedgerows are protected by the *Hedgerows Regulations 1997*. Hedgerows are graded on a two-tier system; ‘important’ and ‘unimportant’. In order to qualify as important, hedgerows must meet criteria set out within the *Regulations* encompassing wildlife, historic and landscape aspects. Hedgerows that qualify as important under the *Hedgerows Regulations 1997* should only be breached or removed following the application for, and receipt of, a ‘Hedgerow Removal Notice’ from the Local Planning Authority. A Hedgerow Removal Notice will typically be granted for:-

- Making a new opening in substitution for an existing opening which gives access to land, and where the existing opening is in-filled within eight months of the new breach;
- Obtaining access to land where another means of access is not available or only available at disproportionate cost; and
- For carrying out development for which planning permission has been granted.

## **4. ASSESSMENT METHODS**

### **4.1 General**

4.1.1 The wildlife value of the existing habitats within the Swanworth Quarry Extension site was assessed applying established principles, for example as set out in *Nature Conservation in Environmental Assessment* (Ramsey 1994), *Guidelines for Baseline Ecological Assessment* (Institute of Environmental Assessment 1995) and the *Guidelines for Ecological Impact Assessment in the United Kingdom* (EcIA) issued by the Institute of Ecology and Environmental Management in 2006.

4.1.2 By considering conservation legislation in respect of sites and species, and also UK Biodiversity Action Plan Priority Habitats and Species (both within the survey site and within pre-defined radii) it is considered that the initial ecological assessment thus far performed accords with British Standard BS 42020 *Biodiversity – Code of practice for planning and development*. However, the Standard recommends that ecologists refer not just to national policies, but also local biodiversity objectives and targets. The assessment thus far performed has not yet given consideration to the potential for a “...significant population of national or local Red List or notable species” to occur within the site. This is due to the objective of this assessment, which was to provide a broad overview of the habitats present in order to define the need for further focused surveys (as appropriate) that might serve to identify the

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status of such a population where potential exists. In addition, BS 42020 recommends that ecological reports in support of planning include a detailed description of any potential effects upon biodiversity to ensure significant negatives are addressed. Consideration of a development scheme proposal is beyond the remit of this assessment. Therefore no assessment of potential impacts upon biodiversity that might enable the application of the ‘mitigation hierarchy’ (in order to define and describe measures to resolve potential negative effects i.e. avoidance, mitigation or compensation) has been performed. As a result, it is concluded that this assessment may be as yet insufficient to support a Planning Application in itself.

- 4.1.3 The approach to predictive faunal assessment within this report has been tailored by AEcol to ensure a consistent standard is maintained in all stages of ecological assessment from the outset, regardless of the size or character of the site. Review and interpretation of desk-study data, in combination with Phase 1 habitat mapping, are assessed following a clearly defined process of reasoning based upon documented scientific accounts for each group and their individual species. This standardisation endeavours to ensure a reasoned, repeatable and balanced approach is taken at all stages of the planning application process, in order to safeguard against the potential for ‘culpable ignorance’ due to subjectivity. It should however be noted that any recommendations made within this report assume a comprehensive inventory of the survey footprint is required. This need may to be significantly reduced in scope depending upon the nature and extent of any subsequent scheme proposed.

## 4.2 Desk-study

- 4.2.1 A data-search centring on Ordnance Survey (OS) grid reference SY966785 was commissioned from Dorset Environmental Records Centre (DERC) and the results formed the basis of the desk-study. However, Local Records Centres (LRC) seldom hold a comprehensive record of all the ecological surveys performed or species recorded within a given locality. Furthermore, the records held may be incomplete and ‘un-determined’ by any third-party referee who might ‘weed-out’ erroneous data. Finally, overly large search radii (particularly when used in relation to sedentary species) often reward the end user with misleading results, themselves leading to misuse of resources in unnecessary surveys and needless discussion. In an effort to counteract these potential negative influences by providing a full list of sites, and species that might potentially be present in the locality (based on both the species distribution and known commuting range), historic biological data relating to the Swanworth Quarry Extension site was requested as follows:-
- A list of all Statutory Wildlife Sites within a 2 km radius of the survey site;
  - A list of all non-Statutory Wildlife Sites within a 1 km radius of the survey site;
  - A list of all legally protected and/or UK Biodiversity Action Plan Priority Species of invertebrates known to occur in Dorset;
  - A list of all legally protected and/or UK Biodiversity Action Plan Priority Species of amphibians, reptiles, birds and mammals known to occur in Dorset;

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- A search of historic data-sets for historic records of legally protected and/or UK Biodiversity Action Plan Priority Species of flora and fauna occurring within a 500 m radius of the site centroid (SY966785);
  - A search of historic data-sets for records of bat-roosts occurring within a 5 km radius of the site centroid, and of in-flight records within a 1 km radius (the larger search radius requested for bat-roosts is based on a review of typical nightly foraging ranges. A copy of the review is provided at Appendix A).
- 4.2.2 The data were filtered to remove incomplete species records, and the individual merits of the remaining species records are then discussed as follows:-
- whether or not the site is within the species known geographical range (i.e. whether the species occurs or has historically occurred anywhere in the County);
  - whether there is evidence to suggest the species has historically occurred within the site;
  - whether there is evidence to suggest the species has historically occurred outside the site, but the Phase 1 survey site falls within the known commuting range of the species; and
  - whether or not the site held suitable habitat for the species during the Phase 1 survey.
- 4.2.3 The desk-study results are summarised within the relevant contextual, botanical and faunal sub-sections.

### 4.3 Survey

- 4.3.1 A Phase 1 (JNCC 2003) survey was undertaken, applying the method and criteria defined in *Handbook for Phase 1 habitat survey: A technique for environmental audit* (JNCC 2003) on 13<sup>th</sup> August 2014. Dominant vegetation types and plant species were recorded. Where plant identification was uncertain (and where the plant was sufficiently developed for confident identification), specimens were keyed using Stace (1991), Hubbard (1954) or Poland & Clement (2009) and the distribution and status of uncommon plants were assessed against Preston *et al.* (2002). A list of all plant species recorded at the Swanworth Quarry Extension is provided at Appendix B.

### 4.4 Predictive assessment

- 4.4.1 The results of the desk-study and Phase 1 survey were combined and assessed in order to provide a hypothesis as to the potential dependent fauna that might occur within the site, or outside of the site but within commuting distance, by comparing historic evidence, habitat information, survey results and known ecological requirements of the target species. The likely presence of each species was then assigned a status on an increasing scale as:-
1. **Presumed Absent:** the site is outside the species accepted geographical range;
  2. **Improbable:** the site is within the geographical range of a given species but holds no primary habitat, and there is no historic evidence to support a

- hypothesis that the species has occurred within the site or outside the site but within the species typical commuting range;
3. **Marginal:** the site is within the geographical range but holds no primary habitat. However, there is historic evidence to support a hypothesis that the species has occurred within or outside the site and within the species typical commuting range. N.B. The presence of a 'Marginal' species might be of importance when considering intended habitat changes. For example, the presence of the legally protected great crested newt *Triturus cristatus* in the immediate locality might be a factor in the design of a particular mineral development that will envisage the creation of lagoon systems that might allow the species to colonise a previously unsuitable area, and thereby have operational impacts upon the quarry during its life and in the restoration phase;
  4. **Potential:** the site is within the geographical range and holds primary habitat, but there is no historic evidence to support a hypothesis that the species has occurred within or outside the site and within the species typical commuting range;
  5. **Probable:** the site is within the geographical range, holds primary habitat and there is evidence to suggest the species historically occurred within the site, or outside the site but within the species typical commuting range; or
  6. **Present:** the species, or conclusive evidence that the species occurs within the site, was encountered during the Phase 1 survey.

## 4.5 Personnel

- 4.5.1 Personnel responsible for each aspect of the appraisal are provided at Table 1.

**Table 1. Surveyors and reporting.**

| TASK           | PERSONNEL                                                          |
|----------------|--------------------------------------------------------------------|
| Desk-study     | Leanne Butt BSc MSc ACIEEM and Christy Tolliday BSc MSc.           |
| Phase 1 survey | Leanne Butt, Louis Pearson BSc MSc GradCIEEM and Christy Tolliday. |
| Reporting      | Leanne Butt, Louis Pearson and Christy Tolliday.                   |

### Statement of Authority

- 4.5.2 This assessment was performed by Henry Andrews MSc MCIEEM, Leanne Butt BSc MSc ACIEEM, Louis Pearson BSc MSc GradCIEEM and Christy Tolliday BSc MSc.
- 4.5.3 Henry Andrews is an ecologist with competence in botanical and faunal surveys. In addition to a Master's Degree in Biological Recording and Species Identification, he is Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and holds licences to survey for great crested newts, sand lizards *Lacerta agilis*, smooth snakes *Coronella austriaca*, common dormice *Muscardinus avellanarius* and all bat species in England. He has designed successful EPS Development Licences in respect of the genus and species as set out, which included habitat creation, species translocation and post-development

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monitoring spanning 5, 10, 15 and 25 years plus. He has been contracted to appear as an expert witness at Public Enquiry, and is the author of the *Bat Tree Habitat Key* (Andrews *et al.* 2013).

- 4.5.4 Leanne Butt is an ecologist with a Bachelor's Degree in Zoology (dissertation in ground beetles as indicators of woodland biodiversity), and a Master's degree in Wildlife Management and Conservation in which her dissertation studied the effects of rhododendron *Rhododendron ponticum* as an invasive species upon woodland biodiversity using ground beetles and breeding birds as indicators. In addition to competence in invertebrate sampling techniques and breeding bird survey, she is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and holds licences to survey for great crested newts and common dormice in England.
- 4.5.5 Louis Pearson is an ecologist with a Bachelor's Degree in Marine Biology (dissertation on marine reserves as strategy for fisheries management) and a Master's Degree in Ecology & Management of the Natural Environment in which his dissertation comprised a botanical study of visitor pressure in natural habitats. In addition to botanical surveys, Louis has competence in a wide range of ecological surveys and sampling analysis and is a Graduate member of the CIEEM.
- 4.5.6 Christy Tolliday is an ecologist with a Bachelor's Degree in Biology (dissertation in the effect of climate change on temperate zooplankton) and a Master's Degree in Conservation & Biodiversity in which her dissertation comprised a comparative analysis of the effect of differing tidal and weather aspects on the diving rate of European shags *Phalacrocorax aristotelis*. Christy holds a licence to survey for great crested newts in England.

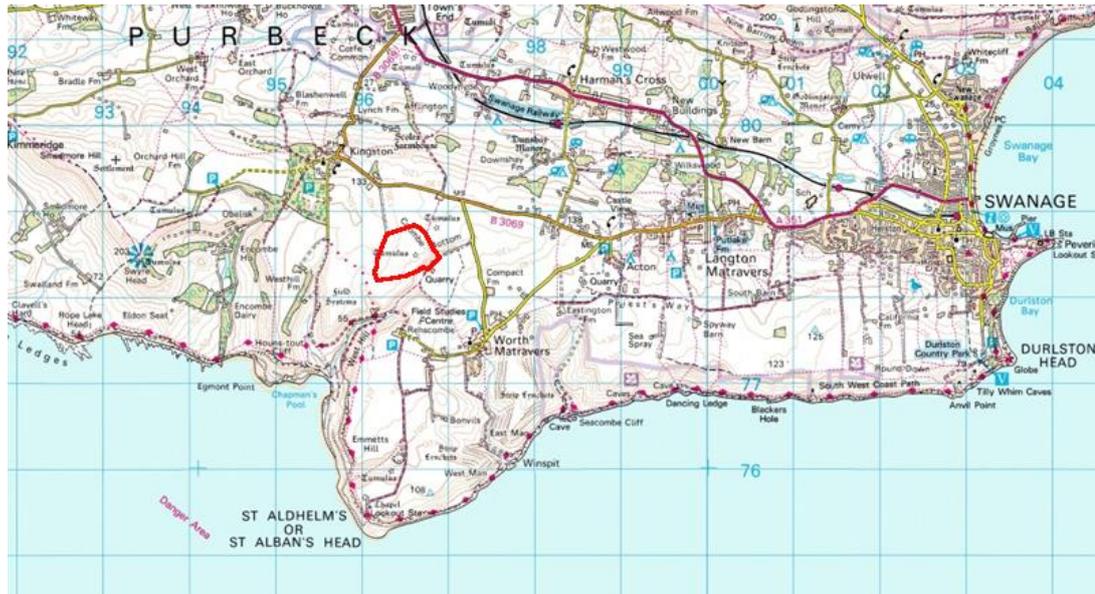
## **4.6 Constraints**

- 4.6.1 Constraints in respect of the scope of Phase 1 surveys and the criteria set out within BS 42020 are identified and discussed at Paragraph 4.1.2.
- 4.6.2 Constraints in relation to historical data are identified and discussed at Paragraph 4.2.2.
- 4.6.3 No constraints were encountered during the Phase 1 survey.

## **5. CONTEXT**

### **5.1 General**

- 5.1.1 The Swanworth Quarry Extension site (hereafter referred to as 'the site') is approximately 30.7 ha in size and located c. 1.13 km north-west of Worth Matravers and to the south-west of Corfe River, at OS grid reference SY966785. The site is located in an area of pastoral and arable land. Figure 1 shows the location and extent of the Swanworth Quarry Extension Phase 1 survey site.



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**Figure 1. The location and extent of the Swanworth Quarry Extension Phase 1 survey site.**

## 5.2 Statutory Wildlife Sites

5.2.1 The DERC data-search returned details of eight Statutory Wildlife Site designations within a 2 km radius of the site centroid comprising:-

- Isle of Portland to Studland Cliffs Special Area of Conservation (SAC);
- St Albans Head to Durlston Head SAC;
- Dorset Heaths SAC;
- Dorset Heathlands Ramsar;
- Corfe Common Site of Special Scientific Interest (SSSI);
- South Dorset Coast SSSI;
- Blashenwell Farm Pit SSSI; and
- Dorset Area of Outstanding Natural Beauty (AONB).

### Special Area of Conservation (SAC)

5.2.2 SAC are designated under the EC Habitats Directive and comprise areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SAC are designated and legally protected under *The Conservation of Habitats and Species Regulations 2010*. Sites which have been submitted to the European Commission by Government, but not yet formally adopted by the Commission, are referred to as candidate Special Areas of Conservation (cSAC).

5.2.3 Isle of Portland to Studland Cliffs SAC is located directly adjacent to the south-east boundary of the Phase 1 survey site. The SAC is c. 1447.5 ha in surface area and

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encompasses South Dorset Coast SSSI. The Priority Features, for which the SAC is designated, are the Annex I habitats and Annex II species:-

- 1230 – Vegetated sea cliffs of the Atlantic and Baltic Coasts;
- 6210 – Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometelia*) (\*important orchid sites);
- 1210 – Annual vegetation of drift lines; and
- 1654 – Early gentian *Gentianella anglica*.

5.2.4 St Albans Head to Durlston Head SAC is located approximately 1.27 km to the south-east of the Phase 1 survey site. The SAC is c. 287.22 ha in surface area and encompasses South Dorset Coast SSSI. The Priority Features, for which the SAC is designated, are the Annex I habitats and Annex II species:-

- 1230 – Vegetated sea cliffs of the Atlantic and Baltic Coasts;
- 6210 – Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometelia*) (\*important orchid sites);
- 1654 – Early gentian *Gentianella anglica*; and
- 1304 – Greater horseshoe bat *Rhinolophus ferrumequinum*.

5.2.5 Dorset Heaths SAC is located approximately 1.62 km to the north of the Phase 1 survey site. The SAC is c. 5730.73 ha in surface area and encompasses Corfe Common SSSI. The Priority Features, for which the SAC is designated, are the Annex I habitats and Annex II species:-

- 4010 – Northern Atlantic wet heaths with *Erica tetralix*;
- 4030 – European dry heaths;
- 7150 – Depressions on peat substrates of the *Rhynchosporion*;
- 6410 – *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*);
- 7210 – Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (\*Priority feature);
- 7230 – Alkaline fens;
- 9190 – Old acidophilous oak woods with *Quercus robur* on sandy plains;
- 1044 – Southern damselfly *Coenagrion mercuriale*; and
- 1166 – Great crested newt *Triturus cristatus*.

#### Ramsar Sites

5.2.6 Ramsar sites were designated under the Ramsar Convention on Wetlands of International Importance as holding populations of European Importance of bird species listed on Annex I to the Directive.

5.2.7 Dorset Heathlands Ramsar is located approximately 1.62 km to the north of the Phase 1 survey site. The Ramsar is c. 6681.54 ha in surface area and comprises Corfe Common SSSI. The Ramsar is cited for:-

- Annex I habitat: 4010 – Northern Atlantic wet heaths with *Erica tetralix*;
- Dry and wet heaths;
- Valley mire and fen;
- Southern damselfly;

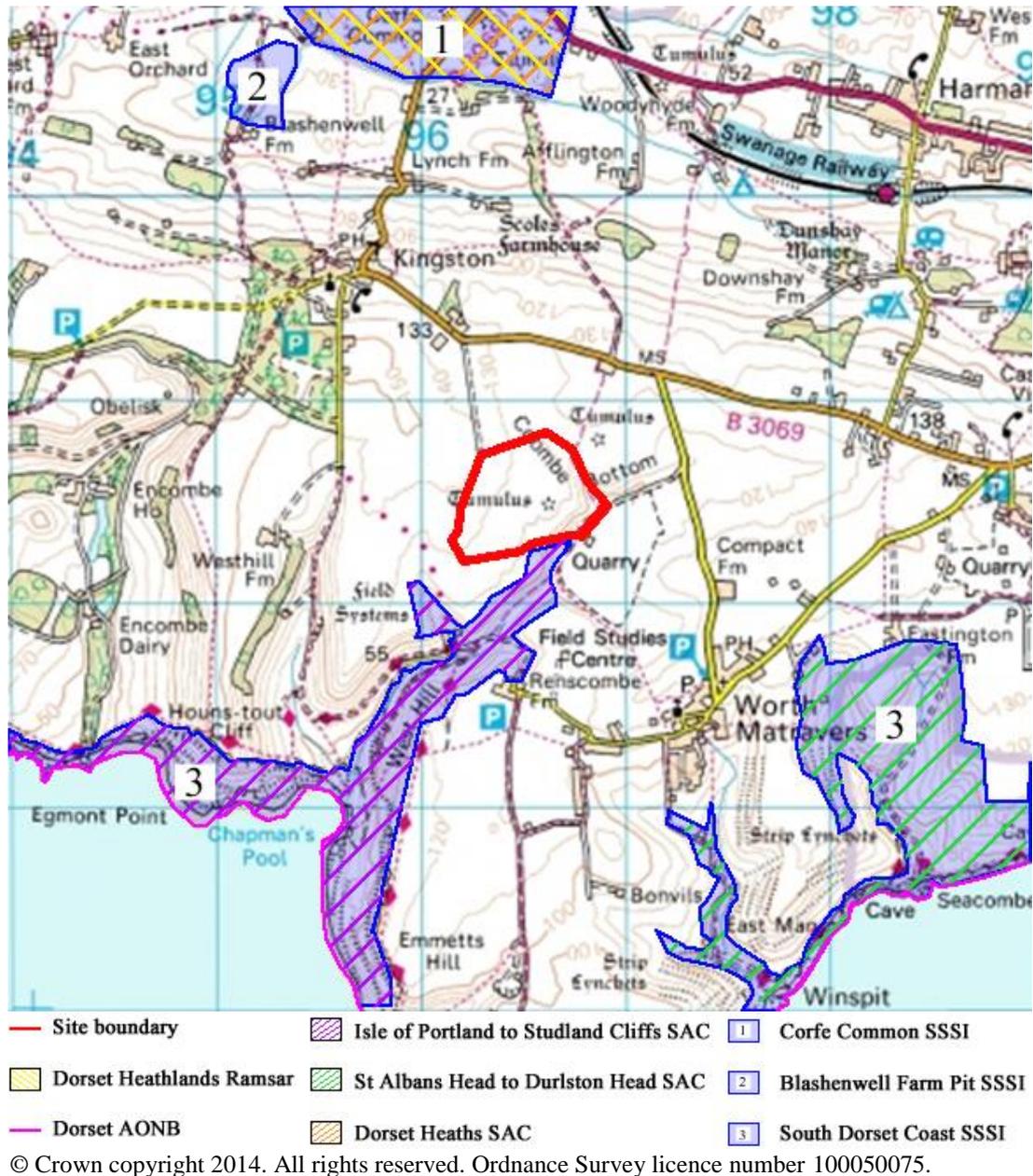
- Hen harrier *Circus cyaneus*;
- Merlin *Falco columbarius*; and
- Dartford warbler *Sylvia undata*.

#### Sites of Special Scientific Interest (SSSI)

- 5.2.8 SSSIs are legally protected under Section 28 of the *Wildlife & Countryside Act 1981 (& as amended)* and may be cited for the uncommon habitats and/or assemblage of rare species they hold.
- 5.2.9 Corfe Common SSSI is located approximately 1.62 km to the north of the Phase 1 survey site and is c. 88.6 ha in surface area. The SSSI is cited for its dry and wet heaths, valley mire and fen, botanically rich flushes and an assemblage of local and rare invertebrate species.
- 5.2.10 Blashenwell Farm Pit SSSI is located approximately 1.85 km to the north-west of the Phase 1 survey site and is c. 11.4 ha in surface area. The SSSI is cited for its tufa deposit of Quaternary importance.
- 5.2.11 South Dorset Coast SSSI is located directly adjacent to the south-east boundary of the Phase 1 survey site and is c. 1760.9 ha in surface area. The SSSI is cited for its unimproved limestone grassland and chalk heath which support rare plant species including carrot broomrape *Orobanche maritima* and wild cabbage *Brassica oleracea*, as well as the largest national population of early spider orchid *Ophrys sphegodes*; a species legally protected under the *Wildlife and Countryside Act 1981 (as amended)*. The SSSI also supports the largest national population of Lulworth skipper *Thymelicus action*; a UK BAP Priority Species of butterfly.

#### Areas of Outstanding Natural Beauty (AONB)

- 5.2.12 AONBs are formally designated by Natural England (NE) and the Countryside Council for Wales (CCW), who are also responsible for advising on relevant policies; responsibility of care lies with the local authorities. AONBs are cited for their significant landscape value under the *National Parks and Access to the Countryside Act 1949*, in order to conserve their natural beauty. The *Countryside and Rights of Way Act 2000* brought in advisory committees, Statements of Intent and Management Plans and appointed AONB officers to further protect AONBs.
- 5.2.13 Dorset AONB is located approximately 1.22 km to the south of the Phase 1 survey site and covers c. 44% of Dorset. The AONB is cited for its complex chalk, limestone and sandstone geology and its downland and heathland with a wide range of flora and fauna.
- 5.2.14 The location and extent of the Isle of Portland to Studland Cliffs SAC, St Albans Head to Durlston Head SAC, Dorset Heathlands SAC, Dorset Heathlands Ramsar, Corfe Common SSSI, South Dorset Coast SSSI, Blashenwell Farm Pit SSSI and Dorset AONB in relation to the Swanworth Quarry Extension Phase 1 survey site are shown at Figure 2.



**Figure 2. The location and extent of the Isle of Portland to Studland Cliffs SAC, St Albans Head to Durlston Head SAC, Dorset Heaths SAC, Dorset Heathlands Ramsar, Corfe Common SSSI, South Dorset Coast SSSI, Blashenwell Farm Pit SSSI and Dorset AONB in relation to the Swanworth Quarry Extension Phase 1 survey site.**

### 5.3 Non-Statutory Wildlife Sites

5.3.1 Non-Statutory Wildlife Sites are usually identified by the relevant county Wildlife Trust having been selected through the application of criteria developed by that Trust for assessment of biodiversity value in the county context. They have no statutory protection but local authorities may adopt policies to ensure that their value

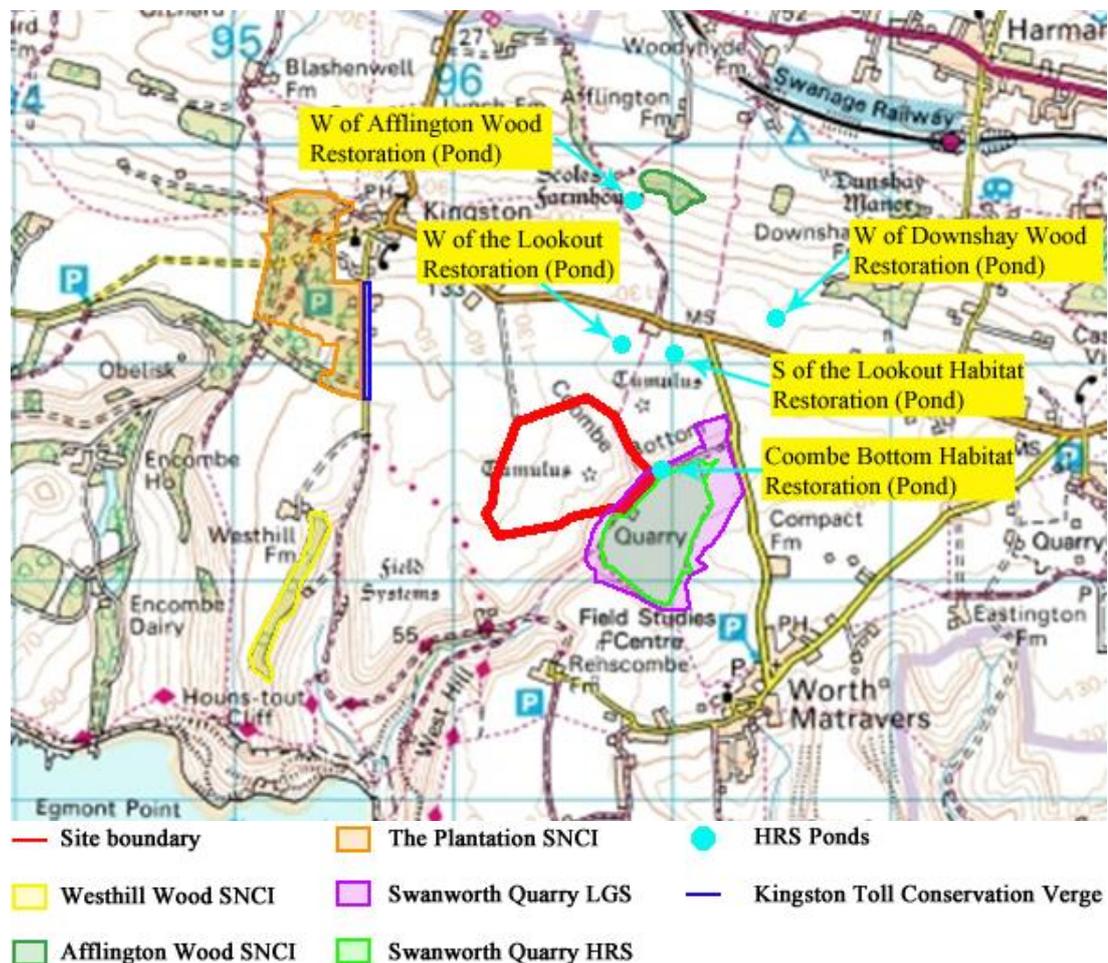
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is taken into consideration in the determination of planning applications that could affect them.

- 5.3.2 The DERC data-search returned details of 11 non-Statutory Wildlife Site designations within a 1 km radius of the site centroid comprising:-
- Westhill Wood Site of Nature Conservation Interest (SNCI);
  - Afflington Wood SNCI;
  - The Plantation SNCI;
  - Swanworth Quarry Local Geological Site (LGS);
  - Swanworth Quarry Habitat Restoration Site (HRS);
  - Coombe Bottom HRS;
  - West of the Lookout HRS;
  - West of Downshay Wood HRS;
  - South of the Lookout HRS;
  - West of Afflington Wood HRS; and
  - Kingston Toll Conservation Verge.
- 5.3.3 Westhill Wood SNCI is located approximately 745 m to the west of the Phase 1 survey site and comprises c. 5.41 ha of semi-natural deciduous woodland.
- 5.3.4 Afflington Wood SNCI is located approximately 938 m to the north-east of the Phase 1 survey site and comprises c. 3.18 ha of semi-natural deciduous woodland.
- 5.3.5 The Plantation SNCI is located approximately 712 m to the north-west of the Phase 1 survey site and comprises c. 25.23 ha of semi-natural deciduous woodland.
- 5.3.6 Swanworth Quarry LGS is located directly adjacent to the south-eastern boundary of the Phase 1 survey site, and a small portion lies just within the site itself. The Swanworth Quarry LGS comprises c. 36.06 ha of calcareous grassland.
- 5.3.7 Swanworth Quarry HRS is located approximately 30 m to the south of the Phase 1 survey site and comprises c. 21.88 ha of semi-natural deciduous woodland.
- 5.3.8 Coombe Bottom HRS is located approximately 10 m to the east of the Phase 1 survey site and comprises a pond.
- 5.3.9 West of the Lookout HRS is located approximately 330 m to the north-east of the Phase 1 survey site and comprises a pond.
- 5.3.10 West of Downshay Wood HRS is located approximately 931 m to the north-east of the Phase 1 survey site and comprises a pond.
- 5.3.11 South of the Lookout HRS is located approximately 931 m to the north-east of the Phase 1 survey site and comprises a pond.
- 5.3.12 West of Afflington Wood HRS is located approximately 958 m to the north-east of the Phase 1 survey site and comprises a pond.

5.3.13 Kingston Toll Conservation Verge is located approximately 682 m to the west of the Phase 1 survey site and comprises c. 0.2 ha of calcareous grassland on a roadside verge, cited for butterfly orchid *Platanthera* sp., common spotted orchid *Dactylorhiza fuchsii*, common twayblade *Neottia ovata* and white helleborine *Cephalanthera damasonium*.

5.3.14 The location and extent of the Westhill Wood SNCI, Afflington Wood SNCI, The Plantation SNCI, Swanworth Quarry LGS, Swanworth Quarry HRS, Coombe Bottom HRS, West of the Lookout HRS, West of Downshay Wood HRS, South of the Lookout HRS, West of Afflington Wood HRS and Kingston Toll Conservation Verge in relation to the Swanworth Quarry Extension Phase 1 survey site are shown at Figure 3.



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**Figure 3. The location of the Westhill Wood SNCI, Afflington Wood SNCI, The Plantation SNCI, Swanworth Quarry LGS, Swanworth Quarry HRS, Coombe Bottom HRS, West of the Lookout HRS, West of Downshay Wood HRS, South of the Lookout HRS, West of Afflington Wood HRS and Kingston Toll Conservation Verge in relation to the Swanworth Quarry Extension Phase 1 survey site.**

## 6. PHASE 1 SURVEY

### 6.1 Desk-study

6.1.1 The data-search performed by DERC returned one record of a UK BAP Priority Species of plant; greater butterfly orchid *Platanthera chlorantha*, within the 500 m search radius. Table 2 summarises the record of the species with its location, date, conservation status and a summary of its habitat requirements as set out by Stace (1991) and Garrard & Streeter (1998).

**Table 2. Record of one UK BAP Priority Species of plant occurring within a 500 m radius of the Swanworth Quarry Extension Phase 1 survey site with a summary of its habitat requirements as set out by Stace (1991) and Garrard & Streeter (1998).**

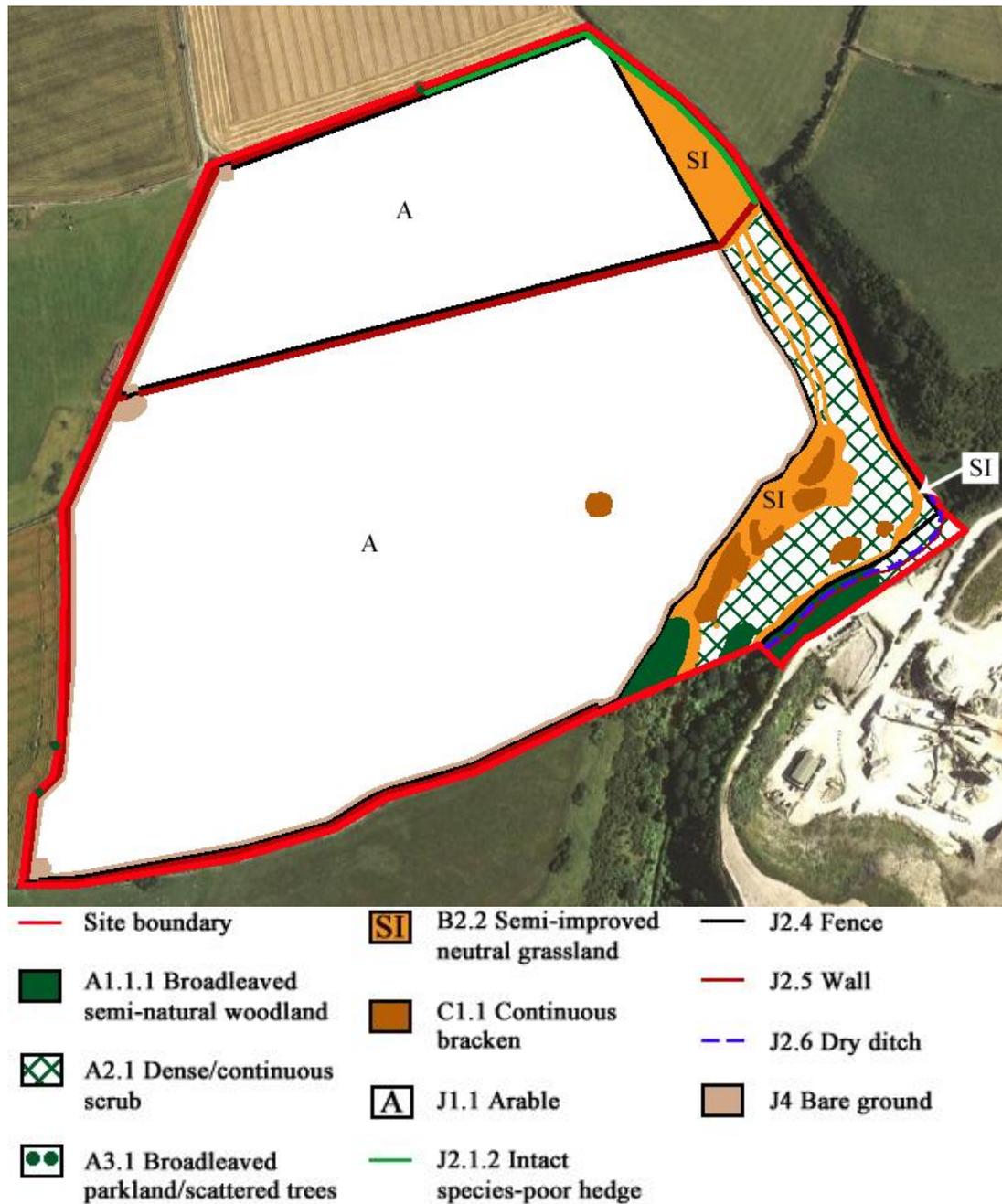
| SPECIES                                                   | LOCATION   | DATE | CONSERVATION STATUS | HABITAT REQUIREMENTS                                                               |
|-----------------------------------------------------------|------------|------|---------------------|------------------------------------------------------------------------------------|
| Greater butterfly-orchid<br><i>Platanthera chlorantha</i> | SY95407915 | 2011 | UK BAP<br>Red List  | Calcareous soil in woods and open grassland (Stace 1991, Garrard & Streeter 1998). |

### 6.2 Phase 1 habitats

6.2.1 Habitats within the 2014 Swanworth Quarry Extension Phase 1 survey site can be broadly divided into 11 Phase 1 (JNCC 2003) habitat types comprising:-

- A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural (c. 0.43 ha);
- A2.1 – Woodland and scrub / Scrub / Dense/continuous (c. 1.97 ha);
- A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved (c. 0.01 ha);
- B2.2 – Grassland and marsh / Neutral grassland / Semi-improved (c. 1.27 ha);
- C1.1 – Tall herb and fern / Bracken / Continuous (c. 0.25 ha);
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable (c. 26.23 ha);
- J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor (c. 0.08 ha);
- J2.4 – Miscellaneous / Boundaries / Fence (c. 2.46 km);
- J2.5 – Miscellaneous / Boundaries / Wall (c. 2.15 km);
- J2.6 – Miscellaneous / Boundaries / Dry Ditch (c. 0.24 km); and
- J4 – Miscellaneous / Bare ground (c. 0.46 ha).

6.2.2 Figure 4 on the following page shows the location and extent of Phase 1 habitats within the Swanworth Quarry Extension Phase 1 survey site. Table 3 provides a summary description of the Target Note interest and Figure 5 shows the location of Target Notes within the Swanworth Quarry Extension Phase 1 survey site.



**Figure 4. The location and extent of Phase 1 habitats within the Swanworth Quarry Extension Phase 1 survey site.**

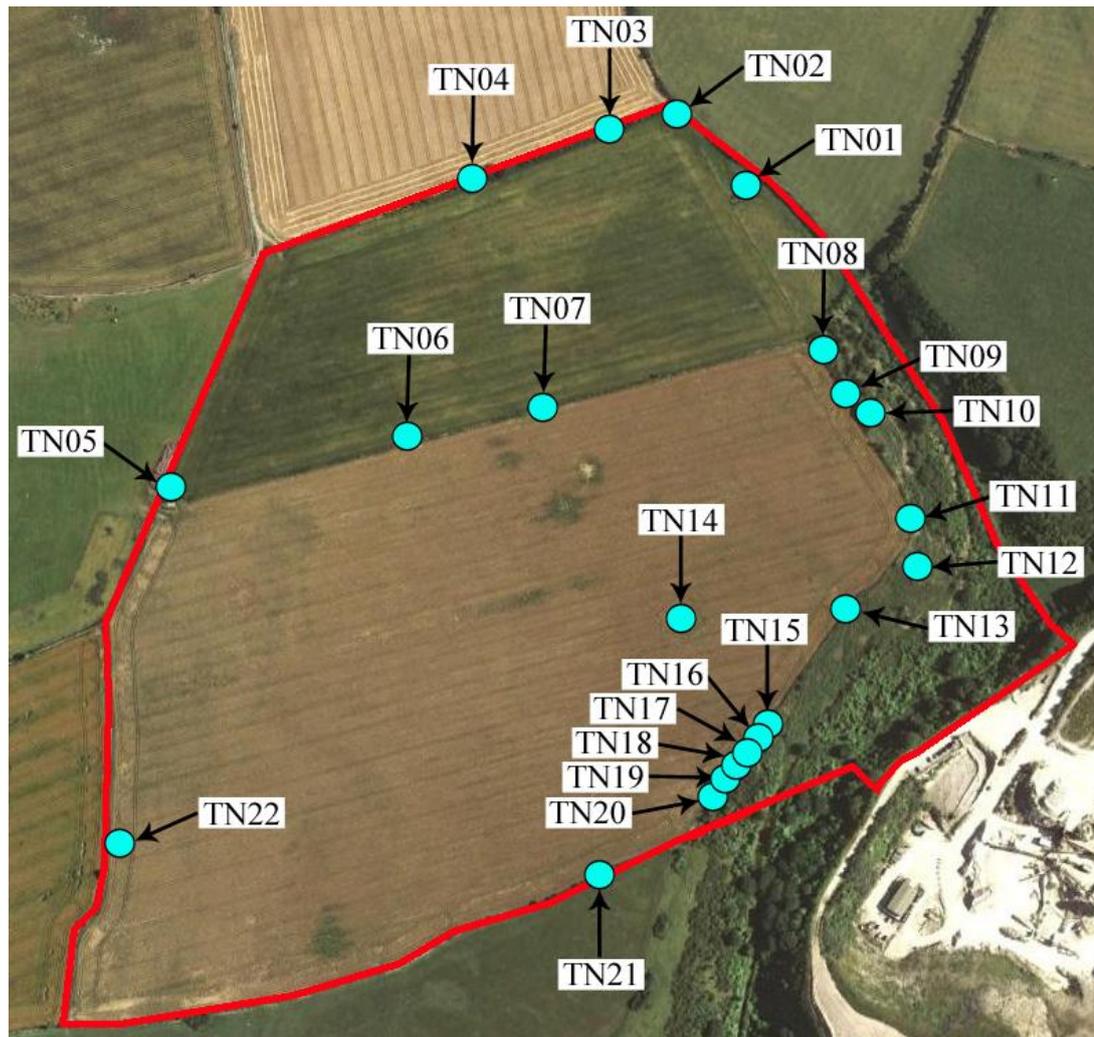
### 6.3 Access

6.3.1 The Swanworth Quarry Extension is accessed from the north either on foot via the Purbeck Way public bridleway or by vehicle via a private, unmetalled farm track leading south from Kingston Barn Farm. Both routes are accessed from the public B3069 road in the north.

**Table 3. Swanworth Quarry Extension Phase 1 Target Notes.**

| TARGET NO. | LOCATION      | DESCRIPTION                                                                                     | SIGNIFICANCE                                                                                                                                                                                                                                                                                                                 |
|------------|---------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TN01       | SY96642-78795 | Pile of loose stone potentially suitable as refuge for amphibians and reptiles.                 | Great crested newts <i>Triturus cristatus</i> and their habitat are legally protected under <i>The Conservation of Species and Habitats Regulations 2010</i> and the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> . Both great crested newts and common toads <i>Bufo bufo</i> are UK BAP Priority Species. |
|            |               |                                                                                                 | All common reptiles are legally protected against intentional killing under the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> and are UK BAP Priority Species.                                                                                                                                               |
| TN02       | SY96591-78857 | Probable badger <i>Meles meles</i> track.                                                       | Badger activity within the site. Badgers and their occupied setts are legally protected under the <i>Protection of Badgers Act 1992</i> .                                                                                                                                                                                    |
| TN03       | SY96543-78841 | Probable badger crossing point.                                                                 |                                                                                                                                                                                                                                                                                                                              |
| TN04       | SY96439-78798 | Pile of loose stone potentially suitable as refuge for amphibians and reptiles.                 | Great crested newts and their habitat are legally protected under <i>The Conservation of Species and Habitats Regulations 2010</i> and the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> . Both great crested newts and common toads are UK BAP Priority Species.                                            |
|            |               |                                                                                                 | All common reptiles are legally protected against intentional killing under the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> and are UK BAP Priority Species.                                                                                                                                               |
| TN05       | SY96217-78568 | Probable badger crossing point.                                                                 | Occupied badger sett and badger activity within the site. Badgers and their occupied setts are legally protected under the <i>Protection of Badgers Act 1992</i> .                                                                                                                                                           |
| TN06       | SY96387-78606 | Single-hole badger sett with bedding and scratch marks and showing signs of current occupation. |                                                                                                                                                                                                                                                                                                                              |
| TN07       | SY96480-78633 | Fresh badger latrine.                                                                           |                                                                                                                                                                                                                                                                                                                              |
| TN08       | SY96694-78669 | Probable badger pathway.                                                                        |                                                                                                                                                                                                                                                                                                                              |
| TN09       | SY96719-78648 | Pile of loose stone potentially suitable as refuge for amphibians and reptiles.                 | Great crested newts and their habitat are legally protected under <i>The Conservation of Species and Habitats Regulations 2010</i> and the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> . Both great crested newts and common toads are UK BAP Priority Species.                                            |
| TN10       | SY96730-78629 |                                                                                                 | All common reptiles are legally protected against intentional killing under the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> and are UK BAP Priority Species.                                                                                                                                               |

| TARGET NO. | LOCATION      | DESCRIPTION                                                                                                                | SIGNIFICANCE                                                                                                                                                                                                                                                                      |
|------------|---------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TN11       | SY96765-78544 | Probable badger pathway.                                                                                                   | Badger activity within the site. Badgers and their occupied setts are legally protected under the <i>Protection of Badgers Act 1992</i> .                                                                                                                                         |
| TN12       | SY96762-78506 | Pile of brash potentially suitable as refuge for amphibians and reptiles.                                                  | Great crested newts and their habitat are legally protected under <i>The Conservation of Species and Habitats Regulations 2010</i> and the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> . Both great crested newts and common toads are UK BAP Priority Species. |
|            |               |                                                                                                                            | All common reptiles are legally protected against intentional killing under the <i>Wildlife &amp; Countryside Act 1981 (&amp; as amended)</i> and are UK BAP Priority Species.                                                                                                    |
| TN13       | SY96719-78487 | Probable badger pathway.                                                                                                   | Badger activity within the site. Badgers and their occupied setts are legally protected under the <i>Protection of Badgers Act 1992</i> .                                                                                                                                         |
| TN14       | SY96591-78468 | Tumulus (archaeologically significant burial mound) holding a single-hole badger sett showing signs of current occupation. | Occupied badger sett within the site. Badgers and their occupied setts are legally protected under the <i>Protection of Badgers Act 1992</i> .                                                                                                                                    |
|            |               |                                                                                                                            | The tumulus is legally protected as a Scheduled Monument under the <i>Ancient Monuments and Archaeological Areas Act 1979</i> (Dorset County Council 2013).                                                                                                                       |
| TN15       | SY96633-78356 | Badger latrine.                                                                                                            | Occupied badger setts and badger activity within the site. Badgers and their occupied setts are legally protected under the <i>Protection of Badgers Act 1992</i> .                                                                                                               |
| TN16       | SY96649-78393 | Probable badger pathway.                                                                                                   |                                                                                                                                                                                                                                                                                   |
| TN17       | SY96641-78364 | Eight-hole badger sett with 'play area' and scratching post. Four holes showing signs of current occupation.               |                                                                                                                                                                                                                                                                                   |
| TN18       | SY96633-78365 | Single-hole badger sett with fresh spoil indicating current occupation.                                                    |                                                                                                                                                                                                                                                                                   |
| TN19       | SY96619-78347 | Single-hole badger sett with bedding outside indicating current occupation.                                                |                                                                                                                                                                                                                                                                                   |
| TN20       | SY96615-78343 | Single-hole badger sett.                                                                                                   |                                                                                                                                                                                                                                                                                   |
| TN21       | SY96484-78264 | Fresh-badger latrine.                                                                                                      |                                                                                                                                                                                                                                                                                   |
| TN22       | SY96178-78304 | Probable badger track.                                                                                                     |                                                                                                                                                                                                                                                                                   |



**Figure 5. The location and extent of Target Notes within the Swanworth Quarry Extension Phase 1 survey site.**

#### **6.4 A1.1.1 – Broadleaved semi-natural woodland**

- 6.4.1 The woodland occupies the slopes of a shallow valley in the far south of the site and holds a canopy which is open in part comprising sycamore *Acer pseudoplatnus* with field maple and occasional ash ranging in height from c. 12 to 14 m. Individual trees have a diameter at breast height (dbh) range of 60-80 cm. The woodland holds a scattered shrub layer which is dense in parts comprising elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*, with an individual goat willow *Salix caprea* and an individual whitebeam *Sorbus aria* noted. Dense traveller's joy *Clematis vitalba* covers much of the shrub layer and on occasion penetrates into the canopy with honeysuckle *Lonicera periclymenum*, bittersweet *Solanum dulcamara* and hedge bindweed *Calystegia sepium* also present.
- 6.4.2 Where the canopy is closed, dog's mercury *Mercurialis perennis*, hart's-tongue *Asplenium scolopendrium* and lords-and-ladies *Arum maculatum* dominate the herb

layer, but in areas where the canopy is more open, the herb layer holds dense stands of bracken *Pteridium aquilinum*, dwarf elder *Sambucus ebulus*, bramble *Rubus fruticosus* agg., stinging nettle *Urtica dioica*, hogweed *Heracleum sphondylium* and hedge woundwort *Stachys sylvatica*. Additional species comprise teasel *Dipsacus fullonum*, spear thistle *Cirsium vulgare*, creeping thistle *Cirsium arvense*, broadleaved dock *Rumex obtusifolius*, curled dock *Rumex crispus*, red campion *Silene dioica*, stinking iris *Iris foetidissima*, ground-ivy *Glechoma hederacea*, herb-Robert *Geranium robertianum*, creeping buttercup *Ranunculus repens*, field bindweed *Convolvulus arvensis*, field forget-me-not *Myosotis arvensis*, wood false brome *Brachypodium sylvaticum* and perennial rye-grass *Lolium perenne*. An eight-hole badger *Meles meles* sett was noted in the woodland on the southern boundary (see Target Note: TN18) and although only four holes showed signs of current occupation, the setts are surrounded by large 'play areas' with scratching posts, latrines (see Target Note: TN15) and several well-worn tracks, indicating this is a 'main sett' (based on badger sett classification criteria set out by Kruuk (1978), Thornton (1988) and Cresswell *et al.* (1990)).



**Photo 1. Broadleaved semi-natural woodland in the south of the site.**

## **6.5 A2.1 – Dense/continuous scrub**

6.5.1 Dense scrub within the site comprises blackthorn, hawthorn, elder, bramble, common gorse *Ulex europaeus* and butterfly bush *Buddleja davidii* with occasional scattered ash *Fraxinus excelsior* and field maple *Acer campestre* trees to c. 12 m high with a dbh of c. 60 cm. The majority of the scrub is smothered by a blanket of

dense traveller's joy with abundant bittersweet and some honeysuckle. The ground flora holds bramble, stinging nettle, bracken, hogweed, spear thistle, creeping thistle, broadleaved dock, curled dock, rosebay *Chamerion angustifolium*, great willowherb *Epilobium hirsutum*, red campion, dwarf elder, hedge woundwort, common ragwort *Senecio jacobaea*, common knapweed *Centaurea nigra*, ash seedlings, wood avens *Geum urbanum*, herb-Robert, germander speedwell *Veronica chamaedrys*, ground-ivy, hart's-tongue, lords-and-ladies and hedge mustard *Sisymbrium officinale*. Both the woodland and scrub appears superficially suitable habitat for common dormice and although no Potential bat-Roost Features (PRF) were recorded within the woodland, the topography of the wooded valley are considered to be superficially suitable as both commuting and foraging habitat for bats.



**Photo 2.** Dense scrub in the south of the site, covered in traveller's joy *Clematis vitalba*.

## **6.6 A3.1 – Broadleaved scattered trees**

- 6.6.1 The northern and western boundaries of the site held scattered individual elder trees ranging in height from 4 to 6 m with 30 cm dbh.

## **6.7 B2.2 – Semi-improved neutral grassland**

- 6.7.1 The majority of semi-improved neutral grassland lies in a plateau above the western slope of the valley and holds cock's-foot *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius*, wood false brome, crested dog's-tail *Cynosurus cristatus*, timothy *Phleum pratense*, creeping bent *Agrostis stolonifera* and annual meadowgrass *Poa annua*. Scattered patches of bramble and low blackthorn, hawthorn, elder and common gorse are also present with additional stinging nettle,

woolly thistle *Cirsium eriophorum*, creeping thistle, broadleaved dock, curled dock, dwarf elder, red campion, common knapweed, stinking iris, ground-ivy, creeping cinquefoil *Potentilla reptans*, cut-leaved cranesbill *Geranium dissectum*, herb-Robert, slender speedwell *Veronica filliformis*, greater plantain *Plantago major*, red bartsia *Odontites vernus*, knotgrass *Polygonum aviculare*, black medick *Medicago lupulina*, bird's-foot trefoil *Lotus corniculatus* and field forget-me-not. The rough grassland appears to be superficially suitable reptile habitat, with piles of loose stones and a pile of brash recorded as potentially suitable refuges (see Target Notes: TN09, TN10 and TN12).

- 6.7.2 A public bridleway runs through the bottom of the valley with two additional informal paths running parallel to the bridleway holding a similar sward to the grassland on the plateau.
- 6.7.3 To the north of the valley lies a field of rough grassland which slopes gently to the east and comprises a rough sward of cock's-foot, rough meadowgrass *Poa trivialis*, crested dog's-tail, creeping bent, Yorkshire-fog *Holcus lanatus* and common couch *Elytrigia repens*. Additional species comprise stinging nettle, hedge woundwort, spear thistle, creeping thistle, broadleaved dock, bristly ox-tongue *Picris echioides*, common cat's-ear *Hypochaeris radicata*, common fleabane *Pulicaria dysenterica*, field bindweed, red bartsia, greater plantain and self-seeded blackthorn from the hedge in the east. A pile of loose stone in the north of the field was recorded under an individual elder amongst scattered bracken which is superficially suitable as a refuge for reptiles (see Target Note: TN01).



**Photo 3. Semi-improved neutral grassland in the eastern field.**

- 6.7.4 To the south of the ditch (described in paragraph 6.13.1), the valley side rises steeply at a c. 75 degrees angle to meet the existing quarry workings, vegetated with similar species to that already described.

## 6.8 C1.1 – Continuous bracken

- 6.8.1 The bracken lies in dense stretches interspersed within the semi-improved neutral grassland on the plateau above the western slope of the valley.



**Photo 4. Continuous bracken on the plateau.**

- 6.8.2 A tumulus (burial mound) was recorded within the centre of the field (see Target Note: TN14) which is c. 2 m high and vegetated with dense bracken, stinging nettle, hogweed, greater burdock, groundsel, field speedwell, ribwort plantain *Plantago lanceolata*, cock's-foot, perennial rye-grass, Yorkshire-fog and meadow fescue. A single-hole badger sett was also recorded within the tumulus (see Target Note: TN14).

## 6.9 J1.1 – Arable

- 6.9.1 The remainder of the site is occupied by two large arable fields. On the day of survey the northern field was planted to broad bean *Vicia faba* which had been left to rot presumably as a cover crop. The field also held a number of typical 'weed' species including barren brome *Bromus sterilis*, soft brome *Bromus hordeaceus*, barley *Hordeum* sp., sheep's fescue *Festuca ovina*, spear thistle, prickly sow-thistle *Sonchus asper*, greater burdock *Arctium lappa*, hogweed, rough chervil *Chaerophyllum temulentum*, oilseed rape *Brassica napus*, sun spurge *Euphorbia helioscopia*, scentless mayweed *Tripleurospermum inodorum*, pineapple weed *Matricaria discoidea*, common orache *Atriplex patula*, fat hen *Chenopodium album*,

redshank *Persicaria maculosa*, scarlet pimpernel *Anagallis arvensis*, greater plantain, field speedwell *Veronica persica*, black nightshade *Solanum nigrum*, field madder *Sherardia arvensis*, field bindweed and field horsetail *Equisetum arvense*. Two well-worn mammal tracks were recorded crossing the boundaries of this field (see Target Notes: TN02 and TN03). A single-hole badger sett showing signs of current occupation (see Target Note: TN06) and a fresh badger latrine (see Target Note: TN07) were recorded along the boundary between the two arable fields.

- 6.9.2 On the day of survey the southern field held bread wheat *Triticum aestivum* with comparably few ‘weed’ species comprising barren brome, meadow fescue *Festuca pratensis*, greater burdock, creeping thistle, cleavers *Galium aparine* and black nightshade. Areas of bare ground on the margins holds stinging nettle, broadleaved dock, oilseed rape, shepherd’s-purse *Capsella bursa-pastoris*, groundsel *Senecio vulgaris*, bristly ox-tongue, ground-ivy, scentless mayweed and swine-cress *Lepidium coronopus*. Wall butterfly *Lasiommata megera* and several linnets *Cannabina carduelis* were also recorded within the arable fields, both of which are UK BAP Priority Species.



**Photo 5. The tumulus (burial mound) vegetated with dense bracken in the southern field.**

## 6.10 Species-poor intact hedgerow

- 6.10.1 A continuous hedgerow c. 3 m high by 4 m wide is present along the entire eastern boundary of the two arable fields and comprises dense blackthorn with occasional elder over bramble, ivy, bracken, hogweed, creeping thistle, broadleaved dock, hedge woundwort, hart’s-tongue and field bindweed.
- 6.10.2 Midway along the northern boundary, a c. 3 m high by 2 m wide continuous hedge begins and continues eastwards to the edge of the northern field. The hedge comprises hawthorn, blackthorn and elder with a single split-stemmed field maple c. 5 m high with a dbh of c. 50 cm.



**Photo 6. The northern (left) and southern (right) arable fields.**



**Photo 7. Intact hedgerow along the eastern boundary of the site.**

## **6.11 Fence**

6.11.1 Post and wire fencing is present on all but the western field boundaries, well as along the public bridleway at the base of the valley and along the eastern boundary until the semi-improved neutral grassland field in the north-east.

## **6.12 Wall**

6.12.1 The two arable fields are separated by and bounded to the north, south and west by dry stone walls to a maximum height of c. 1 m. The walls are derelict in sections and

variously vegetated with individual hawthorn, blackthorn and elder shrubs to c. 3 m high, as well as bramble, ivy *Hedera helix*, stinging nettle, hogweed, greater burdock, spear thistle, creeping thistle, prickly sow-thistle, smooth sow-thistle *Sonchus oleraceus*, broadleaved dock, upright hedge parsley *Torilis japonica*, hedge mustard, nipplewort *Lapsana communis*, hedge woundwort, field bindweed, cleavers, cut-leaved cranesbill, dove's-foot cranesbill *Geranium molle*, herb-Robert, wood avens, lords-and-ladies, barren brome, common couch, cock's-foot and Yorkshire-fog with some bracken in the south. The stone walls are considered superficially suitable as a refuge for reptiles and a pile of loose stone was recorded (see Target Note: TN04).

- 6.12.2 A derelict dry stone wall bounds the site to the north-east and holds the species-poor intact hedgerow as described in paragraph 6.10.2. A small dry stone wall is present as part of a dry ditch in the south of the site (see paragraph 6.13.1).



**Photo 8. Dry stone wall characteristic of those along the site boundaries.**

### **6.13 Dry ditch**

- 6.13.1 A dry ditch c. 1 m deep by 2 m wide runs west to east along the valley bottom of the south-eastern boundary of the site. The ditch is heavily vegetated with dense scrub similar to that described in paragraph 6.5.1 and appears to be very old; the banks of the ditch are constructed of dry stone-work with a small dry stone wall on the southern bank, although this is almost entirely obscured by vegetation and earth accumulated over many years.



**Photo 9. Dry ditch on the south-eastern boundary with an associated dry stone wall.**

#### **6.14 Bare ground**

6.14.1 A thin section of bare ground c. 50 cm wide is present along the eastern boundary fence, as well as along the southern and western boundaries of the southern arable field. Several badger setts and crossing points were noted along the strips of bare ground in the southern field (see Target Notes: TN5, TN8, TN11, TN13, TN16, TN17 and TN19 - TN22).

#### **6.15 UK Biodiversity Action Plan Priority Habitats**

6.15.1 Two of the Phase 1 habitat types present within the Swanworth Quarry Extension site qualify as Priority Habitats within the UK Biodiversity Action Plan, these comprise:-

- A1.1.1 – Woodland / Broadleaved / Semi-natural, which qualifies as ‘Lowland Mixed Deciduous Woodland’ within the UK BAP criteria; and
- J2.1.2 – Miscellaneous / Boundaries / Intact Hedge / Species-poor, which qualifies as ‘Hedgerows’ within the UK BAP criteria.

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## 7. FAUNA

### 7.1 Invertebrates

#### Desk-study: Invertebrates

7.1.1 There are currently 413 species of terrestrial invertebrates listed as Priority Species within the UK Biodiversity Action Plan comprising:-

- 2 species of Cnidaria (anemones and hydroids);
- 1 species of Nemertea (ribbon worm);
- 2 species of Bryozoa (sea-mat and moss-animal);
- 19 species of Mollusca (snails);
- 1 species of Annelida (worms);
- 31 species of Arachnidae (spiders);
- 4 species of Crustacea (crayfish and shrimps);
- 1 species of Chilopoda (centipedes);
- 3 species of Diplopoda (millipedes);
- 2 species of Ephemeroptera (mayflies);
- 2 species of Odonata (dragonflies and damselflies);
- 4 species of Orthoptera (grasshoppers and crickets);
- 2 species of Plecoptera (stoneflies);
- 10 species of Hemiptera (true bugs);
- 78 species of Coleoptera (beetles);
- 1 species of Neuroptera (lacewings);
- 35 species of Hymenoptera (ants, bees and wasps);
- 4 species of Trichoptera (caddisflies);
- 176 species of Lepidoptera (butterflies and moths); and
- 35 species of Diptera (true flies).

7.1.2 Of these overall 413 UK BAP Priority Species of invertebrates, 32 are also legally protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*; one of which, comprising large blue butterfly *Maculinea arion* is also listed on Schedule 2 of *The Conservation of Habitats and Species Regulations 2010*. The UK BAP Priority Species little whirlpool ram's-horn snail *Anisus vorticulus* is legally protected under Schedule 2 of *The Conservation of Habitats and Species Regulations 2010*. In addition, although they are not UK BAP Priority Species, a further 11 invertebrate species are legally protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*; one of which, comprising Fisher's estuarine moth *Gortyna borelii* is also listed on Schedule 2 of *The Conservation of Habitats and Species Regulations 2010*.

7.1.3 The data-search performed by DERC returned three records of three UK BAP Priority Species of butterfly occurring within the 500 m search radius. Table 4 on the following page summarises the records of the three butterfly species cited, their location, date and the distance between their recorded location and the Swanworth Quarry Extension Phase 1 survey site. Repeat records from the same location are only displayed with the most recent dates.

**Table 4. Records of UK Biodiversity Action Plan Priority Species of butterfly occurring within 500 m of the Swanworth Quarry Extension Phase 1 survey site, their location, date and the distance between their recorded location and the Swanworth Quarry Extension Phase 1 survey site.**

| SPECIES                                             | LOCATION | DATE | DISTANCE FROM PHASE 1 SURVEY SITE                  |
|-----------------------------------------------------|----------|------|----------------------------------------------------|
| <b>Lulworth skipper</b><br><i>Thymelicus acteon</i> | SY9678   | 2007 | Immediately adjacent to site on southern boundary. |
| <b>Small blue</b><br><i>Cupido minimus</i>          | SY9678   | 2009 | Immediately adjacent to site on southern boundary. |
| <b>Wall</b><br><i>Lasiommata megera</i>             | SY9678   | 2009 | Immediately adjacent to site on southern boundary. |

7.1.4 In addition to the data-search, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of legally protected and/or UK Biodiversity Action Plan Priority Species of invertebrates was also performed and is provided at Appendix C. The results of the DERC data-search and the distribution and habitat requirements review, provides the evidence-base upon which further predictive assessment is performed.

Swanworth Quarry Extension predictive assessment: Invertebrates

7.1.5 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local distribution, habitat requirements and ecology of each species, the potential likelihood of legally protected and/or UK Biodiversity Action Plan Priority Species of invertebrate to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. A summary of the results of this assessment is provided at Table 5; no habitat exists within the site for legally protected invertebrate species, only UK Biodiversity Action Plan Priority Species.

**Table 5. A summary of the potential likelihood for UK Biodiversity Action Plan Priority Species of invertebrate to be present within the Swanworth Quarry Extension Phase 1 survey site, based on their accepted national distribution, known local distribution, habitat requirements and ecology.**

| SPECIES                                                                    | HABITAT PRESENT IN PHASE 1 SITE                                     | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|----------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------|------------------------|
| <b>Lichen running spider</b><br><i>Philodromus margaritatus</i>            | A1 – Woodland and scrub / Woodland (all types) <b>with</b> lichens. | No                | Potential              |
| <b>Serrated tongue-spider</b><br><i>Centromerus serratus</i>               | A1 – Woodland and scrub / Woodland (all types).                     | No                | Potential              |
| <b>Thin weblet</b><br><i>Meioneta mollis</i> (spider)                      | A1.1 – Woodland and scrub / Woodland / Broadleaved.                 | No                | Potential              |
| <b>Small-horned walckenaer</b><br><i>Walckenaeria corniculans</i> (spider) | A1 – Woodland and scrub / Woodland.                                 | No                | Potential              |

| SPECIES                                                              | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                         | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Necklace ground beetle</b><br><i>Carabus monilis</i>              | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated and disturbed land / Arable.                                                                                   | No                | Potential              |
| <b>Violet oil-beetle</b><br><i>Meloe violaceus</i>                   | A1.1 – Woodland and scrub / Woodland / Broadleaved.                                                                                                                                                                                                     | No                | Potential              |
| <b>Brown-banded carder-<br/>bee</b><br><i>Bombus humilis</i>         | B2 – Grassland and marsh / Neutral grassland;<br><b>with Asteraceae, Fabaceae, Lamiaceae &amp; Scrophulariaceae.</b>                                                                                                                                    | No                | Potential              |
| <b>Tormentil mining bee</b><br><i>Andrena tarsata</i>                | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br><b>in association with</b><br>J4 – Bare ground (S-facing slopes);<br><b>with Rubus fruticosus, Achillea millefolium &amp; Potentilla.</b> | No                | Potential              |
| <b>Red-shanked carder-<br/>bee</b><br><i>Bombus ruderarius</i>       | A2 – Woodland and scrub / Scrub;<br>B2 – Grassland and marsh / Neutral grassland;<br><b>with Fabaceae, Lamiaceae &amp; Scrophulariaceae.</b>                                                                                                            | No                | Potential              |
| <b>Black-headed mason<br/>wasp</b><br><i>Odynerus melanocephalus</i> | B – Grassland and marsh <b>with Trifolium &amp; Veronica sp.</b>                                                                                                                                                                                        | No                | Potential              |
| <b>Black-backed meadow<br/>ant</b><br><i>Formica pratensis</i>       | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J2 – Miscellaneous / Boundaries / Hedgerows.                                                                                                     | No                | Potential              |
| <b>Shining guest ant</b><br><i>Formicoxenus nitidulus</i>            | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub.                                                                                                                                                                                 | No                | Potential              |
| <b>Lulworth skipper</b><br><i>Thymelicus action</i><br>(butterfly)   | None Present.                                                                                                                                                                                                                                           | Yes               | Marginal               |
| <b>Grizzled skipper</b><br><i>Pyrgus malvae</i><br>(butterfly)       | A1 – Woodland and scrub / Woodland (edge & rides)<br><b>with Potentilla reptans, Rubus fruticosus &amp; Geum urbanum.</b>                                                                                                                               | No                | Potential              |

| SPECIES                                                           | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                     | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Brown hairstreak</b><br><i>Thecla betulae</i><br>(butterfly)   | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>J2 – Miscellaneous / Boundaries / Hedgerows; <b>with</b> <i>Prunus spinosa</i> .                                                                                                                         | No                | Potential              |
| <b>Small blue</b><br><i>Cupido minimus</i><br>(butterfly)         | None Present.                                                                                                                                                                                                                                                                       | Yes               | Marginal               |
| <b>White admiral</b><br><i>Limenitis camilla</i><br>(butterfly)   | A1.1 – Woodland and scrub / Woodland / Broadleaved <b>with</b> <i>Lonicera periclymenum</i> .                                                                                                                                                                                       | No                | Potential              |
| <b>Wall</b><br><i>Lasiommata megera</i><br>(butterfly)            | J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Agrostis</i> sp., <i>Dactylis glomerata</i> , <i>Brachypodium sylvaticus</i> & <i>Holcus lanatus</i> .                                                            | No                | Present                |
| <b>Small heath</b><br><i>Coenonympha pamphilus</i><br>(butterfly) | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br><b>with</b> <i>Agrostis</i> , <i>Festuca</i> & <i>Poa</i> sp.                                                                                                                | No                | Potential              |
| <b>Ghost moth</b><br><i>Hepialus humuli</i>                       | B – Grassland and marsh <b>with</b> <i>Urtica dioica</i> .                                                                                                                                                                                                                          | No                | Potential              |
| <b>Goat moth</b><br><i>Cossus cossus</i>                          | A1.1 – Woodland and scrub / Woodland;<br>A3.1 – Woodland and scrub / Parkland/scattered trees;<br>J1.1 – Miscellaneous / Cultivated and disturbed land / Arable;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Salix</i> sp. & <i>Fraxinus excelsior</i> trees. | No                | Potential              |
| <b>Pale eggar</b><br><i>Trichiura crataegi</i><br>(moth)          | A1 – Woodland and scrub / Woodland (open & edge);<br>A2 – Woodland and scrub / Scrub;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Crataegus monogyna</i> & <i>Prunus spinosa</i> .                                                                            | No                | Potential              |
| <b>Lackey</b><br><i>Malacosoma neustria</i><br>(moth)             | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Crataegus monogyna</i> & <i>Prunus spinosa</i> .                                | No                | Potential              |

| SPECIES                                                                      | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Small emerald</b><br><i>Hemistola chrysoprasaria</i><br>(moth)            | A1 – Woodland and scrub / Woodland (on calcareous ground);<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Clematis vitalba</i> .                                                                                                            | No                | Potential              |
| <b>Dingy mocha</b><br><i>Cyclophora pendularia</i><br>(moth)                 | A1 – Woodland and scrub / Woodland (rides & clearings);<br>A2 – Woodland and scrub / Scrub;<br>B2 – Grassland and marsh / Neutral grassland;<br><b>with</b> <i>Salix</i> sp.                                                                                   | No                | Potential              |
| <b>Blood-vein</b><br><i>Timandra comae</i><br>(moth)                         | J1 – Cultivated/disturbed land;<br><b>with</b> <i>Atriplex</i> & <i>Rumex</i> sp. & <i>Polygonum aviculare</i> .                                                                                                                                               | No                | Potential              |
| <b>Dark-barred twin-spot carpet</b><br><i>Xanthorhoe ferrugata</i><br>(moth) | A1 – Woodland and scrub / Woodland;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Rumex</i> sp. & <i>Glechoma hederacea</i> .                               | No                | Potential              |
| <b>Shaded broad-bar</b><br><i>Scotopteryx chenopodiata</i><br>(moth)         | A1 – Woodland and scrub / Woodland (rides);<br>J1 – Cultivated/disturbed land;<br><b>with</b> <i>Trifolium repens</i> .                                                                                                                                        | No                | Potential              |
| <b>Dark spinach</b><br><i>Pelurga comitata</i><br>(moth)                     | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Atriplex</i> & <i>Chenopodium</i> sp.                                                 | No                | Potential              |
| <b>Small phoenix</b><br><i>Ecliptopera silaceata</i><br>(moth)               | A1 – Woodland and scrub / Woodland (rides);<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Hedgerows;<br><b>with</b> <i>Epilobium hirsutum</i> & <i>Chamerion angustifolium</i> .                      | No                | Potential              |
| <b>Pretty chalk carpet</b><br><i>Melanthia procellata</i><br>(moth)          | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>in association with</b> calcareous soil <b>with</b> <i>Clematis vitalba</i> . | No                | Potential              |

| SPECIES                                                                 | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                           | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Barred tooth-striped</b><br><i>Trichopteryx polyommata</i><br>(moth) | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>J2 – Hedgerows;<br><b>with</b> <i>Fraxinus excelsior</i> .                                                                                                                                                                                                              | No                | Potential              |
| <b>Dusky thorn</b><br><i>Ennomos fuscantaria</i><br>(moth)              | A1.1 – Woodland and scrub / Woodland / Broadleaved <b>with</b> <i>Fraxinus excelsior</i> .                                                                                                                                                                                                                                                                | No                | Potential              |
| <b>Brindled beauty</b><br><i>Lycia hirtaria</i><br>(moth)               | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Crataegus monogyna</i> .                                              | No                | Potential              |
| <b>Garden tiger</b><br><i>Arctia caja</i><br>(moth)                     | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Arctium</i> sp., <i>Urtica dioica</i> & <i>Rumex obtusifolius</i> .                                                | No                | Potential              |
| <b>White ermine</b><br><i>Spilosoma lubricipeda</i><br>(moth)           | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows; <b>with</b> <i>Rumex crispus</i> , <i>R. obtusifolius</i> & <i>Urtica dioica</i> .                                                                 | No                | Potential              |
| <b>Buff ermine</b><br><i>Spilosoma luteum</i><br>(moth)                 | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows; <b>with</b> <i>Lonicera periclymenum</i> , <i>Prunus domestica</i> & <i>Urtica dioica</i> . | No                | Potential              |

| SPECIES                                                           | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                                            | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Cinnabar</b><br><i>Tyria jacobaeae</i><br>(moth)               | A1 – Woodland and scrub / Woodland (rides);<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Senecio</i> sp.                                                                                                                                                                                                               | No                | Potential              |
| <b>Garden dart</b><br><i>Euxoa nigricans</i><br>(moth)            | B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Trifolium pratense</i> , <i>Plantago major</i> , <i>P. lanceolata</i> & <i>Rumex</i> sp.                                                                                                                                                                                     | No                | Potential              |
| <b>Lunar yellow underwing</b><br><i>Noctua orbona</i><br>(moth)   | A1 – Woodland and scrub / Woodland <b>with</b> <i>Dactylis glomerata</i> , <i>Elytrigia repens</i> , <i>Potentilla reptans</i> & <i>Festuca ovina</i> .                                                                                                                                                                                                                    | No                | Potential              |
| <b>Double dart</b><br><i>Graphiphora augur</i><br>(moth)          | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Prunus spinosa</i> , <i>Betula</i> , <i>Crataegus</i> & <i>Salix</i> sp. & <i>Rumex obtusifolius</i> . | No                | Potential              |
| <b>Small square-spot</b><br><i>Diarsia rubi</i><br>(moth)         | A1 – Woodland and scrub / Woodland (carr);<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Rumex</i> sp.                                                                                                                              | No                | Potential              |
| <b>Pale shining brown</b><br><i>Polia bombycina</i><br>(moth)     | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub.                                                                                                                                                                                                                                                                                             | No                | Potential              |
| <b>Bordered gothic</b><br><i>Heliophobus reticulata</i><br>(moth) | J1 – Miscellaneous / Cultivated/disturbed land <b>with</b> <i>Polygonum aviculare</i> .                                                                                                                                                                                                                                                                                    | No                | Potential              |

| SPECIES                                                          | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                                                                                                                            | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Dot moth</b><br><i>Melanchra persicariae</i>                  | A1 – Woodland and scrub / Woodland;<br>B – Grassland and marsh;<br>J1 Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Convolvulus arvensis</i> ,<br><i>Sambucus nigra</i> , <i>Humulus lupulus</i> ,<br><i>Rumex obtusifolius</i> , <i>Ribes nigrum</i> ,<br><i>Senecio vulgaris</i> ,<br><i>Trifolium repens</i> , <i>Corylus avellana</i> ,<br><i>Hedera helix</i> & <i>Urtica dioica</i> . | No                | Potential              |
| <b>Broom moth</b><br><i>Melanchra pisi</i>                       | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br><b>with</b> <i>Pteridium aquilinum</i> , <i>Rubus fruticosus</i> & <i>Salix</i> sp.                                                                                                                                                                                                                                                          | No                | Potential              |
| <b>Feathered gothic (moth)</b><br><i>Tholera decimalis</i>       | A1 – Woodland and scrub / Woodland (edges);<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> grasses particularly <i>Festuca ovina</i> .                                                                                                                                                                           | No                | Potential              |
| <b>Powdered quaker (moth)</b><br><i>Orthosia gracilis</i>        | A1 – Woodland and scrub / Woodland (damp);<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Salix</i> sp., <i>Prunus spinosa</i> & <i>Pulicaria dysenterica</i> .                                                                                                                                                                                                                                                                      | No                | Potential              |
| <b>Shoulder-striped wainscot (moth)</b><br><i>Mythimna comma</i> | A1 – Woodland and scrub / Woodland (damp);<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> grasses particularly <i>Dactylis glomerata</i> .                                                                                                                                                                                                                                                                  | No                | Potential              |
| <b>Sprawler (moth)</b><br><i>Asteroscopus sphinx</i>             | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Prunus spinosa</i> & <i>Crataegus monogyna</i> .                                                                                                                                                                                       | No                | Potential              |

| SPECIES                                                                  | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                          | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Deep-brown dart</b><br><i>Aporophyla lutulenta</i><br>(moth)          | A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Crataegus monogyna</i> .                                                                                                                                                                               | No                | Potential              |
| <b>Sword-grass</b><br><i>Xylena exsoleta</i><br>(moth)                   | A1 – Woodland and scrub / Woodland;<br>B – Grassland and marsh;<br><b>with</b> <i>Potentilla reptans</i> , <i>Senecio vulgaris</i> , <i>Cirsium</i> & <i>Rumex</i> sp.                                                                                                                                                                   | No                | Potential              |
| <b>Green-brindled crescent</b><br><i>Allophyes oxyacanthae</i><br>(moth) | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Prunus spinosa</i> & <i>Crataegus monogyna</i> .                     | No                | Potential              |
| <b>Flounced chestnut</b><br><i>Agrochola helvola</i><br>(moth)           | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br><b>with</b> <i>Salix</i> sp.                                                                                                                                                                                      | No                | Potential              |
| <b>Brown-spot pinion</b><br><i>Agrochola litura</i><br>(moth)            | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Crataegus monogyna</i> . | No                | Potential              |
| <b>Beaded chestnut</b><br><i>Agrochola lychnidis</i><br>(moth)           | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Crataegus monogyna</i> & other trees/shrubs.                                                    | No                | Potential              |

| SPECIES                                                           | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                        | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Centre-barred sallow</b><br><i>Atethmia centrago</i><br>(moth) | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Fraxinus excelsior</i> .                                                                                                                                                      | No                | Potential              |
| <b>Sallow</b><br><i>Xanthia icteritia</i><br>(moth)               | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Salix</i> sp.                                                                                                                                                                                                                 | No                | Potential              |
| <b>Grey dagger</b><br><i>Acronicta psi</i><br>(moth)              | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Prunus spinosa</i> & <i>Crataegus monogyna</i> .                                                   | No                | Potential              |
| <b>Knot grass</b><br><i>Acronicta rumicis</i><br>(moth)           | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Rubus fruticosus</i> , <i>Crataegus monogyna</i> , <i>Plantago lanceolata</i> , <i>P. major</i> & <i>Rumex obtusifolius</i> . | No                | Potential              |
| <b>Mouse moth</b><br><i>Amphipyra tragopoginis</i>                | A1 – Woodland and scrub / Woodland;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Crataegus monogyna</i> , <i>Salix</i> sp.                                                                                                                                                                                                     | No                | Potential              |
| <b>Dusky brocade</b><br><i>Apamea remissa</i><br>(moth)           | A1 – Woodland and scrub / Woodland (open);<br>B2 – Grassland and marsh / Neutral grassland;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Elytrigia repens</i> .                                                                                                                | No                | Potential              |

| SPECIES                                                      | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                     | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Large nutmeg</b><br><i>Apamea anceps</i><br>(moth)        | A1 – Woodland and scrub / Woodland (open & edges);<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Dactylis glomerata</i> & <i>Poa annua</i> .                                 | No                | Potential              |
| <b>Rosy minor</b><br><i>Mesoligia literosa</i><br>(moth)     | A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Dactylis glomerata</i> .                                                                                        | No                | Potential              |
| <b>Ear moth</b><br><i>Amphipoea oculea</i>                   | A1 – Woodland and scrub / Woodland (rides);<br>A2 – Woodland and scrub / Scrub;<br>J1 – Cultivated/disturbed land;<br><b>with</b> <i>Poa annua</i> .                                                                                                                | No                | Potential              |
| <b>Rosy rustic</b><br><i>Hydraecia micacea</i><br>(moth)     | A1 – Woodland and scrub / Woodland;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries / Hedgerows;<br><b>with</b> <i>Plantago lanceolata</i> , <i>Rumex obtusifolius</i> & <i>Arctium</i> sp.       | No                | Potential              |
| <b>Rustic</b><br><i>Hoplodrina blanda</i><br>(moth)          | A1 – Woodland and scrub / Woodland;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Rumex crispus</i> , <i>R. obtusifolius</i> , <i>Plantago major</i> , <i>P. lanceolata</i> .                                    | No                | Potential              |
| <b>Mottled rustic</b><br><i>Caradrina morpheus</i><br>(moth) | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1 – Miscellaneous / Cultivated/disturbed land;<br><b>with</b> <i>Rumex crispus</i> , <i>R. obtusifolius</i> , <i>Urtica dioica</i> & <i>Chenopodium</i> sp. | No                | Potential              |
| <b>Four-spotted moth</b><br><i>Tyta luctuosa</i>             | J1 – Miscellaneous / Cultivated/disturbed land <b>with</b> <i>Convolvulus arvensis</i> .                                                                                                                                                                            | No                | Potential              |
| <b>Hornet robberfly</b><br><i>Asilus crabroniformis</i>      | B – Grassland (semi-improved).                                                                                                                                                                                                                                      | No                | Potential              |

Summary: Invertebrates

- 7.1.6 Of the total 424 legally protected and/or UK BAP Priority Species of invertebrates, 185 occur in Dorset, and of this number, one butterfly species comprising wall is known to be present within the Swanworth Quarry Extension Phase 1 survey site and a further 67 species might potentially occur within the Swanworth Quarry Extension Phase 1 survey site. All 68 species are listed as UK BAP Priority Species and amount to an overall 37% of the county legally protected and UK BAP invertebrate fauna.
- 7.1.7 Table 6 sets out the potential number of UK BAP Priority Species of invertebrates associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.

**Table 6. The potential number of UK BAP Priority Species of invertebrate associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                | POTENTIAL NUMBER OF ASSOCIATED UK BAP INVERTEBRATE SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP INVERTEBRATE FAUNA |
|---------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------|
| A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural | 57                                                         | 31%                                                                               |
| A2.1 – Woodland and scrub / Scrub / Dense/continuous                | 34                                                         | 18%                                                                               |
| A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved  | 10                                                         | 5%                                                                                |
| B2.2 – Grassland and marsh / Neutral grassland / Semi-improved      | 33                                                         | 18%                                                                               |
| C1.1 – Tall herb and fern / Bracken / Continuous                    | 0                                                          | 0%                                                                                |
| J1.1 – Miscellaneous / Cultivated/disturbed land / Arable           | 41                                                         | 22%                                                                               |
| J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor   | 25                                                         | 14%                                                                               |
| J2.4 – Miscellaneous / Boundaries / Fence                           | 0                                                          | 0%                                                                                |
| J2.5 – Miscellaneous / Boundaries / Wall                            | 0                                                          | 0%                                                                                |
| J2.6 – Miscellaneous / Boundaries / Dry Ditch                       | 0                                                          | 0%                                                                                |
| J4 – Miscellaneous / Bare ground                                    | 1                                                          | 1%                                                                                |

Note: The cumulative total within Column 2 will typically exceed the total invertebrate fauna as many species occur in more than one habitat, and are therefore considered more than once.

## 7.2 Fish

### Desk-study: Fish

- 7.2.1 There are currently 14 species of freshwater fish listed as Priority Species within the UK Biodiversity Action Plan comprising common sturgeon *Acipenser sturio*, allis shad *Alosa alosa*, twaite shad *Alosa fallax*, European eel *Anguilla anguilla*, spined loach *Cobitis taenia*, vendace *Coregonus albula*, pollan *C. autumnalis*, whitefish *C. lavaretus*, river lamprey *Lampetra fluviatilis*, smelt *Osmerus eperlanus*, sea lamprey *Petramyzon marinus*, Atlantic salmon *Salmo salar*, brown trout *S. trutta* and Arctic charr *Salvelinus alpinus*.
- 7.2.2 Of these overall 14 UK BAP Priority Species of fish, common sturgeon, allis shad, twaite shad, vendace and whitefish are also legally protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, and common sturgeon is also protected under Schedule 2 of *The Conservation of Habitats and Species Regulations 2010*. In addition, although they are not UK BAP Priority Species, giant goby *Gobius cobitis*, Couch's goby *G. couchii*, short-snouted seahorse *Hippocampus hippocampus* and spiny seahorse *H. guttulatus* are protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*.
- 7.2.3 The data-search performed by DERC returned no records of legally protected and/or UK BAP Priority Species of fish occurring within the 500 m search radius.
- 7.2.4 In addition to the data-search, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of legally protected and/or UK Biodiversity Action Plan Priority Species of fish was also performed and is provided at Appendix D. The results of the DERC data-search, and the distribution and habitat requirements review provides the evidence-base upon which further predictive assessment is performed.

### Swanworth Quarry Extension predictive assessment: Fish

- 7.2.5 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local distribution, habitat requirements and ecology of each species, the potential likelihood of legally protected and/or UK Biodiversity Action Plan Priority Species of fish to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. The results of this assessment concluded that no suitable habitats exist within the site.

### Summary: Fish

- 7.2.6 Of the total 18 legally protected and/or UK BAP Priority Species of freshwater fish, 10 occur in Dorset, and of this number, none could potentially occur within the Swanworth Quarry Extension North Phase 1 survey site; no aquatic habitats exist.

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### 7.3 Amphibians

#### Desk-study: Amphibians

- 7.3.1 There are currently four species of amphibian listed as Priority Species within the UK Biodiversity Action Plan comprising great crested newt *Triturus cristatus*, pool frog *Pelophylax lessonae*, common toad *Bufo bufo* and natterjack toad *Epidalea calamita*.
- 7.3.2 Of these four UK BAP Priority Species of amphibian, great crested newt, pool frog and natterjack toad are also legally protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)* and Schedule 2 of *The Conservation of Habitats and Species Regulations 2010*.
- 7.3.3 The data-search performed by DERC returned no records of legally protected and/or UK BAP Priority Species of amphibian occurring within the 500 m search radius.
- 7.3.4 Great crested newts, common toads and natterjack toads exhibit specific preferences in the size and condition of breeding ponds utilised, and may return to the same pond (perhaps even the one in which they were themselves born) to breed year on year for their entire lives. However, amphibians of all species native to the UK spend the greater percentage of each year on land within favoured terrestrial habitat, with the majority of individuals only migrating to ponds for a brief period in spring in order to breed. This behaviour means that amphibians may occur on land at an appreciable distance from their breeding ponds. This is particularly the case with great crested newts and common toads, which are known to move over relatively long distances. Even in the case of sites where no breeding pond is present, the key questions are therefore whether legally protected and/or UK BAP Priority Species of amphibians occur within commuting distance and if so, whether the habitats present within the site represent terrestrial foraging habitat, or whether there is any reason for amphibians to commute through the site e.g. where the site is located between hibernacula and foraging grounds or breeding ponds. Natural England Standing Advice for great crested newts recommends that where suitable terrestrial habitat exists within 500 m of a potentially suitable breeding pond (even if that pond holds water only seasonally) the pond should be surveyed provided that the terrestrial habitat and potential breeding pond “...are not separated by significant barriers to dispersal such as a major trunk road or motorway” (Natural England undated).
- 7.3.5 A search for ponds was therefore performed as part of the desk-study in order to map the presence and location of ponds both within the Swanworth Quarry Extension Phase 1 survey site and within a 500 m radius. This status assessment concluded that there are no ponds potentially suitable for breeding great crested newts, common toads and/or natterjack toads within the Phase 1 survey site or within a 500 m radius.
- 7.3.6 In addition to the data-search and pond status assessment, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of legally protected and/or UK Biodiversity Action Plan Priority Species of amphibians was also performed and is provided at Appendix E.

The results of the DERC data-search and the distribution and habitat requirements review, provides the evidence-base upon which further predictive assessment is performed.

### Swanworth Quarry Extension predictive assessment: Amphibians

7.3.7 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local distribution, habitat requirements and ecology of each species, the potential likelihood of legally protected and/or UK Biodiversity Action Plan Priority Species of amphibian to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. A summary of the results of this assessment is provided at Table 7.

**Table 7. A summary of the potential likelihood for legally protected and/or UK Biodiversity Action Plan Priority Species of amphibian to be present within the Swanworth Quarry Extension Phase 1 survey site, based on their accepted national distribution, known local distribution, habitat requirements and ecology.**

| SPECIES                                                | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                 | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Great crested newt</b><br><i>Triturus cristatus</i> | <b>Breeding:</b> None Present.<br><b>Terrestrial:</b><br>A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                                                               | No                | Potential              |
| <b>Common toad</b><br><i>Bufo bufo</i>                 | <b>Breeding:</b> None Present.<br><b>Terrestrial:</b><br>A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge. | No                | Potential              |
| <b>Natterjack toad</b><br><i>Epidalea calamita</i>     | <b>Breeding:</b> None Present.<br><b>Terrestrial:</b> None Present.                                                                                                                                                                                                             | No                | Improbable             |

### Legislation: Amphibians

7.3.8 Great crested newts receive full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take this species;

- Intentionally or recklessly to damage or destroy, or obstruct access to, any structure or place used by this species for shelter or protection; or
- Intentionally or recklessly disturb this species when occupying a structure or place which it uses for that purpose.

Summary: Amphibians

7.3.9 Of the total four legally protected and/or UK BAP Priority Species of amphibian, three occur in Dorset, and of this number, two species comprising great crested newt and common toad might potentially occur within the Swanworth Quarry Extension Phase 1 survey site. These two species amount to an overall 67% of the county legally protected and UK BAP amphibian fauna. Great crested newt is legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)* and both species are listed as UK BAP Priority Species.

7.3.10 Table 8 sets out the potential number of legally protected and/or UK BAP Priority Species of amphibian associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.

**Table 8. The potential number of legally protected and/or UK BAP Priority Species of amphibian associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP AMPHIBIAN SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP AMPHIBIAN FAUNA |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural | 2                                                                                | 67%                                                                            |
| A2.1 – Woodland and scrub / Scrub / Dense/continuous                | 2                                                                                | 67%                                                                            |
| A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved  | 0                                                                                | 0%                                                                             |
| B2.2 – Grassland and marsh / Neutral grassland / Semi-improved      | 2                                                                                | 67%                                                                            |
| C1.1 – Tall herb and fern / Bracken / Continuous                    | 0                                                                                | 0%                                                                             |
| J1.1 – Miscellaneous / Cultivated/disturbed land / Arable           | 1                                                                                | 33%                                                                            |
| J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor   | 2                                                                                | 67%                                                                            |
| J2.4 – Miscellaneous / Boundaries / Fence                           | 0                                                                                | 0%                                                                             |
| J2.5 – Miscellaneous / Boundaries / Wall                            | 0                                                                                | 0%                                                                             |
| J2.6 – Miscellaneous / Boundaries / Dry Ditch                       | 0                                                                                | 0%                                                                             |

| PHASE 1 HABITAT TYPE                    | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP AMPHIBIAN SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP AMPHIBIAN FAUNA |
|-----------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>J4 – Miscellaneous / Bare ground</b> | 0                                                                                | 0%                                                                             |

Note: The cumulative total within Column 2 will typically exceed the total amphibian fauna as many species occur in more than one habitat, and are therefore considered more than once.

## 7.4 Reptiles

### Desk-study: Reptiles

- 7.4.1 All of the six species of reptile native to the British Isles, comprising slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, sand lizard *Lacerta agilis*, grass snake *Natrix natrix*, adder *Vipera berus* and smooth snake *Coronella austriaca*, are listed as Priority species within the UK Biodiversity Action Plan.
- 7.4.2 All six native reptile species receive protection under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*. Sand lizard and smooth snake receive additional protection under Schedule 2 of *The Conservation of Habitats and Species Regulations 2010*.
- 7.4.3 The data-search performed by DERC returned no records of legally protected and/or UK BAP Priority Species of reptile occurring within the 500 m search radius.
- 7.4.4 In addition to the data-search, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of legally protected and/or UK Biodiversity Action Plan Priority Species of reptiles was also performed and is provided at Appendix F. The results of the DERC data-search, and the distribution and habitat requirements review provides the evidence-base upon which further predictive assessment is performed.

### Swanworth Quarry Extension predictive assessment: Reptiles

- 7.4.5 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local distribution, habitat requirements and ecology of each species, the potential likelihood of legally protected and/or UK Biodiversity Action Plan Priority Species of reptile to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. A summary of the results of this assessment is provided at Table 9 on the following page.

**Table 9. A summary of the potential likelihood for legally protected and/or UK Biodiversity Action Plan Priority Species of reptile to be present within the Swanworth Quarry Extension Phase 1 survey site, based on their accepted national distribution, known local distribution, habitat requirements and ecology.**

| SPECIES                                           | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                          | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Slow-worm</b><br><i>Anguis fragilis</i>        | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge. | No                | Potential              |
| <b>Common lizard</b><br><i>Zootoca vivipara</i>   | A1 – Woodland and scrub / (open) Woodland;<br>A2 – Woodland and scrub / Scrub;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                      | No                | Potential              |
| <b>Sand lizard</b><br><i>Lacerta agilis</i>       | None Present.                                                                                                                                            | No                | Improbable             |
| <b>Grass snake</b><br><i>Natrix natrix</i>        | A1 – Woodland and scrub / (open) Woodland;<br>A2 – Woodland and scrub / Scrub;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                      | No                | Potential              |
| <b>Adder</b><br><i>Vipera berus</i>               | A1 – Woodland and scrub / (open) Woodland;<br>A2 – Woodland and scrub / Scrub;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                      | No                | Potential              |
| <b>Smooth snake</b><br><i>Coronella austriaca</i> | None Present.                                                                                                                                            | No                | Improbable             |

#### Legislation: Reptiles

- 7.4.6 Slow-worm, common lizard, grass snake and adder are protected against intentional killing under the *Wildlife & Countryside Act 1981 (& as amended)*.

#### Summary: Reptiles

- 7.4.7 Of the total six legally protected and/or UK BAP Priority Species of reptiles, all six occur in Dorset, and of this number, four species comprising slow-worm, common lizard, grass snake and adder might potentially occur within the Swanworth Quarry Extension Phase 1 survey site. These four species amount to an overall 67% of the county legally protected and UK BAP reptile fauna. All four species are listed as both UK BAP Priority Species and are legally protected under the *Wildlife & Countryside Act 1981 (& as amended)*.

- 7.4.8 Table 10 on the following page sets out the potential number of legally protected

and/or UK BAP Priority Species of reptile associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.

**Table 10. The potential number of legally protected and/or UK BAP Priority Species of reptile associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                       | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP REPTILE SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP REPTILE FAUNA |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural</b> | 4                                                                              | 67%                                                                          |
| <b>A2.1 – Woodland and scrub / Scrub / Dense/continuous</b>                | 4                                                                              | 67%                                                                          |
| <b>A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved</b>  | 0                                                                              | 0%                                                                           |
| <b>B2.2 – Grassland and marsh / Neutral grassland / Semi-improved</b>      | 1                                                                              | 11%                                                                          |
| <b>C1.1 – Tall herb and fern / Bracken / Continuous</b>                    | 0                                                                              | 0%                                                                           |
| <b>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable</b>           | 0                                                                              | 0%                                                                           |
| <b>J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor</b>   | 4                                                                              | 67%                                                                          |
| <b>J2.4 – Miscellaneous / Boundaries / Fence</b>                           | 0                                                                              | 0%                                                                           |
| <b>J2.5 – Miscellaneous / Boundaries / Wall</b>                            | 0                                                                              | 0%                                                                           |
| <b>J2.6 – Miscellaneous / Boundaries / Dry Ditch</b>                       | 0                                                                              | 0%                                                                           |
| <b>J4 – Miscellaneous / Bare ground</b>                                    | 0                                                                              | 0%                                                                           |

Note: The cumulative total within Column 2 will typically exceed the total reptile fauna as many species occur in more than one habitat, and are therefore considered more than once.

## 7.5 Birds

### Desk-study: Birds

7.5.1 There are currently 57 species of birds listed as Priority Species within the UK Biodiversity Action Plan comprising:-

- 5 species of Anseriformes (swans, geese and ducks);
- 4 species of Galliformes (grouse, partridges and pheasants);
- 1 species of Gaviiforme (divers);
- 1 species of Procellariiforme (petrels and shearwaters);
- 1 species of Ciconiiforme (bitterns, herons and spoonbills);
- 1 species of Gruiforme (rails and crakes);

- 8 species of Charadriiformes (stone-curlews, plovers, godwits, skuas, gulls and terns);
- 1 species of Columbiforme (pigeons and doves);
- 1 species of Cuculiforme (cuckoos);
- 1 species of Caprimulgiforme (nightjars);
- 2 species of Piciformes (woodpeckers); and
- 31 species of Passeriformes (larks, pipits and wagtails, wrens, thrushes, warblers, flycatchers, tits, shrikes, sparrows, finches and buntings).

7.5.2 The nests of all wild birds are protected under the *Wildlife & Countryside Act 1981 (& as amended)*. In addition, 17 UK BAP Priority Species receive an increased level of protection under Schedule 1 of the *Wildlife & Countryside Act 1981 (& as amended)* and, although they are not UK BAP Priority Species, a further 65 bird species are also listed under Schedule 1.

7.5.3 The data-search performed by DERC returned one record of a UK BAP Priority Species of bird occurring within the 500 m search radius. Table 11 summarises the record of the one bird species cited, its location, date and the distance between its recorded location and the Swanworth Quarry Extension Phase 1 survey site.

**Table 11. Record of one UK Biodiversity Action Plan Priority Species of bird occurring within 500 m of the Swanworth Quarry Extension Phase 1 survey site, its location, date and the distance between its recorded location and the Swanworth Quarry Extension Phase 1 survey site.**

| SPECIES                                      | LOCATION | DATE | DISTANCE FROM PHASE 1 SURVEY SITE |
|----------------------------------------------|----------|------|-----------------------------------|
| <b>Bullfinch</b><br><i>Pyrrhula pyrrhula</i> | SY968779 | 2012 | 442 m south                       |

7.5.4 In addition to the data-search, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of Schedule 1 and/or UK Biodiversity Action Plan Priority Species of birds was also performed and is provided at Appendix G. The results of the DERC data-search, and the distribution and habitat requirements review provides the evidence-base upon which further predictive assessment is performed.

#### Swanworth Quarry Extension predictive assessment: Birds

7.5.5 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local distribution, habitat requirements and ecology of each species, the potential likelihood of Schedule 1 protected and/or UK Biodiversity Action Plan Priority Species of birds to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. A summary of the results of this assessment is provided at Table 12 on the following page.

**Table 12. A summary of the potential likelihood for legally protected and/or UK Biodiversity Action Plan Priority Species of birds to be present within the Swanworth Quarry Extension Phase 1 survey site, based on their accepted national distribution, known local distribution, habitat requirements and ecology.**

| SPECIES                                                                     | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                      | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Bewick's swan</b><br><i>Cygnus columbianus</i><br>subsp. <i>bewickii</i> | <b>Wintering:</b><br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.                                                                                                                                                                                   | No                | Potential              |
| <b>Grey partridge</b><br><i>Perdix perdix</i>                               | <b>Breeding &amp; wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable;<br>J2 – Miscellaneous / Hedgerows.                                                                                                     | No                | Potential              |
| <b>Quail</b><br><i>Coturnix coturnix</i>                                    | <b>Breeding:</b><br>B – Grassland and marsh (open);<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.                                                                                                                                                 | No                | Potential              |
| <b>Red kite</b><br><i>Milvus milvus</i>                                     | <b>Breeding &amp; wintering:</b><br>A1.1.1 – Woodland and scrub /<br>Woodland / Broadleaved / Semi-<br>natural; <b>in association with</b><br>B – Grassland and marsh; <b>&amp;/or</b><br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.              | No                | Potential              |
| <b>Marsh harrier</b><br><i>Circus aeruginosus</i>                           | <b>Breeding &amp; wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.                                                                                                                                        | No                | Potential              |
| <b>Hen harrier</b><br><i>Circus cyaneus</i>                                 | <b>Wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable;<br>(in association with H – Coastland;<br>adjacent to site).                                                                                          | No                | Potential              |
| <b>Montagu's harrier</b><br><i>Circus pygargus</i>                          | <b>Breeding:</b><br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.                                                                                                                                                                                    | No                | Potential              |
| <b>Goshawk</b><br><i>Accipiter gentilis</i>                                 | <b>Breeding &amp; wintering:</b><br>A1 – Woodland and scrub /<br>Woodland (all types);<br><b>in association with</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable;<br>J2 – Miscellaneous / Boundaries /<br>Hedgerows. | No                | Potential              |
| <b>Merlin</b><br><i>Falco columbarius</i>                                   | <b>Wintering:</b><br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable (in<br>association with H – Coastland;<br>adjacent to site).                                                                                                                       | No                | Potential              |

| SPECIES                                                      | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                  | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Lapwing</b><br><i>Vanellus vanellus</i>                   | <b>Breeding &amp; wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.                                                                                                                                                                                                                    | No                | Potential              |
| <b>Curlew</b><br><i>Numenius arquata</i>                     | <b>Breeding:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable<br>(lowland).                                                                                                                                                                                                                       | No                | Potential              |
| <b>Mediterranean gull</b><br><i>Larus melanocephalus</i>     | <b>Breeding:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable;<br>(in association with H – Coastland;<br>adjacent to site).                                                                                                                                                                       | No                | Potential              |
| <b>Turtle dove</b><br><i>Streptopelia turtur</i>             | <b>Breeding:</b><br>A1.1 – Woodland and scrub /<br>Woodland / Broadleaved (edge);<br>A3 – Woodland and scrub /<br>Parkland/scattered trees;<br>J1 – Miscellaneous /<br>Cultivated/disturbed land;<br>J2 – Miscellaneous / Boundaries /<br>Hedgerows; <b>in association with</b><br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable. | No                | Potential              |
| <b>Cuckoo</b><br><i>Cuculus canorus</i>                      | <b>Breeding:</b><br>A1 – Woodland and scrub /<br>Woodland;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub /<br>Parkland/scattered trees; and<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable.                                                                                                                    | No                | Potential              |
| <b>Barn owl</b><br><i>Tyto alba</i>                          | <b>Breeding &amp; wintering:</b><br>A1 – Woodland and scrub /<br>Woodland;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable;<br>J2 – Miscellaneous / Boundaries /<br>Hedgerows.                                                                                                                       | No                | Potential              |
| <b>Bee-eater</b><br><i>Merops apiaster</i>                   | <b>Non-breeding passage &amp; breeding:</b><br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub /<br>Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land / Arable;<br>(in association with H – Coastland;<br>adjacent to site).                                              | No                | Potential              |
| <b>Lesser spotted woodpecker</b><br><i>Dendrocopos minor</i> | <b>Breeding &amp; wintering:</b><br>A1.1 – Woodland and scrub /<br>Woodland / Broadleaved;<br>A3 – Woodland and scrub /<br>Parkland/scattered trees.                                                                                                                                                                                             | No                | Potential              |

| SPECIES                                                | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                         | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Firecrest</b><br><i>Regulus ignicapilla</i>         | <b>Wintering:</b><br>A1 – Woodland and scrub / Woodland (valleys);<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2 – Miscellaneous / Boundaries / Hedgerows.                                                                                                           | No                | Potential              |
| <b>Marsh tit</b><br><i>Poecile palustris</i>           | <b>Breeding:</b><br>A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A3 – Woodland and scrub / Parkland/scattered trees; and<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable<br><b>in association with</b><br>A1 – Woodland and scrub / Woodland.                                                    | No                | Potential              |
| <b>Woodlark</b><br><i>Lullula arborea</i>              | <b>Breeding:</b><br>A1 – Woodland and scrub / Woodland (open);<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh.<br><b>Wintering:</b><br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable.                                                | No                | Potential              |
| <b>Skylark</b><br><i>Alauda arvensis</i>               | <b>Breeding:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable.<br><b>Wintering:</b><br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable.                                                                                                                           | No                | Potential              |
| <b>Grasshopper warbler</b><br><i>Locustella naevia</i> | <b>Breeding:</b><br>A2.1 – Woodland and scrub / Scrub / Dense/continuous;<br>B – Grassland and marsh.                                                                                                                                                                                                                   | No                | Potential              |
| <b>Starling</b><br><i>Sturnus vulgaris</i>             | <b>Breeding &amp; wintering:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;<br>J4 – Miscellaneous / Bare ground;<br>(in association with H – Coastland; adjacent to site). | No                | Potential              |

| SPECIES                                               | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                                                                                                                    | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Fieldfare</b><br><i>Turdus pilaris</i>             | <b>Wintering:</b><br>A1 – Woodland and scrub / Woodland (edge);<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;<br>J2 – Miscellaneous / Boundaries / Hedgerows.                                                                                                                                                                                   | No                | Potential              |
| <b>Song thrush</b><br><i>Turdus philomelos</i>        | <b>Breeding &amp; wintering:</b><br>A1 – Woodland and scrub / Woodland (all types);<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2 – Miscellaneous / Boundaries / Hedgerows.                                                                                                                                                                                                                                                         | No                | Potential              |
| <b>Redwing</b><br><i>Turdus iliacus</i>               | <b>Wintering:</b><br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable;<br>J2 – Miscellaneous / Boundaries / Hedgerows.                                                                                                                                                                                              | No                | Potential              |
| <b>Spotted flycatcher</b><br><i>Muscicapa striata</i> | <b>Breeding:</b><br>A1 – Woodland and scrub / Woodland (edges);<br>A3 – Woodland and scrub / Parkland/scattered trees.                                                                                                                                                                                                                                                                                                                             | No                | Potential              |
| <b>Bluethroat</b><br><i>Luscinia svecica</i>          | <b>Non-breeding passage:</b><br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>(in association with H – Coastland; adjacent to site).                                                                                                                                                                                                                                                                                             | No                | Potential              |
| <b>Dunnock</b><br><i>Prunella modularis</i>           | <b>Breeding &amp; wintering:</b><br>A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A2.1 – Woodland and scrub / Scrub / Dense/continuous;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>B – Grassland and marsh;<br>C1 – Tall herb and fern / Bracken;<br><b>in association with</b><br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable;<br><b>in association with</b><br>J2 – Miscellaneous / Boundaries / Hedgerows. | No                | Potential              |

| SPECIES                                                  | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                                         | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>House sparrow</b><br><i>Passer domesticus</i>         | <b>Breeding &amp; wintering:</b><br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub /<br>Parkland/scattered trees;<br>J1 – Miscellaneous /<br>Cultivated/disturbed land;<br>J4 – Miscellaneous / Bare ground.                                                                                                                                               | No                | Potential              |
| <b>Tree pipit</b><br><i>Anthus trivialis</i>             | <b>Breeding:</b><br>A1 – Woodland and scrub /<br>Woodland (edge);<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub /<br>Parkland/scattered trees;<br>B – Grassland and marsh;<br>J2 – Miscellaneous / Boundaries /<br>Hedgerows.                                                                                                                          | No                | Potential              |
| <b>Linnet</b><br><i>Carduelis cannabina</i>              | <b>Breeding:</b><br>A1.1.1 – Woodland and scrub /<br>Woodland / Broadleaved / Semi-<br>natural;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land/ Arable;<br>J2 – Miscellaneous / Boundaries /<br>Hedgerows.<br><b>Wintering:</b><br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land/ Arable. | No                | Potential              |
| <b>Twite</b><br><i>Carduelis flavirostris</i>            | <b>Wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous /<br>Cultivated/disturbed land/ Arable<br>(in association with H – Coastland;<br>adjacent to site).                                                                                                                                                                                               | No                | Potential              |
| <b>Lesser redpoll</b><br><i>Carduelis cabaret</i>        | <b>Breeding &amp; wintering:</b><br>A2.1 – Woodland and scrub / Scrub /<br>Dense/continuous;<br>A3 – Woodland and scrub /<br>Parkland/scattered trees;<br><b>in association with</b><br>J2 – Miscellaneous / Boundaries /<br>Hedgerows;<br><b>with <i>Salix &amp; Crataegus</i> sp.</b>                                                                                 | No                | Potential              |
| <b>Scarlet rosefinch</b><br><i>Carpodacus erythrinus</i> | <b>Non-breeding passage:</b><br>A2 – Woodland and scrub / Scrub;<br>J2 – Miscellaneous / Boundaries /<br>Hedgerows;<br>(in association with H – Coastland;<br>adjacent to site).                                                                                                                                                                                        | No                | Potential              |

| SPECIES                                               | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                     | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Bullfinch</b><br><i>Pyrrhula pyrrhula</i>          | <b>Breeding &amp; wintering:</b><br>A1 – Woodland and scrub / Woodland (all types);<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable;<br>J2 – Miscellaneous / Boundaries / Hedgerows.                                                         | Yes               | Probable               |
| <b>Snow bunting</b><br><i>Plectrophenax nivalis</i>   | <b>Wintering:</b><br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable.                                                                                                                                                                                                                                                                      | No                | Potential              |
| <b>Lapland bunting</b><br><i>Calcarius lapponicus</i> | <b>Wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable.                                                                                                                                                                                                                                          | No                | Potential              |
| <b>Yellowhammer</b><br><i>Emberiza citrinella</i>     | <b>Breeding:</b><br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>C1 – Tall herb and fern / Bracken;<br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable;<br><b>in association with</b><br>J2 – Miscellaneous / Boundaries / Hedgerows.<br><b>Wintering:</b><br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable. | No                | Potential              |
| <b>Reed bunting</b><br><i>Emberiza schoeniclus</i>    | <b>Breeding:</b><br>A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable.<br><b>Wintering:</b><br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable.                                                                              | No                | Potential              |
| <b>Corn bunting</b><br><i>Emberiza calandra</i>       | <b>Breeding:</b><br>B – Grassland and marsh.<br><b>Wintering:</b><br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land/ Arable.                                                                                                                                                                                          | No                | Potential              |

### Legislation: Birds

7.5.6 The nests of all wild birds are protected under the *Wildlife & Countryside Act 1981 (& as amended)* under which it is an offence to:-

- Intentionally kill, injure or take any wild bird;
- Intentionally damage, destroy or take the nest of any wild bird while it is in use or being built; or

- Intentionally destroy an egg of any wild bird.

7.5.7 Bird species listed on Schedule 1 of the Act receive additional protection that makes it an offence to intentionally or recklessly disturb the adults or their dependent young while they are at, or near to, an active nest site. Schedule 1 includes Bewick's swan *Cygnus columbianus* subsp. *bewickii*, red kite *Milvus milvus*, marsh harrier *Circus aeruginosus*, hen harrier *Circus cyaneus*, Montagu's harrier *Circus pygargus*, goshawk *Accipiter gentilis*, merlin *Falco columbarius*, barn owl *Tyto alba*, bee-eater *Merops apiaster*, firecrest *Regulus ignicapilla*, woodlark *Lullula arborea*, fieldfare *Turdus pilaris*, redwing *Turdus iliacus* and scarlet rosefinch *Capoacus erythinus*.

#### Summary: Birds

7.5.8 Of the total 122 Schedule 1 and/or UK BAP Priority Species of birds, 100 occur in Dorset, and of this number linnet *Carduelis cannabina* are known to be present within the Swanworth Quarry Extension Phase 1 site, the presence of bullfinch *Pyrrhula pyrrhula* is considered probable and 40 species might potentially occur within the Swanworth Quarry Extension Phase 1 site. These 42 species amount to an overall 42% of the county legally protected and UK BAP avifauna. Of these 42 species:-

- 24 species are UK BAP Priority Species;
- 19 species are legally protected under the *Wildlife & Countryside Act 1981 (& as amended)*; and
- Bewick's swan and woodlark are listed as both UK BAP Priority Species and are legally protected under the *Wildlife & Countryside Act 1981 (& as amended)*.

7.5.9 Table 13 sets out the potential number of legally protected and/or UK BAP Priority Species of bird associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.

**Table 13. The potential number of legally protected and/or UK BAP Priority Species of bird associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                       | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP BIRD SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP BIRD FAUNA |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural</b> | 18                                                                          | 18%                                                                       |
| <b>A2.1 – Woodland and scrub / Scrub / Dense/continuous</b>                | 16                                                                          | 16%                                                                       |
| <b>A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved</b>  | 17                                                                          | 17%                                                                       |
| <b>B2.2 – Grassland and marsh / Neutral grassland / Semi-improved</b>      | 27                                                                          | 27%                                                                       |

| PHASE 1 HABITAT TYPE                                                     | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP BIRD SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP BIRD FAUNA |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>C1.1 – Tall herb and fern / Bracken / Continuous</b>                  | 2                                                                           | 2%                                                                        |
| <b>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable</b>         | 32                                                                          | 32%                                                                       |
| <b>J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor</b> | 15                                                                          | 15%                                                                       |
| <b>J2.4 – Miscellaneous / Boundaries / Fence</b>                         | 0                                                                           | 0%                                                                        |
| <b>J2.5 – Miscellaneous / Boundaries / Wall</b>                          | 0                                                                           | 0%                                                                        |
| <b>J2.6 – Miscellaneous / Boundaries / Dry Ditch</b>                     | 0                                                                           | 0%                                                                        |
| <b>J4 – Miscellaneous / Bare ground</b>                                  | 2                                                                           | 2%                                                                        |

Note: The cumulative total within Column 2 will typically exceed the total bird fauna as many species occur in more than one habitat, and are therefore considered more than once.

## 7.6 Mammals (excluding bats)

### Desk-study: Mammals (excluding bats)

- 7.6.1 There are currently 11 terrestrial mammals listed as Priority Species within the UK Biodiversity Action Plan comprising red squirrel *Sciurus vulgaris*, common dormouse *Muscardinus avellanarius*, water vole *Arvicola amphibius*, harvest mouse *Micromys minutus*, brown hare *Lepus europaeus*, mountain hare *Lepus timidus*, hedgehog *Erinaceus europaeus*, wildcat *Felis sylvestris*, otter *Lutra lutra*, pine marten *Martes martes* and polecat *Mustela putorius*. Of these 11 species, the restricted distribution of red squirrel, mountain hare, wildcat and pine marten will in the greater percentage of cases preclude the need for consideration within the scope of this report, and discussion as to their potential presence will be limited to geographical distribution alone.
- 7.6.2 Of the 11 UK BAP Priority Species of terrestrial mammal, red squirrel, common dormouse, water vole, wildcat, otter and pine marten are legally protected under the *Wildlife & Countryside Act 1981 (& as amended)*, with dormice, wildcats, otters and pine martens receiving additional protection under *The Conservation of Habitats and Species Regulations 2010*. In addition, although they are not UK BAP Priority Species, badgers *Meles meles* and their occupied setts are protected under the *Protection of Badgers Act 1992*.
- 7.6.3 The data-search performed by DERC returned two records of one UK BAP Priority Species of mammal occurring within the 500 m search radius. Table 14 on the following page summarises the records of the one mammal species cited, its location, date and the distance between its recorded location and the Swanworth Quarry Extension Phase 1 survey site.

**Table 14. Records of one UK Biodiversity Action Plan Priority Species of mammal occurring within 500 m of the Swanworth Quarry Extension Phase 1 survey site, its location, date and the distance between its recorded location and the Swanworth Quarry Extension Phase 1 survey site.**

| SPECIES                | LOCATION | DATE | DISTANCE FROM PHASE 1 SURVEY SITE |
|------------------------|----------|------|-----------------------------------|
| <b>Brown hare</b>      | SY965791 | 2003 | 295 m north                       |
| <i>Lepus europaeus</i> | SY970782 | 2008 | 288 m south-east                  |

7.6.4 In addition to the data-search, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of legally protected and/or UK Biodiversity Action Plan Priority Species of mammals was also performed and is provided at Appendix H. The results of the DERC data-search, and the distribution and habitat requirements review provides the evidence-base upon which further predictive assessment is performed.

Swanworth Quarry Extension predictive assessment: Mammals (excluding bats)

7.6.5 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local distribution, habitat requirements and ecology of each species, the potential likelihood of legally protected and/or UK Biodiversity Action Plan Priority Species of terrestrial mammals to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. A summary of the results of this assessment is provided at Table 15.

**Table 15. A summary of the potential likelihood for legally protected and/or UK Biodiversity Action Plan Priority Species of terrestrial mammals (excluding bats) to be present within the Swanworth Quarry Extension Phase 1 survey site, based on their accepted national distribution, known local distribution, habitat requirements and ecology.**

| SPECIES                                                   | HABITAT PRESENT IN PHASE 1 SITE                                                                                              | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Common dormouse</b><br><i>Muscardinus avellanarius</i> | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge. | No                | Potential              |
| <b>Water vole</b><br><i>Arvicola amphibius</i>            | None Present.                                                                                                                | No                | Improbable             |

| SPECIES                                         | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                     | HISTORIC EVIDENCE | LIKELIHOOD OF PRESENCE |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|
| <b>Harvest mouse</b><br><i>Micromys minutus</i> | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.              | No                | Potential              |
| <b>Brown hare</b><br><i>Lepus europaeus</i>     | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.              | Yes               | Probable               |
| <b>Hedgehog</b><br><i>Erinaceus europaeus</i>   | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                                                                            | No                | Potential              |
| <b>Badger</b><br><i>Meles meles</i>             | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                                                                            | No                | Potential              |
| <b>Otter</b><br><i>Lutra lutra</i>              | None Present.                                                                                                                                                                                                                       | No                | Potential              |
| <b>Polecat</b><br><i>Mustela putorius</i>       | A1 – Woodland and scrub / Woodland (edge/copse);<br>A2 – Woodland and scrub / Scrub;<br>B – Grassland and marsh;<br>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge. | No                | Potential              |

Legislation: Mammals (excluding bats)

7.6.6 Common dormouse is listed as a Priority Species within the UK Biodiversity Action Plan. In addition, the species receive full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and*

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*Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take this species;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by this species for shelter or protection; or
- Intentionally or recklessly disturb this species when occupying a structure or place which it uses for that purpose.

7.6.7 Badgers and their occupied setts are protected under the *Protection of Badgers Act 1992*. It is an offence to kill a badger, to disturb a badger when in its sett or to damage or destroy an occupied sett. The Act defines an occupied sett as “any structure or place which displays signs indicating current use by a badger.” Natural England (2009) have provided guidance on the definition of ‘current use,’ stating that “for a sett to fall within the definition of the Act, a badger need not be in current occupation, and may not have been for some time. As long as there are signs present indicating “current use” the sett is defined as such in the Act and is therefore protected. The maximum lapse of time between last occupation by badgers and the inspection of a sett for it to be considered in “current use” is how long it takes the signs to disappear, or more precisely, to appear so old as to not indicate “current use” ... A sett is therefore protected as long as such signs remain present. In practice, this could potentially be for a period of several weeks after the last actual occupation of the sett by a badger or badgers.”

Summary: Mammals (excluding bats)

7.6.8 Of the total 12 legally protected and/or UK BAP Priority Species of mammals (excluding bats), eight (excluding red squirrel on Brownsea Island) occur in Dorset, and of this number, badgers are known to be present within the Swanworth Quarry Extension Phase 1 survey site, the presence of brown hare is considered probable and a further four species might potentially occur within the Swanworth Quarry Extension Phase 1 survey site. These eight species amount to an overall 67% of the county legally protected and UK BAP fauna. Of these six species:-

- Common dormouse is listed as a UK BAP Priority Species and is legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*;
- Four species comprising harvest mouse, brown hare hedgehog and polecat are listed as UK BAP Priority Species; and
- Badgers are legally protected under the *Protection of Badgers Act 1992*.

7.6.9 Table 16 on the following page sets out the potential number of legally protected and/or UK BAP Priority Species of mammal (excluding bats) associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.

**Table 16. The potential number of legally protected and/or UK BAP Priority Species of mammal (excluding bats) associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP MAMMAL (EXCLUDING BATS) SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP MAMMAL (EXCLUDING BATS) FAUNA |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural | 6                                                                                              | 75%                                                                                          |
| A2.1 – Woodland and scrub / Scrub / Dense/continuous                | 6                                                                                              | 75%                                                                                          |
| A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved  | 0                                                                                              | 0%                                                                                           |
| B2.2 – Grassland and marsh / Neutral grassland / Semi-improved      | 5                                                                                              | 63%                                                                                          |
| C1.1 – Tall herb and fern / Bracken / Continuous                    | 0                                                                                              | 0%                                                                                           |
| J1.1 – Miscellaneous / Cultivated/disturbed land / Arable           | 4                                                                                              | 50%                                                                                          |
| J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor   | 6                                                                                              | 75%                                                                                          |
| J2.4 – Miscellaneous / Boundaries / Fence                           | 0                                                                                              | 0%                                                                                           |
| J2.5 – Miscellaneous / Boundaries / Wall                            | 0                                                                                              | 0%                                                                                           |
| J2.6 – Miscellaneous / Boundaries / Dry Ditch                       | 0                                                                                              | 0%                                                                                           |
| J4 – Miscellaneous / Bare ground                                    | 0                                                                                              | 0%                                                                                           |

Note: The cumulative total within Column 2 will typically exceed the total mammal (excluding bats) fauna as many species occur in more than one habitat, and are therefore considered more than once.

## 7.7 Bats

### Desk-study: Bats

7.7.1 There are currently seven species of bat, comprising barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *R. hipposideros*, listed as Priority Species within the UK Biodiversity Action Plan.

7.7.2 The seven UK BAP Priority Species, plus a further ten (comprising serotine *Eptesicus serotinus*, Brandt's bat *Myotis brandtii*, Alcatheo's bat *M. alcatheo*, Daubenton's bat *M. daubentonii*, whiskered bat *M. mystacinus*, Natterer's bat *M. nattereri*, Leisler's bat *Nyctalus leisleri*, Nathusius' pipistrelle *Pipistrellus nathusii*, common pipistrelle *P. pipistrellus* and grey long-eared bat *Plecotus austriacus*) are

legally protected under both the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*.

7.7.3 The data returned from the search performed by DERC was divided into ‘roost’ records which indicate a colony of a specific species is at least seasonally present every year within the search area, and ‘in-flight’ records which simply indicate a species has been recorded in the area but (due to the migratory nature of several species) can offer no further insight into the resident status of the species. A summary of roost records is provided at Table 17. No in-flight records were returned within the 1km search radius.

**Table 17. Summary of bat-roost records occurring within a 5 km radius of the Swanworth Quarry Extension site, provided by DERC.**

| SPECIES                                             | LOCATION     | DATE | DISTANCE FROM SITE |
|-----------------------------------------------------|--------------|------|--------------------|
| <b>Serotine</b><br><i>Eptesicus serotinus</i>       | SY976760     | 2010 | 2.51 km south-east |
|                                                     | SY96388205   | 2010 | 3.2 km north       |
|                                                     | SY986824     | 2007 | 4.15 km north-east |
|                                                     | SY962818     | 2006 | 3.01 km north      |
|                                                     | SY970800     | 2004 | 1.27 km north-east |
|                                                     | SY999789     | 1991 | 3.13 km north-east |
|                                                     | SY963815     | 1990 | 2.82 km north      |
|                                                     | SY917799     | 1989 | 4.68 km north-west |
| <b>Bechstein’s bat</b><br><i>Myotis bechsteini</i>  | SY948813     | 1988 | 2.95 km north-west |
|                                                     | SZ0079       | 2007 | 3.77 km east       |
|                                                     | SY986788     | 2006 | 1.82 km east       |
|                                                     | SY987787     | 2006 | 1.91 km east       |
|                                                     | SY990789     | 2006 | 2.22 km east       |
|                                                     | SY999794     | 2006 | 3.22 km east       |
| <b>Brandt’s bat</b><br><i>Myotis brandtii</i>       | SY987788     | 2005 | 1.92 km east       |
|                                                     | SY976760     | 2010 | 2.51 km south-east |
|                                                     | SY987787     | 2006 | 1.91 km east       |
| <b>Daubenton’s bat</b><br><i>Myotis daubentonii</i> | SY948813     | 1988 | 2.95 km north-west |
|                                                     | SY976760     | 2010 | 2.51 km south-east |
|                                                     | SY986788     | 2006 | 1.82 km east       |
|                                                     | SY987787     | 2006 | 1.91 km east       |
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>    | SY990789     | 2006 | 2.22 km east       |
|                                                     | SY976760     | 2010 | 2.51 km south-east |
|                                                     | SY986788     | 2006 | 1.82 km east       |
|                                                     | SY987787     | 2006 | 1.91 km east       |
|                                                     | SY948813     | 1988 | 2.95 km north-west |
| <b>Natterer’s bat</b><br><i>Myotis nattereri</i>    | SY986788     | 2010 | 1.91 km east       |
|                                                     | SY976760     | 2010 | 2.51 km south-east |
|                                                     | SY977761     | 2009 | 2.48 km south-east |
|                                                     | SY959835     | 2008 | 4.71 km north-west |
|                                                     | SY986788     | 2006 | 1.82 km east       |
|                                                     | SY987787     | 2006 | 1.91 km east       |
|                                                     | SY990789     | 2006 | 2.22 km east       |
| <b>Leisler’s bat</b><br><i>Nyctalus leisleri</i>    | SY987788     | 2005 | 1.92 km east       |
|                                                     | SY959822     | 1983 | 3.51 km north      |
| <b>Noctule</b><br><i>Nyctalus noctula</i>           | SY9763676131 | 2011 | 2.47 km south-east |
|                                                     | SY9588181001 | 2011 | 2.27 km north-west |

| SPECIES                                                          | LOCATION     | DATE               | DISTANCE FROM SITE |
|------------------------------------------------------------------|--------------|--------------------|--------------------|
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i>    | SY991803     | 2007               | 2.93 km north-east |
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i>    | SZ001797     | 2012               | 3.55 km north-east |
|                                                                  | SY9588181001 | 2011               | 2.29 km north      |
|                                                                  | SY9763676131 | 2011               | 2.45 km south-east |
|                                                                  | SY949813     | 2011               | 2.89 km north-west |
|                                                                  | SY96058220   | 2011               | 3.36 km north      |
|                                                                  | SZ001797     | 2011               | 3.49 km east       |
|                                                                  | SY987788     | 2009               | 1.97 km east       |
|                                                                  | SZ01437892   | 2009               | 4.87 km east       |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>       | SY916796     | 2007               | 4.71 km north-west |
|                                                                  | SY9763676131 | 2011               | 2.46 km south      |
|                                                                  | SY98698082   | 2006               | 2.86 km north-east |
|                                                                  | SY949813     | 2011               | 2.92 km north-east |
|                                                                  | SY96388205   | 2010               |                    |
|                                                                  | SY976760     | 2010               | 2.51 km south-east |
|                                                                  | SY987788     | 2009               | 1.82 km east       |
|                                                                  | SY977761     | 2009               | 2.48 km south-east |
|                                                                  | SY986808     | 2007               | 2.9 km north-east  |
|                                                                  | SY986824     | 2007               | 4.21 km north-east |
|                                                                  | SY987787     | 2006               | 1.91 km east       |
|                                                                  | SY962818     | 2006               | 3.01 km north      |
| SY986788                                                         | 2006         | 3.2 km north       |                    |
| SY999794                                                         | 2006         | 3.22 km east       |                    |
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | SY9696582195 | 2011               | 3.36 km north-east |
|                                                                  | SY96058220   | 2011               | 3.39 km north      |
|                                                                  | SY976760     | 2010               | 2.51 km south-east |
|                                                                  | SY96058220   | 2009               | 3.42 km north      |
|                                                                  | SY960882     | 2009               | 3.43 km north      |
|                                                                  | SY9769476164 | 2007               | 2.38 km south-east |
|                                                                  | SY986788     | 2006               | 1.82 km east       |
|                                                                  | SY987787     | 2006               | 1.91 km east       |
|                                                                  | SY990789     | 2006               | 2.22 km east       |
|                                                                  | SY9902078922 | 2006               | 2.32 km east       |
|                                                                  | SY9789179240 | 2005               | 1.29 km east       |
|                                                                  | SY9921576873 | 2005               | 2.82 km south-east |
|                                                                  | SY992768     | 2005               | 2.9 km south-east  |
|                                                                  | SZ014782     | 2005               | 4.61 km south-east |
| SY990789                                                         | 1999         | 2.25 km north-east |                    |

7.7.4 In addition to the data-search, in order to provide a foundation for predictive assessment, a review of the geographical distribution and habitat requirements of legally protected and/or UK Biodiversity Action Plan Priority Species of bats was also performed and is provided at Appendix I. The results of the DERC data-search, and the distribution and habitat requirements review provides the evidence-base upon which further predictive assessment is performed.

#### Swanworth Quarry Extension predictive assessment: Bats

7.7.5 Applying the criteria set out in Section 4.4 of this text to the habitats present within the site, and taking into account the accepted national distribution, known local

distribution, habitat requirements and ecology of each species, the potential likelihood of legally protected and/or UK Biodiversity Action Plan Priority Species of bats to occur within the site was considered. It should be noted that no attempt is made to gauge habitat quality. A summary of the results of this assessment is provided at Table 18.

**Table 18. A summary of the potential likelihood for legally protected and/or UK Biodiversity Action Plan Priority Species of bats to be present within the Swanworth Quarry Extension Phase 1 survey site, based on their accepted national distribution, known local distribution, habitat requirements and ecology.**

| SPECIES                                               | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                     | HISTORIC EVIDENCE                                                                         | LIKELIHOOD OF PRESENCE                                                                                         |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Barbastelle</b><br><i>Barbastella barbastellus</i> | <b>Foraging, summer &amp; winter roosting:</b><br>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.                                                                                                                                                                              | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No  | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Potential<br><b>Winter roosting:</b><br>Potential  |
| <b>Serotine</b><br><i>Eptesicus serotinus</i>         | <b>Foraging:</b><br>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural (edge);<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>None Present. | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Marginal<br><b>Winter roosting:</b><br>Improbable  |
| <b>Bechstein's bat</b><br><i>Myotis bechsteinii</i>   | <b>Foraging:</b><br>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.<br><b>Summer roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter roosting:</b><br>None Present.                                       | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Probable<br><b>Winter roosting:</b><br>Improbable  |
| <b>Brandt's bat</b><br><i>Myotis brandtii</i>         | <b>Foraging:</b><br>A1 – Woodland and scrub / Woodland;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.<br><b>Summer roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter roosting:</b><br>None Present.                   | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No  | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Potential<br><b>Winter roosting:</b><br>Improbable |

| SPECIES                                             | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                     | HISTORIC EVIDENCE                                                                         | LIKELIHOOD OF PRESENCE                                                                                          |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Daubenton's bat</b><br><i>Myotis daubentonii</i> | <b>Foraging:</b><br>None Present.<br><b>Summer roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter roosting:</b><br>None Present.                                                                                              | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No  | <b>Foraging:</b><br>Improbable<br><b>Summer roosting:</b><br>Potential<br><b>Winter roosting:</b><br>Improbable |
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>    | <b>Foraging:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>None Present.                                         | <b>Foraging:</b><br>Yes<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Probable<br><b>Summer roosting:</b><br>Improbable<br><b>Winter roosting:</b><br>Improbable  |
| <b>Natterer's bat</b><br><i>Myotis nattereri</i>    | <b>Foraging:</b><br>A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Summer roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter roosting:</b><br>None Present. | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Probable<br><b>Winter roosting:</b><br>Improbable   |
| <b>Leisler's bat</b><br><i>Nyctalus leisleri</i>    | <b>Foraging:</b><br>A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Summer &amp; winter roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.            | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No  | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Potential<br><b>Winter roosting:</b><br>Potential   |
| <b>Noctule</b><br><i>Nyctalus noctula</i>           | <b>Foraging:</b><br>A1 – Woodland and scrub / Woodland;<br>A1.1 – Woodland and scrub / Woodland / Broadleaved.<br><b>Summer &amp; winter roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.                                                | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Probable<br><b>Winter roosting:</b><br>Potential    |

| SPECIES                                                       | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                                                                                                                                                                      | HISTORIC EVIDENCE                                                                         | LIKELIHOOD OF PRESENCE                                                                                          |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i> | <b>Foraging:</b><br>None Present.<br><b>Summer roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter roosting:</b><br>Unknown (No data).                                                                                                                                                                          | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Improbable<br><b>Summer roosting:</b><br>Probable<br><b>Winter roosting:</b><br>Potential   |
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i> | <b>Foraging:</b><br>A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.5 – Miscellaneous / Boundaries / Wall (rough stone only).                  | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Marginal<br><b>Winter roosting:</b><br>Potential    |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>    | <b>Foraging:</b><br>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.5 – Miscellaneous / Boundaries / Wall (rough stone only). | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Marginal<br><b>Winter roosting:</b><br>Potential    |
| <b>Brown long-eared bat</b><br><i>Plecotus auritus</i>        | <b>Foraging:</b><br>A1.1 – Woodland and scrub / Woodland / Broadleaved.<br><b>Summer &amp; winter roosting:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.                                                                                                                                                                        | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Probable<br><b>Winter roosting:</b><br>Potential    |
| <b>Grey long-eared bat</b><br><i>Plecotus austriacus</i>      | <b>Foraging:</b><br>A1.1 – Woodland and scrub / Woodland / Broadleaved.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>None Present.                                                                                                                                                                                                                      | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No  | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Improbable<br><b>Winter roosting:</b><br>Improbable |

| SPECIES                                                          | HABITAT PRESENT IN PHASE 1 SITE                                                                                                                                                                                                       | HISTORIC EVIDENCE                                                                         | LIKELIHOOD OF PRESENCE                                                                                          |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | <b>Foraging:</b><br>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>None Present. | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>Yes<br><b>Winter roosting:</b><br>No | <b>Foraging:</b><br>Probable<br><b>Summer roosting:</b><br>Marginal<br><b>Winter roosting:</b><br>Improbable    |
| <b>Lesser horseshoe bat</b><br><i>Rhinolophus hipposideros</i>   | <b>Foraging:</b><br>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.<br><b>Summer roosting:</b><br>None Present.<br><b>Winter roosting:</b><br>None Present.                                                      | <b>Foraging:</b><br>No<br><b>Summer roosting:</b><br>No<br><b>Winter roosting:</b><br>No  | <b>Foraging:</b><br>Potential<br><b>Summer roosting:</b><br>Improbable<br><b>Winter roosting:</b><br>Improbable |

Legislation: Bats

7.7.6 All bat species receive full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), under which it is an offence to:-

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

Summary: Bats

7.7.7 Of the total 17 species of bats native to the British Isles, 16 occur in Dorset, and of this number:-

- Bechstein’s bat, Natterer’s bat and noctule probably roost and potentially forage within the Swanworth Quarry Extension Phase 1 survey site;
- Nathusius’ pipistrelle probably roost but not forage within the Swanworth Quarry Extension Phase 1 survey site;
- Barbastelle, Brandt’s bat, Leisler’s bat, common pipistrelle, soprano pipistrelle and brown long-eared bat might potentially forage and roost within the Swanworth Quarry Extension Phase 1 survey site;
- Serotine, whiskered bat, grey long-eared bat, greater horseshoe bat and lesser horseshoe bat might potentially forage but not roost within the Swanworth Quarry Extension Phase 1 survey site; and
- Daubenton’s bat might potentially roost but not forage within the Swanworth Quarry Extension Phase 1 survey site.

Of these 16 species, seven comprising barbastelle, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat are listed as UK BAP Priority Species.

7.7.8 Table 19 sets out the potential number of legally protected and/or UK BAP Priority Species of bat associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.

**Table 19. The potential number of legally protected and/or UK BAP Priority Species of bat associated with each of the 11 Phase 1 habitat types within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP BAT SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP BAT FAUNA |
|---------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|
| A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural | Foraging: 14<br>Summer roosting: 9<br>Winter roosting: 6                   | Foraging: 88%<br>Summer roosting: 56%<br>Winter roosting: 38%            |
| A2.1 – Woodland and scrub / Scrub / Dense/continuous                | Foraging: 1<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 6%<br>Summer roosting: 0%<br>Winter roosting: 0%               |
| A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved  | Foraging: 6<br>Summer roosting: 8<br>Winter roosting: 5                    | Foraging: 38%<br>Summer roosting: 50%<br>Winter roosting: 31%            |
| B2.2 – Grassland and marsh / Neutral grassland / Semi-improved      | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 0%               |
| C1.1 – Tall herb and fern / Bracken / Continuous                    | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 0%               |
| J1.1 – Miscellaneous / Cultivated/disturbed land / Arable           | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 0%               |
| J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor   | Foraging: 4<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 25%<br>Summer roosting: 0%<br>Winter roosting: 0%              |
| J2.4 – Miscellaneous / Boundaries / Fence                           | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 0%               |
| J2.5 – Miscellaneous / Boundaries / Wall                            | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 2                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 13%              |
| J2.6 – Miscellaneous / Boundaries / Dry Ditch                       | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 0%               |
| J4 – Miscellaneous / Bare ground                                    | Foraging: 0<br>Summer roosting: 0<br>Winter roosting: 0                    | Foraging: 0%<br>Summer roosting: 0%<br>Winter roosting: 0%               |

Note: The cumulative total within Column 2 will typically exceed the total bat fauna as many species occur in more than one habitat, and are therefore considered more than once.

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## 8. CONCLUSIONS

- 8.1.1 The conclusions of the Swanworth Quarry Extension Phase 1 survey are as follows:-
1. The site has eight Statutory Wildlife Sites within a 2 km radius comprising Isle of Portland to Studland Cliffs SAC, St Albans Head to Durlston Head SAC, Dorset Heaths SAC, Dorset Heathlands Ramsar, Corfe Common SSSI, South Dorset Coast SSSI, Blashenwell Farm Pit SSSI and Dorset AONB;
  2. The site has 11 non-Statutory Wildlife Sites within a 1 km radius comprising Westhill Wood SNCI, Afflington Wood SNCI, The Plantation SNCI, Swanworth Quarry LGS, Swanworth Quarry HRS, Coombe Bottom HRS, West of the Lookout HRS, West of Downshay Wood HRS, South of the Lookout HRS, West of Afflington Wood HRS and Kingston Toll Conservation Verge;
  3. The site holds 11 Phase 1 (JNCC 2003) habitat types which encompass two Priority Habitats within the UK Biodiversity Action Plan comprising A1.1.1 – Woodland / Broadleaved / Semi-natural, which qualifies as ‘Lowland Mixed Deciduous Woodland’ within the UK BAP criteria and J2.1.2 – Miscellaneous / Boundaries / Intact Hedge / Species-poor, which qualifies as ‘Hedgerows’ within the UK BAP criteria;
  4. The site holds a moderately diverse flora but no legally protected and/or UK BAP Priority Species of plants were recorded;
  5. The site holds suitable habitat for 68 (38% overall county fauna) UK BAP Priority Species of invertebrates;
  6. The site holds no suitable habitat for any legally protected and/or UK BAP Priority Species of fish;
  7. The site holds suitable terrestrial habitat for two (67% overall county fauna) legally protected and/or UK BAP Priority Species of amphibian comprising great crested newt and common toad. Great crested newts are legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*. Both species are listed as Priority Species within the UK Biodiversity Action Plan;
  8. The site holds suitable habitat for four (67% overall county fauna) legally protected and/or UK BAP Priority Species of reptile comprising slow-worm, common lizard, grass snake and adder. All four species are legally protected under the *Wildlife & Countryside Act 1981 (& as amended)* and are listed as Priority Species within the UK Biodiversity Action Plan;
  9. The site holds suitable habitat for 41 (41% overall county fauna) Schedule 1 and/or UK BAP Priority Species of birds. The nests of all wild birds are protected under the *Wildlife & Countryside Act 1981 (& as amended)*;
  10. The site holds suitable habitat for six (75% overall county fauna) legally protected and/or UK Biodiversity Action Plan Priority Species of mammals (excluding bats) comprising common dormouse, harvest mouse, brown hare, hedgehog, badger and polecat. Common dormice are legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*, badgers are legally protected under the *Protection of Badgers Act 1992* and five of these species (i.e. excluding badger) are listed as Priority Species within the UK Biodiversity Action Plan;
  11. The site holds suitable habitat for all of Dorset’s overall 16 bat species (100% overall county fauna) comprising barbastelle, serotine, Bechstein’s bat, Brandt’s bat, Daubenton’s bat, whiskered bat, Natterer’s bat, Leisler’s bat, noctule,

Nathusius' pipistrelle, common pipistrelle, soprano pipistrelle, brown long-eared bat, grey long-eared bat, greater horseshoe bat and lesser horseshoe bat. All bat species and their roosts are legally protected under *The Conservation of Habitats and Species Regulations 2010* and the *Wildlife & Countryside Act 1981 (& as amended)*. Barbastelle, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat are listed as Priority Species within the UK Biodiversity Action Plan.

8.1.2 In rudimentary terms, the total number of legally protected and/or UK Biodiversity Action Plan Priority Species that may potentially occur within the Swanworth Quarry Extension Phase 1 survey site is 139 of a County total of 318. Table 20 provides a summary of the number of legally protected and/or UK BAP Priority Species that may occur in each habitat.

**Table 20. Summary of the number of legally protected and/or UK BAP Priority Species that may occur in each Phase 1 habitat type and their surface areas within the Swanworth Quarry Extension Phase 1 survey site.**

| PHASE 1 HABITAT TYPE                                                       | SURFACE AREA (ha) | UK BAP HABITAT YES/NO | POTENTIAL NUMBER OF ASSOCIATED LEGALLY PROTECTED AND/OR UK BAP SPECIES | PERCENTAGE OF POTENTIAL COUNTY LEGALLY PROTECTED AND/OR UK BAP SPECIES FAUNA |
|----------------------------------------------------------------------------|-------------------|-----------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural</b> | 0.43              | Yes                   | 103                                                                    | 32%                                                                          |
| <b>A2.1 – Woodland and scrub / Scrub / Dense/continuous</b>                | 1.97              | No                    | 63                                                                     | 20%                                                                          |
| <b>A3.1 – Woodland and scrub / Parkland/scattered trees / Broadleaved</b>  | 0.01              | No                    | 39                                                                     | 12%                                                                          |
| <b>B2.2 – Grassland and marsh / Neutral grassland / Semi-improved</b>      | 1.27              | No                    | 68                                                                     | 21%                                                                          |
| <b>C1.1 – Tall herb and fern / Bracken / Continuous</b>                    | 0.25              | No                    | 2                                                                      | 1%                                                                           |
| <b>J1.1 – Miscellaneous / Cultivated/disturbed land / Arable</b>           | 26.23             | No                    | 78                                                                     | 25%                                                                          |
| <b>J2.1.2 – Miscellaneous / Boundaries / Intact hedge / Species-poor</b>   | 0.08              | Yes                   | 56                                                                     | 18%                                                                          |
| <b>J2.4 – Miscellaneous / Boundaries / Fence</b>                           | 2.46 km           | No                    | 0                                                                      | 0%                                                                           |
| <b>J2.5 – Miscellaneous / Boundaries / Wall</b>                            | 2.15 km           | No                    | 2                                                                      | 1%                                                                           |
| <b>J2.6 – Miscellaneous / Boundaries / Dry Ditch</b>                       | 0.24 km           | No                    | 0                                                                      | 0%                                                                           |
| <b>J4 – Miscellaneous / Bare ground</b>                                    | 0.46              | No                    | 3                                                                      | 1%                                                                           |

Note: The cumulative total within Column 4 may exceed the site total; this is because some species exploit more than one habitat type.

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## 9. RECOMMENDATIONS

9.1.1 The IEEM (2006) suggest that a clear rationale should be given for deciding which features and resources should be subject to more detailed consideration within EcIA. Taking a simplistic approach, and defining a trigger for survey as: the potential for a legally protected species to occur within a site; and/or a minimum 50% of the total county UK BAP Priority fauna to occur within a site, in order to produce a robust assessment of the overall Phase 1 survey site the following surveys should be considered as a minimum:-

- Great crested newt terrestrial survey (optimum survey period July through September);
- Reptile survey (optimum survey period April through June and September);
- Breeding bird survey (optimum survey period March through July);
- Dormouse survey (optimum survey period April through September);
- Badger survey (optimum survey period December through March); and
- Bat survey (optimum survey period foraging presence/absence – May through October, roosting presence/absence – potentially full year).

## 10. REFERENCES

### 10.1 Section 2 - BACKGROUND

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### 10.2 Section 4 – ASSESSMENT METHODS

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### **10.3 Section 6 – PHASE 1 SURVEY**

#### **Subsection 6.1**

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### **10.4 Section 7 – FAUNA**

#### **Subsection 7.3**

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## APPENDIX A. A REVIEW OF THE COMMUTING RANGES OF BRITISH BATS USED TO DEFINE AN APPROPRIATE RADIUS FOR SEARCHES OF HISTORIC DATA-SETS.

In order to define an appropriate buffer for data-requests a literature review of all references to the commuting ranges of individual bat species was performed (see Table A1). A single average and maximum commuting range was calculated, these are set out in Table A2.

**Table A1. Results of a review of commuting distances of bats native to the UK.**

| BAT SPECIES                                                      | AVERAGE COMMUTING DISTANCE                                                                                                                                                                                                                       | MAXIMUM COMMUTING DISTANCE                                                                                                 |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Barbastelle</b><br><i>Barbastella barbastellus</i>            | 4.5 km (Dietz <i>et al.</i> 2011)                                                                                                                                                                                                                | 18 km (Schofield & Mitchell-Jones 2003)<br>18 km (Harris & Yalden 2008)                                                    |
| <b>Serotine</b><br><i>Eptesicus serotinus</i>                    | 6.5 km (Catto <i>et al.</i> 1996)<br>8.2 km (Robinson & Stebbings 1997)<br>2 km (Schofield & Mitchell-Jones 2003)<br>6.5 km (Harris & Yalden 2008)<br>4.5 km (Dietz <i>et al.</i> 2011)                                                          | 6 km (Schofield & Mitchell-Jones 2003)<br>12 km (Dietz <i>et al.</i> 2011)                                                 |
| <b>Bechstein's bat</b><br><i>Myotis bechsteinii</i>              | 0.7 km (Fitzsimons <i>et al.</i> 2002)<br>0.3 - 1 km (Altringham 2003)<br>1 km (Harris & Yalden 2008)<br>1 km (Dietz <i>et al.</i> 2011)                                                                                                         | 1.4 km (Fitzsimons <i>et al.</i> 2002)<br>2.5 km (Dietz <i>et al.</i> 2011)                                                |
| <b>Brandt's bat</b><br><i>Myotis brandtii</i>                    | 2.3 km (Harris & Yalden 2008)                                                                                                                                                                                                                    | 10 km (Dense & Rahmel 2002)<br>10 km (Dietz <i>et al.</i> 2011)                                                            |
| <b>Daubenton's bat</b><br><i>Myotis daubentonii</i>              | 2 km (Swift & Racey 1983)<br>10 km (Richardson 1985)<br>2.3 km in females, 3.7 km in males (Encarnacao <i>et al.</i> 2005)<br>3 km (Altringham 2003)<br>6 km (Schofield & Mitchell-Jones 2003)<br>3.7 km, max 6-10 km (Dietz <i>et al.</i> 2011) | 10 km (Harris & Yalden 2008)                                                                                               |
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>                 | NO DATA                                                                                                                                                                                                                                          | 2.8 km (Cordes 2004)<br>2.2 km (Harris & Yalden 2008)<br>2.8 km (Dietz <i>et al.</i> 2011)                                 |
| <b>Natterer's bat</b><br><i>Myotis nattereri</i>                 | NO DATA                                                                                                                                                                                                                                          | 4 km (Smith & Racey 2005)<br>4 km (Dietz <i>et al.</i> 2011)                                                               |
| <b>Leisler's bat</b><br><i>Nyctalus leisleri</i>                 | 4.2 km (Waters <i>et al.</i> 1999)<br>4.2 km (Harris & Yalden 2008)<br>4.2 km (Dietz <i>et al.</i> 2011)                                                                                                                                         | 5.75 km (Waters <i>et al.</i> 1999)<br>13.4 km (Harris & Yalden 2008)<br>17 km (Dietz <i>et al.</i> 2011)                  |
| <b>Noctule</b><br><i>Nyctalus noctula</i>                        | 6 km (Schober & Grimmberger 1997)<br>6 km (Mackie & Racey 2007)<br>4.5 km (Harris & Yalden 2008)<br>2.5 km (Dietz <i>et al.</i> 2011)                                                                                                            | 10 km (Richardson 2000)<br>26 km (Dietz <i>et al.</i> 2011)                                                                |
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i>    | 6.5 km (Dietz <i>et al.</i> 2011)                                                                                                                                                                                                                | ?                                                                                                                          |
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i>    | 1 - 2 km (Schober & Grimmberger 1997, Davidson-Watts <i>et al.</i> 2006)<br>3-4 km (Schofield & Mitchell-Jones 2003)<br>1.8 km (Harris & Yalden 2008)<br>1.5 km (Dietz <i>et al.</i> 2011)                                                       | 5 km (Altringham 2003)<br>5.1 km (Harris & Yalden 2008)                                                                    |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>       | 1.7 km (Harris & Yalden 2008).<br>1.5 km (Dietz <i>et al.</i> 2011).                                                                                                                                                                             | ?                                                                                                                          |
| <b>Brown long-eared bat</b><br><i>Plecotus auritus</i>           | 0.5 km (Entwistle <i>et al.</i> 1996, Richardson 2000)<br>500 m (Dietz <i>et al.</i> 2011)                                                                                                                                                       | 3 km (Entwistle <i>et al.</i> 1996, Richardson 2000)<br>3.3 km (Dietz <i>et al.</i> 2011)                                  |
| <b>Grey long-eared bat</b><br><i>Plecotus austriacus</i>         | 1.1 - 3.3 km (Swift and Racey 1983, Fuhrmann & Seitz 1992, Fluckiger & Beck 1995)                                                                                                                                                                | Maximum 5.5 km (Dietz <i>et al.</i> 2011)                                                                                  |
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | 2.1 km (Duverge & Jones 1994, Jones <i>et al.</i> 1995)<br>6.2 km (Richardson 2000)<br>3-4 km (Harris & Yalden 2008)<br>2.1 km (Dietz <i>et al.</i> 2011)                                                                                        | 2.1 km (Duverge & Jones 1994, Jones <i>et al.</i> 1995)<br>14 km (Harris & Yalden 2008)<br>5 km (Dietz <i>et al.</i> 2011) |
| <b>Lesser horseshoe bat</b><br><i>Rhinolophus hipposideros</i>   | 0.6 km (Bontadina <i>et al.</i> 2002)<br>2 km (Vaughn <i>et al.</i> 1997, Schofield & Mitchell-Jones 2003)<br>2.5 km (Harris & Yalden 2008)<br>2.5 km (Dietz <i>et al.</i> 2011)                                                                 | 4.2 km (Bontadina <i>et al.</i> 2002)<br>4 km (Harris & Yalden 2008)<br>5 km (Dietz <i>et al.</i> 2011)                    |

**Table A2. Mean average commuting range of bats native to the UK.**

| BAT SPECIES                                               | AVERAGE RANGE | MAXIMUM RANGE |
|-----------------------------------------------------------|---------------|---------------|
| Barbastelle<br><i>Barbastella barbastellus</i>            | 4.5 km        | 18.km         |
| Serotine<br><i>Eptesicus serotinus</i>                    | 5.5 km        | 9 km          |
| Bechstein's bat<br><i>Myotis bechsteinii</i>              | 0.8 km        | 1.95 km       |
| Brandt's bat<br><i>Myotis brandtii</i>                    | 2.3 km        | 10 km         |
| Daubenton's bat<br><i>Myotis daubentonii</i>              | 4.4 km        | 10km          |
| Whiskered bat<br><i>Myotis mystacinus</i>                 | ?             | 2.7 km        |
| Natterer's bat<br><i>Myotis nattereri</i>                 | ?             | 4km           |
| Leisler's bat<br><i>Nyctalus leisleri</i>                 | 4.2 km        | 12.05 km      |
| Noctule<br><i>Nyctalus noctula</i>                        | 4.75 km       | 18 km         |
| Nathusius' pipistrelle<br><i>Pipistrellus nathusii</i>    | 6.5 km        | ?             |
| Common pipistrelle<br><i>Pipistrellus pipistrellus</i>    | 2.1 km        | 5.05 km       |
| Soprano pipistrelle<br><i>Pipistrellus pygmaeus</i>       | 1.6 km        | ?             |
| Brown long-eared bat<br><i>Plecotus auritus</i>           | 0.5 km        | 3.15 km       |
| Grey long-eared bat<br><i>Plecotus austriacus</i>         | 2.2 km        | 5.5 km        |
| Greater horseshoe bat<br><i>Rhinolophus ferrumequinum</i> | 3.5 km        | 7km           |
| Lesser horseshoe bat<br><i>Rhinolophus hipposideros</i>   | 1.9 km        | 4.4 km        |

Looking at the results 100% of the species has a range of less than 7 km in the UK. Looking deeper, 86% of the species for which an average commuting distance could be calculated have a range of less than 5 km. When the maximum ranges of whiskered and Natterer's bats, which are also less than 5 km, are added the result is increased to 88%.

It is therefore concluded that a 5 km radius is appropriate for data-searches of historic bat records.

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**APPENDIX B. PLANT SPECIES RECORDED AT THE SWANWORTH QUARRY EXTENSION ON 13<sup>TH</sup> AUGUST 2014 BY LEANNE BUTT BSc MSc ACIEEM, LOUIS PEARSON BSc MSc GradCIEEM AND CHRISTY TOLLIDAY BSc MSc.**

|                                 |                        |
|---------------------------------|------------------------|
| <i>Acer campestre</i>           | Field maple            |
| <i>Acer pseudoplatanus</i>      | Sycamore               |
| <i>Agrostis stolonifera</i>     | Creeping bent          |
| <i>Anagallis arvensis</i>       | Scarlet pimpernel      |
| <i>Arctium lappa</i>            | Greater burdock        |
| <i>Arrhenatherum elatius</i>    | False oat-grass        |
| <i>Arum maculatum</i>           | Lords-and-ladies       |
| <i>Asplenium scolopendrium</i>  | Hart's-tongue          |
| <i>Atriplex patula</i>          | Common orache          |
| <i>Brachypodium sylvaticum</i>  | False brome            |
| <i>Brassica napus</i>           | Rape                   |
| <i>Bromus hordaceus</i>         | Soft brome             |
| <i>Bromus sterilis</i>          | Barren brome           |
| <i>Buddleja davidii</i>         | Butterfly bush         |
| <i>Calystegia sepium</i>        | Hedge bindweed         |
| <i>Capsella bursa-pastoris</i>  | Shepherd's-purse       |
| <i>Centaurea nigra</i>          | Common knapweed        |
| <i>Chaerophyllum temulentum</i> | Rough chervil          |
| <i>Chamerion angustifolium</i>  | Rosebay                |
| <i>Chenopodium album</i>        | Fat hen                |
| <i>Cirsium arvense</i>          | Creeping thistle       |
| <i>Cirsium eriophorum</i>       | Woolly thistle         |
| <i>Cirsium vulgare</i>          | Spear thistle          |
| <i>Clematis vitalba</i>         | Traveller's-joy        |
| <i>Convolvulus arvensis</i>     | Field bindweed         |
| <i>Crataegus monogyna</i>       | Hawthorn               |
| <i>Cynosurus cristatus</i>      | Crested dog's-tail     |
| <i>Dactylis glomerata</i>       | Cock's-foot            |
| <i>Dipsacus fullonum</i>        | Teasel                 |
| <i>Elytregia repens</i>         | Common couch           |
| <i>Epilobium hirsutum</i>       | Great willowherb       |
| <i>Equisetum arvense</i>        | Field horsetail        |
| <i>Euphorbia helioscopia</i>    | Sun spurge             |
| <i>Festuca ovina</i>            | Sheep's fescue         |
| <i>Festuca pratensis</i>        | Meadow fescue          |
| <i>Fraxinus excelsior</i>       | Ash                    |
| <i>Galium aparine</i>           | Cleavers               |
| <i>Geranium dissectum</i>       | Cut-leaved cranesbill  |
| <i>Geranium molle</i>           | Dove's-foot cranesbill |
| <i>Geranium robertianum</i>     | Herb-Robert            |
| <i>Geum urbanum</i>             | Wood avens             |
| <i>Glechoma hederacea</i>       | Ground-ivy             |
| <i>Hedera helix</i>             | Ivy                    |
| <i>Heracleum sphondylium</i>    | Hogweed                |
| <i>Holcus lanatus</i>           | Yorkshire-fog          |
| <i>Hordeum sp.</i>              | Barley                 |
| <i>Hypochaeris radicata</i>     | Common cat's-ear       |
| <i>Iris foetidissima</i>        | Stinking iris          |
| <i>Lapsana communis</i>         | Nipplewort             |
| <i>Lepidium coronopus</i>       | Swine cress            |
| <i>Lolium perenne</i>           | Perennial rye-grass    |
| <i>Lonicera periclymenum</i>    | Honeysuckle            |
| <i>Lotus corniculatus</i>       | Bird's-foot trefoil    |
| <i>Matricaria discoidea</i>     | Pineappleweed          |

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|                                  |                       |
|----------------------------------|-----------------------|
| <i>Medicago lupulina</i>         | Black medick          |
| <i>Mercurialis perennis</i>      | Dog's mercury         |
| <i>Myosotis arvensis</i>         | Field forget-me-not   |
| <i>Odontites vernus</i>          | Red bartsia           |
| <i>Persicaria maculosa</i>       | Redshank              |
| <i>Phleum pratense</i>           | Timothy               |
| <i>Picris echioides</i>          | Bristly oxtongue      |
| <i>Plantago lanceolata</i>       | Ribwort plantain      |
| <i>Plantago major</i>            | Greater plantain      |
| <i>Poa annua</i>                 | Annual meadow-grass   |
| <i>Poa trivialis</i>             | Rough meadow-grass    |
| <i>Polygonum aviculare</i>       | Knotgrass             |
| <i>Potentilla reptans</i>        | Creeping cinquefoil   |
| <i>Prunus spinosa</i>            | Blackthorn            |
| <i>Pteridium aquilinum</i>       | Bracken               |
| <i>Pulicaria dysenterica</i>     | Fleabane              |
| <i>Ranunculus repens</i>         | Creeping buttercup    |
| <i>Rubus fruticosus agg.</i>     | Bramble               |
| <i>Rumex crispus</i>             | Curled dock           |
| <i>Rumex obtusifolius</i>        | Broad-leaved dock     |
| <i>Salix caprea</i>              | Goat willow           |
| <i>Sambucus ebulus</i>           | Dwarf elder           |
| <i>Sambucus nigra</i>            | Elder                 |
| <i>Senecio jacobea</i>           | Ragwort               |
| <i>Senecio vulgaris</i>          | Groundsel             |
| <i>Sherardia arvensis</i>        | Field madder          |
| <i>Silene dioica</i>             | Red campion           |
| <i>Sisymbrium officinale</i>     | Hedge-mustard         |
| <i>Solanum dulcamara</i>         | Bittersweet           |
| <i>Solanum nigrum</i>            | Black nightshade      |
| <i>Sonchus asper</i>             | Prickly sow-thistle   |
| <i>Sonchus oleraceus</i>         | Smooth sow-thistle    |
| <i>Sorbus aria</i>               | Whitebeam             |
| <i>Stachys sylvatica</i>         | Hedge woundwort       |
| <i>Torilis japonica</i>          | Upright hedge-parsley |
| <i>Tripleurospermum inodorum</i> | Scentsless mayweed    |
| <i>Triticum aestivum</i>         | Bread wheat           |
| <i>Ulex europaeus</i>            | Common gorse          |
| <i>Urtica dioica</i>             | Stinging nettle       |
| <i>Veronica chamaedrys</i>       | Germander speedwell   |
| <i>Veronica filiformis</i>       | Slender speedwell     |
| <i>Veronica persica</i>          | Common speedwell      |
| <i>Vicia faba</i>                | Broad bean            |

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**APPENDIX C. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF LEGALLY PROTECTED AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF INVERTEBRATE WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.**

**Note:** Many invertebrates are dependent upon individual plant species within broad habitat types, where this is the case the habitat is cited with the food plant (i.e. A3 – Parkland/scattered trees **with** *Fagus sylvatica*). In addition, many invertebrates are dependent upon a combination of habitats in close association, where this is the case the habitats are cited thus; A1.1.1 – Broadleaved semi-natural woodland **in association with** G2 – Running water. All other dependencies are cited in brackets (i.e. E2 – Flush and spring (on calcareous ground)).

| SPECIES                                                              | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                                      | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|----------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Ivell's sea anemone<br><i>Edwardsia ivelli</i><br>(cnidarian)        | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Saline lagoon.<br><b>Restricted Distribution:</b><br>Widewater Lagoon, W Sussex. May be extinct.                                                                      | G1.6 Brackish standing water                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Starlet sea anemone<br><i>Nematostella vectensis</i><br>(cnidarian)  | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Saltmarshes, coastal lagoons, brackish ditches & ponds.<br><b>Restricted Distribution:</b><br>E Anglia, Hampshire, Dorset, Sussex & Isle of Wight.                    | G1.6 Brackish standing water<br>H2 Saltmarsh                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No |
| Jennings's ribbon worm<br><i>Prostoma jenningsi</i><br>(ribbon worm) | UK BAP                                | Pond (formerly a clay pit) & pond margins in reedbeds.<br><b>Restricted Distribution:</b><br>Croston Pond, Lancashire.                                                | F Swamp, marginal & inundation<br><b>with</b> <i>Phragmites australis</i><br>G1 Standing water (former clay-pit) | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Crystal moss-animal<br><i>Ilophopus crystallinus</i><br>(bryozoan)   | UK BAP                                | Nutrient-rich ponds connected to slow-flowing rivers on debris or stands of emergent vegetation.<br><b>Restricted Distribution:</b><br>E & central England & S Wales. | F Swamp, marginal & inundation<br>G1.1 Eutrophic standing water (pond)<br>G2 Running water (river)               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Trembling sea-mat<br><i>Victorella pavida</i><br>(bryozoan)          | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Brackish water lagoons & estuaries.<br><b>Restricted Distribution:</b><br>Falmouth, Cornwall.                                                                         | G1.6 Brackish standing water<br>G2.6 Brackish running water                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| De Folin's lagoon snail<br><i>Caecum armoricum</i><br>(mollusc)      | <b>W&amp;CA<sup>1</sup></b>           | Lagoonal shingle at water level.<br><b>Restricted distribution:</b><br>The Fleet, Dorset.                                                                             | G1.6 Brackish standing water<br>H1.2 Intertidal shingle/cobbles                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No |
| Lagoon spire-snail<br><i>Heleobia stagnorum</i><br>(mollusc)         | UK BAP                                | Saline lakes & non-tidal lagoons.<br><b>Restricted distribution:</b><br>Sussex.                                                                                       | G1.6 Brackish standing water                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                           | CONSERVATION STATUS                    | HABITAT NICHE                                                                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-----------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Swollen spire-snail</b><br><i>Mercuria similis</i><br>(mollusc)                | UK BAP                                 | Tidal sections of rivers, reedbeds, coastal & floodplain grazing marsh.<br><b>Restricted distribution:</b><br>E Anglia & SE England & Ireland.                                        | B5 Marsh/marshy grassland<br>F1 Swamp<br>G2 Running water                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Glutinous snail</b><br><i>Myxas glutinosa</i><br>(mollusc)                     | <b>W&amp;CA<sup>1</sup></b><br>UK BAP  | Freshwater lakes & ponds with firm substrate.<br><b>Restricted distribution:</b><br>Currently only Llyn Tegid, N Wales. Formerly Oxfordshire, Hampshire & Lake District.              | G1.1 Eutrophic standing water<br>G1.2 Mesotrophic standing water                                            | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Mud snail</b><br><i>Omphiscola glabra</i><br>(mollusc)                         | UK BAP                                 | Pools, ponds, ditches & marshy areas in lowland heathland & commons.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                           | B5 Marsh/marshy grassland<br>D Heathland<br><b>in association with</b><br>G1 Standing water                 | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Little whirlpool ram's-horn snail</b><br><i>Anisus vorticulus</i><br>(mollusc) | <b>CH&amp;SR<sup>4</sup></b><br>UK BAP | Grazing marshes in well-vegetated drains & ditches, fed by unpolluted calcareous pools, ox-box lakes, streams & slow rivers.<br><b>Restricted distribution:</b><br>E Anglia & Sussex. | B5 Marsh/marshy grassland<br>G1 Standing water<br>G2 Running water                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Thames ram's-horn snail</b><br><i>Gyraulus acronicus</i><br>(mollusc)          | UK BAP                                 | Clean, slow-flowing calcareous rivers & densely vegetated margins.<br><b>Restricted distribution:</b><br>River Thames upper catchment.                                                | F2 Marginal & inundation<br>G2.1 Eutrophic running water                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>The shining ram's-horn</b><br><i>Segmentina nitida</i><br>(mollusc)            | UK BAP                                 | Ditches, ponds & slow-flowing rivers in grazing marshes.<br><b>Restricted distribution:</b><br>Scattered in England.                                                                  | B5 Marsh/marshy grassland<br><b>in association with</b><br>G1 Standing water or<br>G2 Running water (river) | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Sandbowl snail</b><br><i>Quickella arenaria</i><br>(mollusc)                   | <b>W&amp;CA<sup>1</sup></b><br>UK BAP  | Upland fens, flushes, swamps & coastal sand dunes.<br><b>Restricted distribution:</b><br>Pennines, N Devon & Ireland.                                                                 | E2 Flush & spring<br>E3 Fen<br>F1 Swamp<br>H6 Sand dune                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Roman snail</b><br><i>Helix pomatia</i><br>(mollusc)                           | <b>W&amp;CA<sup>2</sup></b>            | Well-drained lime-rich soils in undisturbed grassy/scrubby habitats.<br><b>Restricted distribution:</b><br>Chilterns, North Downs, Cotswolds & Mendip fringes.                        | A2 Scrub<br>B3 Calcareous grassland                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                           | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                       | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-----------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Cylindrica whorl-snail</b><br><i>Truncatellina cylindrica</i><br>(mollusc)     | UK BAP                                | Dry, short neutral & calcareous grassland in stony ground, screes, rocks, stone walls, sand dunes & quarry.<br><b>Restricted distribution:</b><br>Bedfordshire, Yorkshire & Norfolk & Scotland. | B2 Neutral grassland<br>B3 Calcareous grassland<br>H6 Sand dune<br>I1.2 Scree<br>I2.1 Quarry<br>J2.5 Wall (stone) | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Narrow-mouthed whorl-snail</b><br><i>Vertigo angustior</i><br>(mollusc)        | UK BAP                                | Coastal floodplain, grazing marsh, maritime cliff/slopes & sand dunes.<br><b>Restricted distribution:</b><br>E Anglia, Lancashire, S Wales & Scotland.                                          | B5 Marsh/marshy grassland <b>with</b> sedges<br>H2 Saltmarsh<br>H6 Sand dune<br>H8 Maritime cliff & slope         | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Round-mouthed whorl-snail</b><br><i>Vertigo genesis</i><br>(mollusc)           | UK BAP                                | Calcareous flushes (alkaline fens), swamp, wet grasslands, wet heath & acid bogs.<br><b>Restricted distribution:</b><br>Pennines & Scotland.                                                    | B5 Marsh/marshy grassland<br>D2 Wet heathland<br>E1 Bog<br>E2 Flushes<br>E3 Fen<br>F1 Swamp                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Geyer's whorl-snail</b><br><i>Vertigo geyeri</i><br>(mollusc)                  | UK BAP                                | Lowland fens, wet calcareous flushes & swamp.<br><b>Restricted distribution:</b><br>Norfolk, Pennines, N Wales & Scotland.                                                                      | E2.2 Basic flush<br>E3 Fen<br>F1 Swamp<br><b>with</b> dense cover of grasses, sedges & mosses                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Cross whorl-snail</b><br><i>Vertigo modesta</i><br>(mollusc)                   | UK BAP                                | Mountain heaths & willow scrub.<br><b>Restricted distribution:</b><br>NE Scotland.                                                                                                              | A2 Scrub<br>D4 Montane heath/dwarf herb                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Desmoulin's whorl-snail</b><br><i>Vertigo moulinsiana</i><br>(mollusc)         | UK BAP                                | Calcareous lowland wetlands & swamps, fens, marshes usually bordering rivers, canals, lakes & ponds.<br><b>Restricted distribution:</b><br>Scattered in S & E England & Wales.                  | B5 Marsh/marshy grassland<br>E3 Fen<br>F Swamp, marginal & inundation<br>G1 Standing water<br>G2 Running water    | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Large-mouthed valve-snail</b><br><i>Valvata macrostoma</i><br>(mollusc)        | UK BAP                                | Lowland fens, coastal & floodplain grazing marsh.<br><b>Restricted distribution:</b><br>Sussex, Hampshire, Somerset Levels & E Anglia.                                                          | B5 Marsh/marshy grassland<br>E3 Fen<br>H2 Saltmarsh                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Freshwater pearl-mussel</b><br><i>Margaritifera margaritifera</i><br>(mollusc) | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Fast-flowing clean rivers with fine gravel & coarse sand beds.<br><b>Restricted distribution:</b><br>SW England, Wales, Scotland (stronghold) & Ireland. Range contracted significantly in UK.  | G2 Running water (river)                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                        | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                                                                                   | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|--------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Compressed river-mussel</b><br><i>Pseudanodonta complanata</i><br>(mollusc) | UK BAP                                | Lower stretches of clean, slow-flowing lowland rivers, often associated with reedbeds.<br><b>Restricted distribution:</b><br>Scattered in England & Welsh borders. | F1 Swamp<br>G2 Running water (river)<br><b>with</b> <i>Phragmites australis</i>                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Fine-lined pea-mussel</b><br><i>Pisidium tenuilineatum</i><br>(mollusc)     | UK BAP                                | Calcareous rivers, streams & ponds.<br><b>Restricted distribution:</b><br>Scattered in England & Wales.                                                            | G1 Standing water<br>G2 Running water (calcareous river)                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Whitham orb-mussel</b><br><i>Sphaerium solidum</i><br>(mollusc)             | UK BAP                                | Large rivers, occasionally lakes.<br><b>Restricted distribution:</b><br>River Witham (Lincs) & Great Ouse (Cambs).                                                 | G1 Standing water (lake)<br>G2 Running water (river)                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Lagoon sandworm</b><br><i>Armandia cirrhosa</i><br>(worm)                   | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Ponds & lagoons with gravel, sand & mud substrata.<br><b>Restricted Distribution:</b><br>Hampshire & Dorset.                                                       | G1.6 Brackish standing water                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Tentacled lagoon-worm</b><br><i>Alkmaria romijni</i><br>(worm)              | <b>W&amp;CA<sup>1</sup></b>           | Sheltered estuaries & lagoons.<br><b>Restricted Distribution:</b><br>S, SW & E coasts England & S Wales.                                                           | G1.6 Brackish standing water<br>G2.6 Brackish running water                                                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Medicinal leech</b><br><i>Hirudo medicinalis</i><br>(worm)                  | <b>W&amp;CA<sup>1</sup></b>           | Shallow, freshwater lakes, ponds, streams, ditches & marshes.<br><b>Restricted Distribution:</b><br>Scattered in England, Wales & Scotland.                        | B5 Marsh/marshy grassland<br>G1 Standing water<br>G2 Running water                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Ladybird spider</b><br><i>Eresus sandaliatus</i><br>(spider)                | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Dry sandy heathland with bare or lichen covered patches & well-drained soil.<br><b>Restricted distribution:</b><br>Dorset only.                                    | D1 Dry heathland                                                                                                                                              | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Small mesh-weaver</b><br><i>Dictyna pusilla</i><br>(spider)                 | UK BAP                                | Pine forest & heathland in low, dry or dead vegetation.<br><b>Restricted distribution:</b><br>Scattered in England & Wales, widespread central Scotland.           | A1.2 Coniferous woodland<br>D1 Dry heathland<br><b>with</b> <i>Calluna vulgaris</i> ,<br><i>Erica</i> sp., <i>Juniperus communis</i> & young <i>Pinus</i> sp. | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Dorset mesh-weaver</b><br><i>Altella lucida</i><br>(spider)                 | UK BAP                                | Dry sandy heathland with bare stony areas & dry algal mats.<br><b>Restricted distribution:</b><br>Morden Bog, Dorset.                                              | D1 Dry heathland                                                                                                                                              | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                                     | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                  | EQUIVALENT PHASE 1 HABITATS                                                                              | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-----------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Heath grasper</b><br><i>Haplodrassus dalmatensis</i><br>(spider)         | UK BAP              | Dry heathland amongst heather & under stones, sand dunes & shingle on coast.<br><b>Restricted distribution:</b><br>S & E coast England & Wales.                                | D1 Dry heathland<br><b>with</b> <i>Calluna vulgaris</i> & <i>Erica</i> sp.<br>H3 Shingle<br>H6 Sand dune | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Rosser's sac-spider</b><br><i>Clubiona rosserae</i><br>(spider)          | UK BAP              | Fens amongst sedges & reeds.<br><b>Restricted distribution:</b><br>Cambridgeshire & Suffolk.                                                                                   | E3 Fen<br><b>with</b> sedges & reeds                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Golden lantern-spider</b><br><i>Agroeca cuprea</i><br>(spider)           | UK BAP              | Heathland, coastal grassland & sand dunes.<br><b>Restricted distribution:</b><br>S coast England - Kent, Sussex, Devon & Cornwall, Norfolk, Lancashire & Scotland.             | D Heathland<br>H6 Sand dune<br>H8.4 Coastal grassland                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Southern crablet</b><br><i>Ozyptila nigrita</i><br>(spider)              | UK BAP              | Short chalk & limestone grassland in stony areas, especially near the coast & sand dunes.<br><b>Restricted distribution:</b><br>S England.                                     | B3 Calcareous grassland<br>H6 Sand dune<br>H8.4 Coastal grassland                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Sand running spider</b><br><i>Philodromus fallax</i><br>(spider)         | UK BAP              | Coastal sand dunes, on sand or among marram.<br><b>Restricted distribution:</b><br>Scattered on coasts England & Wales.                                                        | H6 Sand dune<br><b>with</b> <i>Ammophila arenaria</i>                                                    | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Lichen running spider</b><br><i>Philodromus margaritatus</i><br>(spider) | UK BAP              | Lichen-covered trees (broadleaved & coniferous), sometimes in gardens & orchards.<br><b>Restricted distribution:</b><br>S England & central Scotland.                          | A1 Woodland (all types)<br>A3 Parkland/scattered trees (orchards/gardens)<br><b>with</b> lichens         | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Whelk-shell jumper</b><br><i>Pseudeuophrys obsoleta</i><br>(spider)      | UK BAP              | Tide litter in empty whelk shells & in open on shingle.<br><b>Restricted distribution:</b><br>S & E coasts England.                                                            | H1.2 Shingle                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Sedge jumper</b><br><i>Sitticus caricis</i><br>(spider)                  | UK BAP              | Lowland bogs, marsh & fen amongst low vegetation.<br><b>Restricted distribution:</b><br>Scattered in England & Wales.                                                          | B5 Marsh/marshy grassland<br>E1 Bog<br>E3 Fen                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Distinguished jumper</b><br><i>Sitticus distinguendus</i><br>(spider)    | UK BAP              | Former industrial sites with dry sparsely vegetated ground & grassland with seasonally wet areas on sandy/stony substrate.<br><b>Restricted distribution:</b><br>Essex & Kent. | B Grassland<br>I2 Artificial<br>J4 Bare ground<br>J5 Other habitat (industrial)                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                      | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                        | EQUIVALENT PHASE 1 HABITATS                                                                     | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Great fox-spider</b><br><i>Alopecosa fabrilis</i><br>(spider)             | UK BAP                                | Dry sandy heathland with open stony areas.<br><b>Restricted distribution:</b><br>Dorset & Surrey.                                                                    | D1 Dry heathland                                                                                | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Yellow-striped bear-spider</b><br><i>Arctosa fulvolineata</i><br>(spider) | UK BAP                                | Saltmarsh under mud, debris & stones.<br><b>Restricted distribution:</b><br>S & E coasts of England.                                                                 | H2 Saltmarsh                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Fen raft spider</b><br><i>Dolomedes plantarius</i><br>(spider)            | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Fens, around small pools in old peat cuttings.<br><b>Restricted distribution:</b><br>E Sussex, E Anglia & S Wales.                                                   | E3 Fen<br><b>with <i>Cladium mariscus</i> in association with</b><br>G1 Standing water (pools)  | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Silky gallow-spider</b><br><i>Dipoena inornata</i><br>(spider)            | UK BAP                                | Lowland heathland, scrub, coastal grassland & sand dunes.<br><b>Restricted distribution:</b><br>Scattered in S half England, Wales & SW Scotland.                    | A2 Scrub<br><b>in association with</b><br>D Heathland<br>H6 Sand dune<br>H8.4 Coastal grassland | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Duffey's bell-head spider</b><br><i>Baryphyma duffeyi</i><br>(spider)     | UK BAP                                | Saltmarsh & brackish marshes, under tidal litter, mud & vegetation.<br><b>Restricted distribution:</b><br>Suffolk, Essex & Kent.                                     | H2 Saltmarsh                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Serrated tongue-spider</b><br><i>Centromerus serratus</i><br>(spider)     | UK BAP                                | Woodland (all types) in moss & litter, chalk & acid grassland.<br><b>Restricted distribution:</b><br>S England – mainly Dorset, Hampshire, Surrey & Essex.           | A1 Woodland (all types)<br>B1 Acid grassland<br>B3 Calcareous grassland                         | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Welch's money-spider</b><br><i>Erigone welchi</i><br>(spider)             | UK BAP                                | Very wet acid bogs in <i>Sphagnum</i> moss, grass & sedge <i>Carex</i> tussocks.<br><b>Restricted distribution:</b><br>Extremely local in England, Wales & Scotland. | E1 Bog<br><b>with <i>Sphagnum</i> &amp; <i>Carex</i> sp.</b>                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Cotton's amazon spider</b><br><i>Glyphesis cottonae</i><br>(spider)       | UK BAP                                | Lowland <i>Sphagnum</i> bogs.<br><b>Restricted distribution:</b><br>S England, Cheshire, Shropshire & Cumberland.                                                    | E1 Bog<br><b>with <i>Sphagnum</i> sp.</b>                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Peus's long-back spider</b><br><i>Mecopisthes peusi</i><br>(spider)       | UK BAP                                | Dry heathland in litter & patches of bare ground, sand dunes & dune slacks.<br><b>Restricted distribution:</b><br>S England, Cheshire, Lancashire & Wales.           | D1 Dry heathland<br>H6 Sand dune                                                                | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                            | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                                | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Thin weblet</b><br><i>Meioneta mollis</i><br>(spider)                           | UK BAP              | Limestone grassland & sometimes woodland.<br><b>Restricted distribution:</b><br>Scattered in S, E & central England & Wales.                                                          | A1.1 Broadleaved woodland<br>B3 Calcareous grassland                                                       | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Midas tree-weaver</b><br><i>Midia midas</i><br>(spider)                         | UK BAP              | Ancient woodland in litter, hollow trees & birds' nests.<br><b>Restricted distribution:</b><br>Nottinghamshire, Leicestershire, Essex & Berkshire.                                    | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland<br><b>with</b> veteran/ancient trees | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Broad groove-head spider</b><br><i>Monocephalus castaneipes</i><br>(spider)     | UK BAP              | In south, woodland in moss on trunks & lower branches. In north, uplands & mountains under rocks.<br><b>Restricted distribution:</b><br>Scattered in S & W England, Wales & Scotland. | A1 Woodland<br>A3 Parkland/scattered trees<br><b>with</b> mosses<br>I Rock exposure & waste                | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Horrid ground-weaver</b><br><i>Nothopantes horridus</i><br>(spider)             | UK BAP              | Under stones, debris & cliff-faces in disused limestone quarries.<br><b>Restricted distribution:</b><br>Plymouth, Devon.                                                              | I2.1 Quarry (limestone)                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Swamp lookout spider</b><br><i>Notioscopus sarcinatus</i><br>(spider)           | UK BAP              | Wet heathland & fen with mosses, under pine trees in swamp & wet woodland.<br><b>Restricted distribution:</b><br>Scattered in England, Wales & Scotland.                              | A1 Woodland (wet)<br>A3 Scattered trees<br>D2 Wet heathland<br>E3 Fen<br><b>with</b> mosses<br>F1 Swamp    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Triangle hammock-spider</b><br><i>Saaristoa firma</i><br>(spider)               | UK BAP              | Damp woodland, scrub, peat bog, fen & heathland amongst moss, leaf litter, pine needles & heather.<br><b>Restricted distribution:</b><br>Scattered throughout Britain.                | A1 Woodland (damp)<br>A2 Scrub<br>D Heathland<br>E1 Bog<br>E3 Fen                                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Cloud-living spider</b><br><i>Semljicola caliginosus</i><br>(spider)            | UK BAP              | Wet places in upland mires amongst moss, rushes & grass.<br><b>Restricted distribution:</b><br>N England & Scotland.                                                                  | B5 Marsh/marshy grassland<br>D2 Wet heathland<br>E Mire                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Bend-bearing blunt-brow spider</b><br><i>Silometopus incurvatus</i><br>(spider) | UK BAP              | Coastal sand dunes in marram & sea buckthorn litter.<br><b>Restricted distribution:</b><br>Coasts of N England & Scotland.                                                            | H6 Sand dune<br><b>with</b> <i>Ammophila arenaria</i> & <i>Hippophae rhamnoides</i>                        | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Gentle groove-head spider</b><br><i>Tapinocyba mitis</i><br>(spider)            | UK BAP              | Pine woodland & open dry heathland under deep litter & moss.<br><b>Restricted distribution:</b><br>S central England.                                                                 | A1.2 Coniferous woodland<br>D1 Dry heathland                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                                     | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|---------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Small-horned walckenaer</b><br><i>Walckenaeria corniculans</i><br>(spider)               | UK BAP                                | Dry heathland, near pines trees & woodland litter.<br><b>Restricted distribution:</b><br>Scattered in S & central England.                                                                       | A1 Woodland<br>D1 Dry heathland                                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>White-clawed freshwater crayfish</b><br><i>Austropotamobius pallipes</i><br>(crustacean) | <b>W&amp;CA<sup>2</sup></b><br>UK BAP | Clear, well-oxygenated alkaline water in small streams, lakes, rivers, water-filled quarries & reservoirs.<br><b>Restricted Distribution:</b><br>Central & N England, Welsh borders & N Ireland. | G1 Standing water (lake/reservoir/ flooded-quarry)<br>G2 Running water (stream/river)                              | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Fairy shrimp</b><br><i>Chirocephalus diaphanous</i><br>(crustacean)                      | <b>W&amp;CA<sup>1</sup></b>           | Temporary pools (ponds to muddy ruts) in neutral grassland sites with regular disturbance.<br><b>Restricted Distribution:</b><br>Devon, Cornwall, New Forest & Cambs.                            | B2 Neutral grassland<br>G1 Standing water (ephemeral)                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Lagoon sand-shrimp</b><br><i>Gammarus insensibilis</i><br>(crustacean)                   | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Saline lagoons.<br><b>Restricted Distribution:</b><br>S coast England, Severn Estuary, E Anglia, Humber & S Wales.                                                                               | G1.6 Brackish standing water                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>British cave shrimp</b><br><i>Niphargus glenniei</i><br>(crustacean)                     | UK BAP                                | Limestone caves, mines, underground wells & springs.<br><b>Restricted Distribution:</b><br>Devon & Cornwall.                                                                                     | E2 Flush & spring<br>I1.5 Cave<br>I2.3 Mine                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Tadpole shrimp</b><br><i>Triops cancriformis</i><br>(crustacean)                         | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Seasonal brackish ponds which dry out in summer.<br><b>Restricted Distribution:</b><br>New Forest & SW Scotland.                                                                                 | G1.6 Brackish standing water (seasonal ponds)                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Turk's earth-centipede</b><br><i>Nothogeophilus turki</i><br>(centipede)                 | UK BAP                                | Coastal locations - deciduous woodland on vegetated cliffs under stones & litter.<br><b>Restricted Distribution:</b><br>Isles of Scilly & Isle of Wight.                                         | A1.1 Broadleaved woodland<br>H8 Maritime cliff & slope                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Kentish snake millipede</b><br><i>Metaiulus pratensis</i><br>(millipede)                 | UK BAP                                | Newly-ploughed pasture, arable, woodland, wetlands, wet grassland & carr.<br><b>Restricted Distribution:</b><br>Kent.                                                                            | A1 Woodland (also carr)<br>B4 Improved grassland<br>B5 Marsh/marshy grassland<br>E3 Fen<br>F1 Swamp<br>J1.1 Arable | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Boring millipede</b><br><i>Polyzonium germanicum</i><br>(millipede)                      | UK BAP                                | Old coppice woodland.<br><b>Restricted Distribution:</b><br>Kent.                                                                                                                                | A1.1.1 Broadleaved semi-natural woodland (ancient coppice)                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                       | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                                                                                         | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Sand pill-millipede</b><br><i>Trachysphaera lobata</i><br>(millipede)      | UK BAP                                | Coastal woodland & scrub in pockets of sand on cliffs & outcrops.<br><b>Restricted distribution:</b><br>Isle of Wight & Swansea, Wales.                               | A1.1 Broadleaved woodland<br>A2 Scrub<br>H8 Maritime cliff & slope                                                                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Southern iron blue mayfly</b><br><i>Nigrobaetis niger</i><br>(mayfly)      | UK BAP                                | Lowland rivers & streams, amongst aquatic macrophytes in riffle areas.<br><b>Distribution:</b><br>Widespread but local in England, Wales & Scotland.                  | F2.2 Inundation vegetation<br>G2 Running water (river/stream)                                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Yellow mayfly</b><br><i>Potamanthus luteus</i><br>(mayfly)                 | UK BAP                                | Pools & margins of large rivers amongst stones & sand.<br><b>Restricted distribution:</b><br>S & central England (Wye, Herefordshire) & S & E Wales (Usk).            | G2 Running water (river/stream)                                                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Norfolk hawker</b><br><i>Aeshna isosceles</i><br>(dragonfly)               | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Fen & grazing marsh dyke & ditch systems & small turf ponds with clean water & floating vegetation.<br><b>Restricted distribution:</b><br>Norfolk & Suffolk Broads.   | B5 Marsh/marshy grassland<br>E3 Fen<br>F1 Swamp<br>G1 Standing water<br><b>with <i>Stratoites aloides</i></b>                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Southern damselfly</b><br><i>Coenagrion mercurial</i><br>(damselfly)       | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Base-rich slow-flowing rivers & streams, acid heathland & water meadows in floodplains of chalk rivers.<br><b>Restricted distribution:</b><br>S & SW England & Wales. | B5 Marsh/marshy grassland<br><b>in association with</b><br>G2 Running water (on calcareous ground)<br>D Heathland<br><b>in association with</b><br>G2 Running water | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Large marsh grasshopper</b><br><i>Stethophyma grossum</i><br>(grasshopper) | UK BAP                                | Wetlands, acid bogs, tussocky grass & scrub.<br><b>Restricted distribution:</b><br>S England.                                                                         | B5 Marsh/marshy grassland (acid)<br>E1 Bog<br>E3 Fen<br>F1 Swamp<br><b>with <i>Molinia caerulea</i></b>                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Field cricket</b><br><i>Gryllus campestris</i><br>(cricket)                | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | S-facing short turf on sand or chalk soils with patches of bare ground.<br><b>Restricted distribution:</b><br>Surrey, Sussex & Hampshire.                             | B1 Acid grassland<br>B3 Calcareous grassland<br><b>in association with</b><br>J4 Bare ground (south-facing)                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Mole cricket</b><br><i>Gryllotalpa gryllotalpa</i><br>(cricket)            | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Loose damp soil, edges of wetlands & seepages.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                                 | E3 Fen<br>F1 Swamp<br>F2 Marginal & inundation                                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Wart-biter</b><br><i>Decticus verrucivorus</i><br>(cricket)                | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Chalk grassland, with areas of bare ground.<br><b>Restricted distribution:</b><br>Wiltshire, E Sussex, Dorset & Kent.                                                 | B3 Calcareous grassland<br><b>in association with</b><br>J4 Bare ground                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                          | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                            | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Northern February red<br><i>Brachyptera putata</i><br>(stonefly) | UK BAP                                | Rivers.<br><b>Restricted distribution:</b><br>Scotland, Wales (Usk) & Hereford (Wye).                                                 | G2 Running water (river)                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Scarce yellow sally<br><i>Isogenus nubecula</i><br>(stonefly)    | UK BAP                                | Large lowland rivers.<br><b>Restricted distribution:</b><br>River Dee, Wales.                                                         | G2 Running water (river)                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Apple lace-bug<br><i>Physatocheila smreczynskii</i><br>(bug)     | UK BAP                                | Orchards & hedgerows with lichen-covered apple trees.<br><b>Restricted distribution:</b><br>Cornwall & Devon.                         | A1.1.2 Broadleaved plantation woodland (orchard)<br>J2 Hedgerows<br><b>with</b> <i>Malus</i> sp. trees | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Hairy shore-bug<br><i>Saldula setulosa</i><br>(bug)              | UK BAP                                | Sandy silt, near high water mark with sparse cord-grass.<br><b>Restricted distribution:</b><br>Poole Harbour, Dorset.                 | H6 Sand dune<br><b>with</b> <i>Spartina</i> sp.                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No |
| Lesser water-measurer<br><i>Hydrometra gracilentia</i><br>(bug)  | UK BAP                                | Ponds & ditches in fenland.<br><b>Restricted distribution:</b><br>Norfolk Broads & E Sussex.                                          | E3 Fen<br>G1 Standing water<br>G2 Running water                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| New Forest cicada<br><i>Cicadetta montana</i><br>(bug)           | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Warm, S-facing scrub, woodland glades & margins.<br><b>Restricted distribution:</b><br>New Forest.                                    | A1 Woodland (glades & margins)<br>A2 Scrub                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Sea-wormwood leafhopper<br><i>Chlorita viridula</i><br>(bug)     | UK BAP                                | Coastal saltmarshes, dykes & sea walls where sea wormwood grows.<br><b>Restricted distribution:</b><br>Thames Estuary & N Kent coast. | H2 Saltmarsh<br>H8 Maritime cliff & slope<br><b>with</b> <i>Artemisia maritima</i>                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Large dune leafhopper<br><i>Doratura impudica</i><br>(bug)       | UK BAP                                | Coastal sand dunes with sparse pioneer vegetation.<br><b>Restricted distribution:</b><br>Coasts of E Anglia & SE England.             | H6 Sand dune<br><b>with</b> <i>Elytrigia juncea</i>                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Carlina thistle leafhopper<br><i>Euscelis venosus</i><br>(bug)   | UK BAP                                | Tall calcareous grassland.<br><b>Restricted distribution:</b><br>Hampshire & Worcestershire.                                          | B3 Calcareous grassland (tall sward)                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Pondweed leafhopper<br><i>Macrosteles cyane</i><br>(bug)         | UK BAP                                | Ponds with broad-leaved pondweed.<br><b>Restricted distribution:</b><br>Surrey & Sussex.                                              | G1 Standing water (ponds)<br><b>with</b> <i>Potamogeton natans</i>                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Chalk planthopper<br><i>Eurysa douglasi</i><br>(bug)             | UK BAP                                | Well-established chalk grassland with grass tussocks.<br><b>Restricted distribution:</b><br>Sussex & Kent.                            | B3 Calcareous grassland                                                                                | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                          | CONSERVATION STATUS | HABITAT NICHE                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|----------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Tall fescue planthopper<br><i>Ribautodelphax imitans</i><br>(bug)                | UK BAP              | Calcareous grassland with tall fescue grass tussocks.<br><b>Restricted distribution:</b><br>Dorset, Essex & Middlesex.        | B3 Calcareous grassland with <i>Festuca arundinacea</i>                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <i>Agonum scitulum</i><br>(ground beetle)                                        | UK BAP              | Shaded marshes & carrs, lowland wetland margins & fens.<br><b>Restricted distribution:</b><br>Medway, Kent.                   | B5 Marsh/marshy grassland<br>E3 Fen<br>F Swamp, marginal & inundation<br>G2 Running water                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Early sunshiner<br><i>Amara famelica</i><br>(ground beetle)                      | UK BAP              | Damp areas in dry, sandy heaths.<br><b>Restricted distribution:</b><br>Sussex & Yorkshire.                                    | D1 Dry heathland in association with<br>D2 Wet heathland                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Wormwood moonshiner<br><i>Amara fusca</i><br>(ground beetle)                     | UK BAP              | Dry, open sandy heath, sandy roadside verges & sand dunes.<br><b>Restricted distribution:</b><br>Suffolk & S Wales.           | B1 Acid grassland<br>D1 Dry heathland<br>D5 Dry heath/acid grassland mosaic<br>H6 Sand dune with <i>Artemisia campestris</i> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Heath short-spur<br><i>Anisodactylus nemorivagus</i><br>(ground beetle)          | UK BAP              | Dry, sandy heaths.<br><b>Restricted distribution:</b><br>S England (Hampshire).                                               | D1 Dry heathland                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Saltmarsh short-spur<br><i>Anisodactylus poeciloides</i><br>(ground beetle)      | UK BAP              | Saltmarshes, open saline lagoons & brackish ditches.<br><b>Restricted distribution:</b><br>S & E English coast.               | G1.6 Brackish standing water<br>H2 Saltmarsh                                                                                 | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Thorne pin-palp<br><i>Bembidion humerale</i><br>(ground beetle)                  | UK BAP              | Moist, lowland raised bogs.<br><b>Restricted distribution:</b><br>Hatfield & Thorne Moors, Yorkshire.                         | E1 Bog<br>E4 Bare peat                                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Scarce four-dot pin-palp<br><i>Bembidion quadripustulatum</i><br>(ground beetle) | UK BAP              | Wetland margins, rivers, ponds & bare silt lagoon margins.<br><b>Restricted distribution:</b><br>S half of E England & Wales. | F Swamp, marginal & inundation<br>G1 Standing water<br>G2 Running water                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No |
| Pale pin-palp<br><i>Bembidion testaceum</i><br>(ground beetle)                   | UK BAP              | Sandy or gravelly river banks by slow-moving water.<br><b>Restricted distribution:</b><br>N, S & E England & S Wales.         | G2 Running water (river)                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Streaked bombardier beetle<br><i>Brachinus sclopeta</i><br>(ground beetle)       | UK BAP              | Waste ground & brownfield sites with bare ground & sandy soil.<br><b>Restricted distribution:</b><br>Thames Corridor, London. | I2.2 Artificial rock exposure & waste<br>J4 Bare ground<br>J5 Other habitat (industrial)                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                          | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Silt silver-spot</b><br><i>Bracteon argenteolum</i><br>(ground beetle)        | UK BAP              | Edges of large silt lagoons in quarries.<br><b>Restricted distribution:</b><br>Suffolk & Kent.                                                               | G1 Standing water<br><b>in association with</b><br>I2.1 Quarry                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Lesser searcher</b><br><i>Calosoma inquisitor</i><br>(ground beetle)          | UK BAP              | Old oak woodland & wood pasture.<br><b>Restricted distribution:</b><br>Devon, New Forest, Lake District & Wales.                                             | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Quercus</i> sp.                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Blue ground beetle</b><br><i>Carabus intricatus</i><br>(ground beetle)        | UK BAP              | Moist old woodland & mossy wood pasture in river valleys & dead wood.<br><b>Restricted distribution:</b><br>Cornwall & Devon.                                | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>in association with</b><br>E2 Flush & spring or<br>G2 Running water<br><b>with</b> <i>Quercus</i> sp. & <i>Fagus sylvatica</i> | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Necklace ground beetle</b><br><i>Carabus monilis</i><br>(ground beetle)       | UK BAP              | Cultivated fields, arable field margins, grasslands, scrub, sandy heaths, willow carr & woodland.<br><b>Restricted distribution:</b><br>Central & S England. | A1 Woodland<br>A2 Scrub<br>B Grassland<br>D1 Dry heathland<br>J1.1 Arable                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Black night-runner</b><br><i>Chlaenius tristis</i><br>(ground beetle)         | UK BAP              | Very wet fens, bogs & flushes.<br><b>Restricted distribution:</b><br>Llyn peninsula, N Wales.                                                                | E Mire                                                                                                                                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Northern dune tiger beetle</b><br><i>Cicindela hybrida</i><br>(ground beetle) | UK BAP              | Dunes with open heath & grassland.<br><b>Restricted distribution:</b><br>Lancashire & Cumbria coasts.                                                        | H6 Sand dune                                                                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Heath tiger beetle</b><br><i>Cicindela sylvatica</i><br>(ground beetle)       | UK BAP              | Lowland heaths with patches of bare ground.<br><b>Restricted distribution:</b><br>Dorset & Surrey.                                                           | D1 Dry heathland                                                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Cliff tiger beetle</b><br><i>Cylindera germanica</i><br>(ground beetle)       | UK BAP              | Soft cliffs & grassy slopes on coast.<br><b>Restricted distribution:</b><br>Dorset, Hampshire & Isle of Wight coasts.                                        | H8 Maritime cliff & slope                                                                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Brush-thighed seed-eater</b><br><i>Harpalus froelichii</i><br>(ground beetle) | UK BAP              | Sandy lowland heaths, grassland, sand pits & dunes.<br><b>Restricted distribution:</b><br>E Anglia & Lincolnshire.                                           | B1 Acid grassland<br>D Heathland (sandy)<br>H6 Sand dune                                                                                                                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>St. Bees seed-eater</b><br><i>Harpalus honestus</i><br>(ground beetle)        | UK BAP              | Sand or chalk grassy soft cliffs.<br><b>Restricted distribution:</b><br>Whitehaven, Cumbria.                                                                 | H8 Maritime cliff & slope                                                                                                                                                                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                                    | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                  | EQUIVALENT PHASE 1 HABITATS                                                                                                | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <i>Harpalus melancholicus</i><br>(ground beetle)                                           | UK BAP              | Sand dunes & sandy or calcareous grassland.<br><b>Restricted distribution:</b><br>Kent & Stackpole Warren, S Wales.                                            | B1 Acid grassland<br>B3 Calcareous grassland<br>H6 Sand dune                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Blue plunderer</b><br><i>Lebia cyanocephala</i><br>(ground beetle)                      | UK BAP              | Dry, sandy grasslands & heaths.<br><b>Restricted distribution:</b><br>Surrey.                                                                                  | B1 Acid grassland<br>D Heathland<br><b>with</b> <i>Hypericum</i> sp. & <i>Chrysolina hyperici</i> beetle                   | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Set-aside downy-back</b><br><i>Ophonus laticollis</i><br>(ground beetle)                | UK BAP              | Bare & disturbed ground, arable field margins, hedgerow, scrub & calcareous grassland.<br><b>Restricted distribution:</b><br>Oxfordshire, East Anglia & Cambs. | A2.1 Dense scrub<br>B3 Calcareous grassland<br>J1.1 Arable<br>J2.1 Intact hedge<br>J2.3 Hedge with trees<br>J4 Bare ground | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Mellet's downy-back</b><br><i>Ophonus melletii</i><br>(ground beetle)                   | UK BAP              | Calcareous grassland & bare ground, often on coast.<br><b>Restricted distribution:</b><br>Very local & scattered in England.                                   | B3 Calcareous grassland<br>H8.4 Coastal grassland<br>J4 Bare ground                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <i>Ophonus puncticollis</i><br>(ground beetle)                                             | UK BAP              | Dry chalk, limestone or gravel with some vegetation & chalk pits.<br><b>Restricted distribution:</b><br>S & E England.                                         | I2.1 Quarry (limestone)                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Oolite downy-back</b><br><i>Ophonus stictus</i><br>(ground beetle)                      | UK BAP              | Limestone quarries & previously developed bare disturbed ground.<br><b>Restricted distribution:</b><br>Leicestershire & Northamptonshire.                      | I2.1 Quarry (limestone)<br>J4 Bare ground                                                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Crucifix ground beetle</b><br><i>Panagaeus cruxmajor</i><br>(ground beetle)             | UK BAP              | Well-vegetated fens, dune slacks & coastal grazing marsh, always near water.<br><b>Restricted distribution:</b><br>E & SE England & S Wales.                   | E3 Fen<br>H2 Saltmarsh<br>H6 Sand dune<br><b>in association with</b><br>G1 Standing water                                  | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Mab's lantern ground beetle</b><br><i>Philorhizus quadrisignatus</i><br>(ground beetle) | UK BAP              | Broadleaved woodland, parkland & wood pasture.<br><b>Restricted distribution:</b><br>S & central England.                                                      | A1.1 Broadleaved woodland<br>A3.1 Broadleaved parkland/scattered trees                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <i>Philorhizus vectensis</i><br>(ground beetle)                                            | UK BAP              | Coastal soft cliffs & sand or shingle on coast.<br><b>Restricted distribution:</b><br>S coast of England (Cornwall to Kent).                                   | H3 Shingle<br>H5 Strandline vegetation<br>H6 Sand dune<br>H8 Maritime cliff & slope                                        | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                                                   | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Kugelann's green clock</b><br><i>Poecilus kugelanni</i><br>(ground beetle)             | UK BAP                                | Lowland dry heathland, bare disturbed sandy ground & sand pits.<br><b>Restricted distribution:</b><br>S & E England.                                               | D1.1 Dry acid heathland<br>I2.1 Quarry (sand pit)<br>J4 Bare ground (sandy)                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Yellow pogonus</b><br><i>Pogonus luridipennis</i><br>(ground beetle)                   | UK BAP                                | Coastal sandy saline lagoon margins & clay coastal marshes.<br><b>Restricted distribution:</b><br>S, SW & E coasts of England.                                     | G1.6 Brackish standing water<br>H2 Saltmarsh                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Brown diving beetle</b><br><i>Agabus brunneus</i><br>(water beetle)                    | UK BAP                                | Shallow, swift-flowing stream in lowland heathland.<br><b>Restricted distribution:</b><br>Cornwall, Dorset, New Forest & Yorkshire.                                | D1 Dry heathland & D2 Wet heathland <b>in association with</b><br>G2 Running water                                                 | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Minutest diving beetle</b><br><i>Bidessus minutissimus</i><br>(water beetle)           | UK BAP                                | Rivers with extensive sand & shingle bars.<br><b>Restricted distribution:</b><br>Cheshire, Wales & SW Scotland.                                                    | G2 Running water (river)                                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>One-grooved diving beetle</b><br><i>Bidessus unistriatus</i><br>(water beetle)         | UK BAP                                | Lowland wetlands, reedbeds, stagnant ponds & slow drains.<br><b>Restricted distribution:</b><br>New Forest & Norfolk Broads.                                       | E3 Fen<br>F Swamp, marginal & inundation<br><b>in association with</b><br>G1 Standing water &/or<br>G2 Running water               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Spangled diving beetle</b><br><i>Graphoderus zonatus</i><br>(water beetle)             | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Large shallow ponds on acidic sandy soils in heathland.<br><b>Restricted distribution:</b><br>Woolmer Forest, Hampshire.                                           | D Heathland<br><b>in association with</b><br>G1 Standing water                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Ron's diving beetle</b><br><i>Hydroporus necopinatus subsp. roni</i><br>(water beetle) | UK BAP                                | Shallow peaty pools on exposed heathland & rush pasture.<br><b>Restricted distribution:</b><br>Poole Basin, Dorset.                                                | B5 Marsh/marshy grassland<br>D Heathland<br>E1 Bog<br><b>in association with</b><br>G1 Standing water (weedy & peat-rich)          | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Oxbow diving beetle</b><br><i>Hydroporus rufifrons</i><br>(water beetle)               | UK BAP                                | Shallow & temporary pools in unimproved pasture, often in old oxbow systems.<br><b>Restricted distribution:</b><br>N, S & E England, Ceredigion, Wales & Scotland. | B2 Neutral grassland<br>B3 Calcareous grassland<br>E3 Fen<br><b>in association with</b><br>G1 Standing water (shallow & ephemeral) | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Sussex diving beetle</b><br><i>Laccophilus poecilus</i><br>(water beetle)              | UK BAP                                | Lowland rich fen & marsh near coast (but not in brackish water).<br><b>Restricted distribution:</b><br>Lewes Levels, Sussex & SW Yorkshire.                        | B5 Marsh/marshy grassland<br>E3 Fen<br>G1 Standing water                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                                | CONSERVATION STATUS         | HABITAT NICHE                                                                                                                                          | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Eyed longhorn beetle</b><br><i>Oberea oculata</i><br>(longhorn beetle)              | UK BAP                      | Lowland fens & wet carr woodland with purple willows.<br><b>Restricted distribution:</b><br>Cam Washes, Cambridgeshire.                                | A1.1.1 Broadleaved semi-natural woodland (carr)<br>A2 Scrub<br>E3 Fen<br><b>with</b> <i>Salix purpurea</i>                                                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Rainbow leaf beetle</b><br><i>Chrysolina cerealis</i><br>(leaf beetle)              | <b>W&amp;CA<sup>1</sup></b> | Mountainous base-rich grassland (630 m above sea level).<br><b>Restricted distribution:</b><br>Caernarvonshire, N Wales.                               | B3.1 Unimproved calcareous grassland<br>J5 Other habitat (mountain)<br><b>with</b> <i>Thymus polytrichus</i>                                                                                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Tansy beetle</b><br><i>Chrysolina graminis</i><br>(leaf beetle)                     | UK BAP                      | Riverbanks & wetlands.<br><b>Restricted distribution:</b><br>Banks of R.Ouse, York.                                                                    | G2 Running water (river)<br><b>with</b> <i>Tanacetum vulgare</i>                                                                                                                                                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Hazel pot beetle</b><br><i>Cryptocephalus coryli</i><br>(leaf beetle)               | UK BAP                      | Woodland & scrub in lowland calcareous grassland & heathland.<br><b>Restricted distribution:</b><br>Lincolnshire, Surrey, Berkshire & Sherwood Forest. | A1.1 Broadleaved woodland<br>A2 Scrub<br><b>in association with</b><br>B3 Calcareous grassland<br>D Heathland<br><b>with</b> <i>Betula pendula</i> ,<br><i>Corylus avellana</i> ,<br><i>Crataegus monogyna</i> ,<br><i>Quercus</i> sp. & <i>Dactylis glomerata</i> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Ten-spotted pot beetle</b><br><i>Cryptocephalus decemmaculatus</i><br>(leaf beetle) | UK BAP                      | Broadleaved woodland on wet hillsides, fens & bogs.<br><b>Restricted distribution:</b><br>Staffordshire & Perthshire, Scotland.                        | A1.1.1 Broadleaved semi-natural woodland<br>E Mire<br><b>with</b> <i>Salix</i> sp., <i>Alnus glutinosa</i> & <i>Betula pubescens</i>                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Pashford pot beetle</b><br><i>Cryptocephalus exiguus</i><br>(leaf beetle)           | UK BAP                      | Wetlands, mixed fen & fen meadows.<br><b>Restricted distribution:</b><br>Pashford Pools Fen, Suffolk.                                                  | B5 Marsh/marshy grassland<br>E3 Fen<br>F1 Swamp<br><b>with</b> <i>Rumex</i> sp.                                                                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Shining pot beetle</b><br><i>Cryptocephalus nitidulus</i><br>(leaf beetle)          | UK BAP                      | Scrub on chalk downland & formerly coppice woodland.<br><b>Restricted distribution:</b><br>Surrey, Sussex & Nottinghamshire.                           | A1.1.1 Broadleaved semi-natural woodland<br>A2 Scrub (on calcareous ground)<br><b>with</b> <i>Betula</i> & <i>Salix</i> sp.,<br><i>Corylus avellana</i> ,<br><i>Crataegus monogyna</i> & <i>Ligustrum vulgare</i>                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Rock-rose pot beetle</b><br><i>Cryptocephalus primarius</i><br>(leaf beetle)        | UK BAP                      | Calcareous grassland on S-facing slopes.<br><b>Restricted distribution:</b><br>S England.                                                              | B3 Calcareous grassland<br><b>with</b> <i>Helianthemum nummularium</i>                                                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Blue pepper-pot beetle</b><br><i>Cryptocephalus punctiger</i><br>(leaf beetle)      | UK BAP                      | Scrub, broadleaved woodland & commons.<br><b>Restricted distribution:</b><br>S, W, E & central England.                                                | A1.1 Broadleaved woodland<br>A2 Scrub<br>B Grassland<br><b>with</b> <i>Betula</i> & <i>Salix</i> sp.                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                               | CONSERVATION STATUS         | HABITAT NICHE                                                                                                                                  | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                         | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Six spotted pot beetle</b><br><i>Cryptocephalus sexpunctatus</i><br>(leaf beetle)  | UK BAP                      | Broadleaved woodland, calcareous grassland & dense scrub.<br><b>Restricted distribution:</b><br>S, W & E England & Scotland.                   | A1.1.1 Broadleaved semi-natural woodland<br>A2.1 Dense scrub<br>B3 Calcareous grassland <b>with</b> <i>Betula</i> , <i>Quercus</i> & <i>Salix</i> sp., <i>Corylus avellana</i> , <i>Crataegus monogyna</i> & <i>Populus tremula</i> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Zircon reed beetle</b><br><i>Donacia aquatica</i><br>(reed beetle)                 | UK BAP                      | Aquatic vegetation at margins of lakes, ponds, fens & marsh.<br><b>Restricted distribution:</b><br>E Anglia, Sussex & Lake District.           | B5 Marsh/marshy grassland<br>E3 Fen<br>F Swamp, marginal & inundation<br>G1.1 Eutrophic standing water<br>G1.2 Mesotrophic standing water<br><b>with</b> <i>Carex acutiformis</i> , <i>C. rostrata</i> & <i>C. vesicaria</i>        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Two-tone reed beetle</b><br><i>Donacia bicolora</i><br>(reed beetle)               | UK BAP                      | Lowland river, canal, lake & pond margins.<br><b>Restricted distribution:</b><br>Scattered in S England, Cumbria, Wales & Ireland.             | G1.1 Eutrophic standing water<br>G2 Running water<br><b>with</b> <i>Sparganium erectum</i>                                                                                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Bronze Lundy cabbage flea beetle</b><br><i>Psylliodes luridipennis</i><br>(beetle) | UK BAP                      | Coastal cliffs & slopes.<br><b>Restricted distribution:</b><br>Lundy Island.                                                                   | H8 Maritime cliff & slope<br><b>with</b> <i>Coincya wrightii</i>                                                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Moccas beetle</b><br><i>Hypebaeus flavipes</i><br>(malachite beetle)               | <b>W&amp;CA<sup>1</sup></b> | Old oak wood pasture.<br><b>Restricted distribution:</b><br>Moccas Park, Hertfordshire.                                                        | A3.1 Broadleaved parkland/scattered trees                                                                                                                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scarlet malachite beetle</b><br><i>Malachius aeneus</i><br>(malachite beetle)      | UK BAP                      | Hay meadows, pastures, wide verges & hedgerows.<br><b>Restricted distribution:</b><br>New Forest, Kent, Cambs, Somerset & Essex/Hertfordshire. | B Grassland<br>J2.1 Intact hedge<br>J2.3 Hedge with trees                                                                                                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Petty whin weevil</b><br><i>Exapion genistae</i><br>(beetle)                       | UK BAP                      | Upland heathland.<br><b>Restricted distribution:</b><br>S & SE England & Scotland.                                                             | D Heathland (upland)<br><b>with</b> <i>Genista tinctoria</i>                                                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Sallow guest weevil</b><br><i>Melanapion minimum</i><br>(beetle)                   | UK BAP                      | Dense stands of willow & willow carr in fens.<br><b>Restricted distribution:</b><br>E, W & central England.                                    | A1.1.1 Broadleaved semi-natural woodland (carr)<br>A2.1 Dense scrub<br>E3 Fen<br><b>with</b> <i>Salix</i> sp.                                                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Flowering-rush weevil</b><br><i>Bagous nodulosus</i><br>(beetle)                   | UK BAP                      | Lowland fens & reedbeds.<br><b>Restricted distribution:</b><br>Somerset Levels.                                                                | E3 Fen<br>F Swamp, marginal & inundation<br>G1.1 Eutrophic standing water<br><b>with</b> <i>Butomus umbellatus</i>                                                                                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                                     | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                     | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                      | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|---------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Alder flea weevil</b><br><i>Orchestes testaceus</i><br>(beetle)                          | UK BAP                                | Sheltered & well-lit canopy woodland.<br><b>Restricted distribution:</b><br>E & central England.                                  | A1.1.1/A1.3.1<br>Broadleaved/mixed semi-natural woodland<br><b>with</b> <i>Alnus glutinosa</i>                                                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Poplar leaf-rolling weevil</b><br><i>Byctiscus populi</i><br>(beetle)                    | UK BAP                                | Woodland edge & scrub.<br><b>Restricted distribution:</b><br>S, E & central England.                                              | A1.1 Broadleaved woodland (edge)<br>A2 Scrub<br><b>with</b> <i>Populus tremula</i> & <i>P. alba</i>                                                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Bearded false darkling beetle</b><br><i>Melandrya barbata</i><br>(false darkling beetle) | UK BAP                                | Dead/decaying beech & oak trees in woods & wood pasture.<br><b>Restricted distribution:</b><br>New Forest & Berkshire.            | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Quercus</i> sp. & <i>Fagus sylvatica</i> veteran/ancient trees                           | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Black oil-beetle</b><br><i>Meloe proscarabaeus</i><br>(oil-beetle)                       | UK BAP                                | Coastal grassland, cliffs, heaths & meadows.<br><b>Restricted distribution:</b><br>Scattered in England & Wales.                  | B3 Calcareous grassland<br>H8 Maritime cliff & slope                                                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Rugged oil-beetle</b><br><i>Meloe rugosus</i><br>(oil-beetle)                            | UK BAP                                | Coastal grassland, cliffs, heaths & meadows.<br><b>Restricted distribution:</b><br>SW England & Wales.                            | B1 Acid grassland<br>B3 Calcareous grassland<br>H8 Maritime cliff & slope                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Violet oil-beetle</b><br><i>Meloe violaceus</i><br>(oil-beetle)                          | UK BAP                                | Woodland glades, meadows, heathland, moors & coastal grassland.<br><b>Restricted distribution:</b><br>Scattered in N & W England. | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>B1 Acid grassland<br>B3 Calcareous grassland<br>D Heathland                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Mire pill beetle</b><br><i>Curimopsis nigrita</i><br>(pill beetle)                       | <b>W&amp;CA<sup>3</sup></b><br>UK BAP | Lowland raised mires & peat bogs amongst moss & heather litter.<br><b>Restricted distribution:</b><br>S Yorkshire & Lincolnshire. | E Mire<br><b>with</b> <i>Sphagnum</i> sp.                                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Red-horned cardinal click beetle</b><br><i>Ampedus rufipennis</i><br>(click beetle)      | UK BAP                                | Old deciduous woods, wood pasture, veteran trees & dead wood.<br><b>Restricted distribution:</b><br>S, W & E England.             | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Fagus sylvatica</i> , <i>Fraxinus excelsior</i> & <i>Ulmus</i> sp. veteran/ancient trees | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Chestnut click beetle</b><br><i>Anostirus castaneus</i><br>(click beetle)                | UK BAP                                | Loose sandy soil on soft cliffs.<br><b>Restricted distribution:</b><br>Isle of Wight & Birk Crag near Harrogate.                  | H8 Maritime cliff & slope                                                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Oak click beetle</b><br><i>Lacon querceus</i><br>(click beetle)                          | UK BAP                                | Ancient decaying oak trees & dead wood.<br><b>Restricted distribution:</b><br>Windsor Forest, Berkshire.                          | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> veteran/ancient trees                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                           | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                                                     | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Violet click beetle</b><br><i>Limonicus violaceus</i><br>(click beetle)        | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Old decaying broadleaved trees & wood pasture.<br><b>Restricted distribution:</b><br>Worcestershire, Windsor Forest, Berkshire & Gloucestershire.                                                 | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland<br><b>with</b> <i>Fagus sylvatica</i> & <i>Fraxinus excelsior</i> veteran/ancient trees                                                                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>The Queen's Executioner</b><br><i>Megapenthes lugens</i><br>(click beetle)     | UK BAP                                | Old woodland & wood pasture with veteran trees & deadwood.<br><b>Restricted distribution:</b><br>Windsor Forest & Park, Berkshire.                                                                | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Fagus sylvatica</i> & <i>Ulmus</i> sp. veteran/ancient trees                                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Sandwich click beetle</b><br><i>Melanotus punctolineatus</i><br>(click beetle) | UK BAP                                | Sand dunes.<br><b>Restricted distribution:</b><br>Kent, Suffolk & Swansea, S Wales.                                                                                                               | H6 Sand dune                                                                                                                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Hairy click beetle</b><br><i>Synaptus filiformis</i><br>(click beetle)         | UK BAP                                | Riverbanks & canal margins in waterlogged soil.<br><b>Restricted distribution:</b><br>River Parrett, Somerset, Severn Catchment & Cumbria.                                                        | G2 Running water (river/canal)<br><b>with</b> <i>Phalaris arundinacea</i>                                                                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Cosnard's net-winged beetle</b><br><i>Platycis cosnardi</i><br>(beetle)        | UK BAP                                | Old decaying beech trees & dead wood.<br><b>Restricted distribution:</b><br>Wye Gorge/Forest of Dean & W Sussex Downs.                                                                            | A1.1 Broadleaved woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Fagus sylvatica</i>                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Noble chafer</b><br><i>Gnorimus nobilis</i><br>(beetle)                        | UK BAP                                | Old traditional orchards.<br><b>Restricted distribution:</b><br>Worcestershire, Gloucestershire, Kent, Herefordshire, New Forest & Oxfordshire.                                                   | A1.1.2 Broadleaved plantation woodland (orchard)<br><b>with</b> <i>Prunus avium</i> , <i>P. domestica</i> & <i>Malus domestica</i>                                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Variable chafer</b><br><i>Gnorimus variabilis</i><br>(beetle)                  | UK BAP                                | Woodlands & pasture with veteran trees & dead wood.<br><b>Restricted distribution:</b><br>Windsor Forest & Great Park, Berkshire.                                                                 | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Fagus sylvatica</i> & <i>Quercus</i> & <i>Ulmus</i> sp. veteran/ancient trees                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Stag beetle</b><br><i>Lucanus cervus</i><br>(beetle)                           | UK BAP                                | Broadleaved woodland, wood pasture & hedgerows with veteran trees & dead wood.<br><b>Restricted distribution:</b><br>Strongholds in S, SW & SE England & S Wales, Scattered elsewhere in England. | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br>J2.1 Intact hedge<br>J2.3 Hedge with trees<br><b>with</b> <i>Quercus</i> , <i>Tilia</i> & <i>Ulmus</i> sp., <i>Fagus sylvatica</i> & <i>Malus domestica</i> veteran/ancient trees | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                                      | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| New Forest mud beetle<br><i>Helophorus laticollis</i><br>(beetle)            | UK BAP              | Shallow grassy pools on peat heathland & rush pasture.<br><b>Restricted distribution:</b><br>New Forest.                                                        | B5 Marsh/marshy grassland<br>D Heathland<br>E1 Bog<br>E3 Fen<br><b>in association with</b><br>G1 Standing water (shallow/grassy)             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Gravel water beetle<br><i>Hydrochus nitidicollis</i><br>(water beetle)       | UK BAP              | Rivers with exposed sand & gravel sediment.<br><b>Restricted distribution:</b><br>Cornwall & Devon.                                                             | G2 Running water (river)                                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Lesser silver water beetle<br><i>Hydrochara caraboides</i><br>(water beetle) | W&CA <sup>1</sup>   | Still, weedy & peat-rich ditches & ponds, often with overhanging tree cover.<br><b>Restricted distribution:</b><br>Somerset Levels & Cheshire/E Wales.          | G1 Standing water (weedy & peat-rich)                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Bembridge beetle<br><i>Paracymus aeneus</i><br>(water beetle)                | W&CA <sup>1</sup>   | Saline lagoons amongst vegetation on edges.<br><b>Restricted distribution:</b><br>Essex & Isle of Wight.                                                        | F2 Marginal & inundation<br>G1.6 Brackish standing water                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Rockface beetle<br><i>Ochthebius poweri</i><br>(water beetle)                | UK BAP              | Crumbly mud at edge of seepage-fed sea cliff faces.<br><b>Restricted distribution:</b><br>SW England & S Wales.                                                 | G2 Running water <b>in association with</b><br>H8 Maritime cliff & slope                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No |
| Shingle rove beetle<br><i>Meotica anglica</i><br>(rove beetle)               | UK BAP              | River margins amongst sand & gravel.<br><b>Restricted distribution:</b><br>S England, Wales & S Scotland.                                                       | G2 Running water (river)                                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Skeetle<br><i>Stenus longitarsis</i><br>(camphor beetle)                     | UK BAP              | Wetland edges.<br><b>Restricted distribution:</b><br>New Forest & Test Valley, Hampshire.                                                                       | F Swamp, marginal & inundation                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Newbery's rove beetle<br><i>Thinobius newberyi</i><br>(rove beetle)          | UK BAP              | Shingle banks on margins of streams & rivers, with exposed sand & gravel substrate.<br><b>Restricted distribution:</b><br>Cumbria, Wales & Inverness, Scotland. | G2 Running water (stream/river)                                                                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Bordered brown lacewing<br><i>Megalomus hirtus</i><br>(lacewing)             | UK BAP              | Grassland on rocky slopes.<br><b>Restricted distribution:</b><br>Edinburgh, Scotland.                                                                           | B Grassland<br>C2 Upland species-rich ledges<br>I1 Natural rock exposure <b>with</b> <i>Teucrium scorodonia</i>                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Oak mining bee<br><i>Andrena ferox</i><br>(bee)                              | UK BAP              | Open deciduous woodland & scrub.<br><b>Restricted distribution:</b><br>Scattered in S England.                                                                  | A1.1.1 Broadleaved semi-natural woodland<br>A2 Scrub <b>with</b> <i>Crataegus monogyna</i> , <i>Quercus</i> sp. & <i>Acer pseudoplatanus</i> | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                               | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Tormentil mining bee</b><br><i>Andrena tarsata</i><br>(bee)        | UK BAP              | Heaths, moorland, rarely open woodland with S-facing slopes of bare ground for nesting.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                               | A1 Woodland (open)<br>A2 Scrub<br>B Grassland<br>D Heathland<br><b>in association with</b><br>J4 Bare ground (S-facing slopes)<br><b>with</b> <i>Rubus fruticosus</i> ,<br><i>Campanula rotundifolia</i> ,<br><i>Calluna vulgaris</i> ,<br><i>Angelica sylvestris</i> ,<br><i>Achillea millefolium</i> ,<br><i>Potentilla</i> & <i>Spiraea</i> sp. | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Potter flower bee</b><br><i>Anthophora retusa</i><br>(bee)         | UK BAP              | Sandy soils - commons, heathlands, coastal dunes & cliffs.<br><b>Restricted distribution:</b><br>Mainly S half England, scattered in central & E England.                                                    | B1 Acid grassland<br>D Heathland<br>H6.5 Coastal dunes<br>H8 Maritime cliff & slope<br><b>with</b> <i>Lotus corniculatus</i> ,<br><i>Glechoma hederacea</i> ,<br><i>Anthyllis vulneraria</i> ,<br><i>Armeria maritima</i> ,<br><i>Raphanus raphanistrum</i> ,<br><i>Cheiranthus</i> , <i>Taraxacum</i><br>& <i>Vicia</i> sp.                       | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Great yellow bumblebee</b><br><i>Bombus distinguendus</i><br>(bee) | UK BAP              | Extensive natural & semi-natural grassland mosaics with high density of flowering legumes.<br><b>Restricted distribution:</b><br>N coast Scotland, Inner & Outer Hebrides & Orkney.                          | B1 Acid grassland<br>B2 Neutral grassland<br>B3 Calcareous grassland<br><b>with</b> <i>Fabaceae</i><br>particularly <i>Lotus corniculatus</i> , <i>Trifolium pratense</i> & <i>Centaurea nigra</i>                                                                                                                                                 | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Brown-banded carder-bee</b><br><i>Bombus humilis</i><br>(bee)      | UK BAP              | Tall, open flower-rich grasslands on drier sites, often on quarries & brownfield sites.<br><b>Restricted distribution:</b><br>S & W coasts England & Wales, scattered in central & N England & Wales.        | B2 Neutral grassland<br>B3 Calcareous grassland in association with<br>I2.1 Quarry (limestone)<br><b>with</b> <i>Asteraceae</i> ,<br><i>Fabaceae</i> , <i>Lamiaceae</i> & <i>Scrophulariaceae</i>                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Moss carder-bee</b><br><i>Bombus muscorum</i><br>(bee)             | UK BAP              | Large areas of tall, open, flower-rich grasslands, often damp in S & within extensive moorland in Scotland.<br><b>Restricted distribution:</b><br>Mainly coastal & scattered in UK. More common in Scotland. | B1 Acid grassland<br>B2.1 Neutral grassland<br>B5 Marsh/marshy grassland<br><b>with</b> <i>Asteraceae</i> ,<br><i>Fabaceae</i> , <i>Lamiaceae</i> & <i>Scrophulariaceae</i>                                                                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Red-shanked carder-bee</b><br><i>Bombus ruderarius</i><br>(bee)    | UK BAP              | Extensive areas of tall open grasslands & scrub.<br><b>Restricted distribution:</b><br>Mainly S half England & Wales, scattered in N England, Wales, Scotland & Ireland.                                     | A2 Scrub<br>B2 Neutral grassland<br>B3 Calcareous grassland<br><b>with</b> <i>Fabaceae</i> ,<br><i>Lamiaceae</i> & <i>Scrophulariaceae</i>                                                                                                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                              | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                           | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Large garden bumblebee</b><br><i>Bombus ruderatus</i><br>(bee)    | UK BAP              | Open, flower-rich habitats with diversity of wildflowers, particularly labiates & legumes, extensive river-valley systems & legume-dominated field margins.<br><b>Restricted distribution:</b><br>Mainly S & central England. | B2 Neutral grassland<br>B3 Calcareous grassland<br>G2.1 Eutrophic running water<br>(river-valley system)<br>J1.1 Arable<br><b>with Fabaceae, Lamiaceae &amp; Scrophulariaceae, Iris psuedocorus, Stachys palustris, Symphytum sp., Digitalis purpurea &amp; Lonicera periclymenum</b> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Short-haired bumblebee</b><br><i>Bombus subterraneus</i><br>(bee) | UK BAP              | Herb-rich grasslands associated with pre-intensification farming systems in lowlands.<br><b>Restricted distribution:</b><br>Dungeness, Kent.<br>Currently a reintroduction project.                                           | B2.1 Unimproved neutral grassland<br>B3.1 Unimproved calcareous grassland<br><b>with Trifolium pratense, Lonicera periclymenum, Lamium album &amp; Echium vulgare</b>                                                                                                                 | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Shrill carder-bee</b><br><i>Bombus sylvarum</i><br>(bee)          | UK BAP              | Open flower-rich sites - sand dunes, edges of saltmarshes, shingle beaches, chalk downland, heathland & sand pits.<br><b>Restricted distribution:</b><br>Mainly S, SE & E England & S Wales.                                  | B3 Calcareous grassland<br>D Heathland<br>H2 Saltmarsh<br>H3 Shingle<br>H6 Sand dune<br>I2 Artificial rock exposure & waste (sand pits)<br><b>with Asteraceae, Fabaceae, Lamiaceae, Scrophulariaceae, Boraginaceae &amp; Dipsacaceae</b>                                              | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Northern colletes bee</b><br><i>Colletes floralis</i><br>(bee)    | UK BAP              | Coastal sand dunes & machair (maritime grassland with flower-rich sward on wind-blown shell-sand).<br><b>Restricted distribution:</b><br>Cumbria, W coast Scotland & islands & coasts Ireland.                                | H6 Sand dune<br><b>with Gentianaceae, Brassicaceae, Fabaceae, Asteraceae, Apiaceae, Lamiaceae, Rosaceae, Campanulaceae, Caryophyllaceae &amp; Chenopodiaceae</b>                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Sea-aster colletes bee</b><br><i>Colletes halophilus</i><br>(bee) | UK BAP              | Coastal sites - sand dunes & firmer soil behind beaches.<br><b>Restricted distribution:</b><br>E Anglia, Thames Estuary & S coast England.                                                                                    | H6 Sand dune<br><b>with Aster tripolium &amp; Reseda luteola</b>                                                                                                                                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Long-horned mining bee</b><br><i>Eucera longicomis</i><br>(bee)   | UK BAP              | Coastal flower-rich sandy grasslands, soft rock cliffs & landslips, open rides in deciduous woodland & heathland.<br><b>Restricted distribution:</b><br>S England & Wales.                                                    | A1.1.1 Broadleaved semi-natural woodland (open rides)<br>D1 Dry heathland<br>H8 Maritime cliff & slope<br><b>with Boraginaceae Fabaceae, Lamiaceae, Liliaceae</b>                                                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                        | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                     | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                       | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <i>Lasioglossum angusticeps</i> (bee)                          | UK BAP              | Rough coastal landslips, base of cliffs & slopes above beach for nesting.<br><b>Restricted distribution:</b><br>S England coast.                                                                  | H8 Maritime cliff & slope<br><b>with</b> <i>Asteraceae</i> , <i>Daucus carota</i> & <i>Lotus corniculatus</i>                                                                                                     | Distribution: Yes<br>Habitat Present: No       |
| <i>Nomada armata</i> (bee)                                     | UK BAP              | Open grassland where host bee <i>Andrena hattorfiana</i> present.<br><b>Restricted distribution:</b><br>Mainly Oxfordshire & Salisbury Plain, Wiltshire.                                          | B Grassland<br><b>with</b> <i>Knautia arvensis</i> & <i>Scabiosa columbaria</i>                                                                                                                                   | Distribution: Yes<br>Habitat Present: No       |
| <i>Nomada errans</i> (bee)                                     | UK BAP              | Coastal limestone grassland with areas of open clay soil where host bee <i>Andrena nitidiuscula</i> nests.<br><b>Restricted distribution:</b><br>Isle of Purbeck, Dorset.                         | B3.1 Unimproved calcareous grassland<br><b>with</b> <i>Daucus carota</i> , <i>Senecio</i> sp. & <i>Achillea millefolium</i>                                                                                       | Distribution: Yes<br>Habitat Present: No       |
| <i>Osmia inermis</i> (bee)                                     | UK BAP              | Exposed base-rich uplands, sheep pasture on low, dry, hillocks on S-facing mica-schist slope of grazed heath, lichen & moss.<br><b>Restricted distribution:</b><br>Central Scottish Highlands.    | B2.1 Unimproved neutral grassland<br>C2 Upland species-rich ledges<br>D Heathland<br>I1 Natural rock exposure<br><b>with</b> <i>Lotus corniculatus</i> , <i>Vaccinium myrtillus</i> & <i>Ajuga reptans</i>        | Distribution: No<br>Habitat Present: N/A       |
| Wall mason bee<br><i>Osmia parietina</i> (bee)                 | UK BAP              | Unimproved grassland & sheltered scrub.<br><b>Restricted distribution:</b><br>N & W England, Wales & Scotland.                                                                                    | A2 Scrub<br>B2.1 Unimproved neutral grassland<br>B3.1 Unimproved calcareous grassland<br><b>with</b> <i>Fabaceae</i> particularly <i>Lotus corniculatus</i> . Also <i>Rubus fruticosus</i> & <i>Ajuga reptans</i> | Distribution: No<br>Habitat Present: N/A       |
| <i>Osmia uncinata</i> (bee)                                    | UK BAP              | Remnants of ancient Caledonian Forest in woodland clearings, paths & adjacent roadside verges.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                          | A1.2.1 Semi-natural coniferous woodland<br><b>with</b> <i>Lotus corniculatus</i> , <i>Cytisus scoparius</i> & <i>Vaccinium myrtillus</i>                                                                          | Distribution: No<br>Habitat Present: N/A       |
| Large mason bee<br><i>Osmia xanthomelana</i> (bee)             | UK BAP              | Sandstone & chalk cliffs & adjacent landslips.<br><b>Restricted distribution:</b><br>Isle of Wight.                                                                                               | H8 Maritime cliff & slope<br><b>with</b> <i>Lotus corniculatus</i> & <i>Hippocrepis comosa</i>                                                                                                                    | Distribution: No<br>Habitat Present: N/A       |
| Four-banded weevil-wasp<br><i>Cerceris quadricincta</i> (wasp) | UK BAP              | Light sandy soils on S-facing sunny sites - flower-rich areas on edges of lowland dry acid grassland, dry heathland & disturbed waste ground.<br><b>Restricted distribution:</b><br>Essex & Kent. | B1 Acid grassland<br>D1 Dry heathland<br>I2 Artificial rock exposure & waste (disused)                                                                                                                            | Distribution: No<br>Habitat Present: N/A       |

| SPECIES                                                                        | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                           | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|--------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Five-banded weevil-wasp</b><br><i>Cerceris quinquefasciata</i><br>(wasp)    | UK BAP              | Tall, open, lowland dry acid grassland with hard sandy soils, heathland & sand & gravel pits.<br><b>Restricted distribution:</b><br>S & E England.                                                                                                                 | B1 Acid grassland<br>D1 Dry heathland<br><b>in association with</b><br>J4 Bare ground (sandy soils)<br>I2 Artificial rock exposure & waste (sand/gravel pit)<br><b>with</b> <i>Rubus fruticosus</i> & <i>Cirsium arvense</i>                                                          | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Ruby-tailed wasp</b><br><i>Chrysis fulgida</i><br>(wasp)                    | UK BAP              | Scrubby heathland & open woodland.<br><b>Restricted distribution:</b><br>S, SE & E England, Worcestershire & S Wales.                                                                                                                                              | A1 Woodland (open)<br>A2 Scrub<br><b>in association with</b><br>D Heathland<br><b>with</b> <i>Populus tremula</i> & <i>Salix repens</i>                                                                                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Northern osmia ruby-tailed wasp</b><br><i>Chrysura hirsuta</i><br>(wasp)    | UK BAP              | Upland base-rich grassland, traditionally managed upland pasture with stone walls & rocky outcrops & mature Caledonian pine forest.<br><b>Restricted distribution:</b><br>Scotland.                                                                                | A1.2.1 Semi-natural coniferous woodland<br>B2.1 Unimproved neutral grassland<br>B3.1 Unimproved calcareous grassland<br>C2 Upland species-rich ledges<br>I1 Natural rock exposure<br>J2.5 Wall (stone)<br><b>with</b> <i>Osmia inermis</i> , <i>O. uncinata</i> & <i>O. parietina</i> | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Bloody spider-hunting wasp</b><br><i>Homonotus sanguinolentus</i><br>(wasp) | UK BAP              | Un-grazed or lightly grazed sandy humid heathland with low vegetation.<br>Parasite of spider <i>Cheiracanthium erraticum</i> .<br><b>Restricted distribution:</b><br>S England.                                                                                    | D Heathland                                                                                                                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Black-headed mason wasp</b><br><i>Odynerus melanocephalus</i><br>(wasp)     | UK BAP              | Open sites on light clay soils - grasslands, heathlands, soft rock cliffs, landslips & saltmarsh margins. Also disturbed sites - brick pits, sand pits & railway embankments.<br><b>Restricted distribution:</b><br>S half England to Midlands & Snowdonia, Wales. | B Grassland<br>D Heathland<br>H2 Saltmarsh<br>H8.2 Maritime soft cliffs<br>I2 Artificial rock exposure & waste (brick/sand pit)<br><b>with</b> <i>Trifolium</i> & <i>Veronica</i> sp. & <i>Daucus carota</i>                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Fen mason wasp</b><br><i>Odynerus simillimus</i><br>(wasp)                  | UK BAP              | Coastal grazing marsh & fens.<br><b>Restricted distribution:</b><br>East Anglia.                                                                                                                                                                                   | B5 Marsh/marshy grassland<br>E3 Fen<br>H2 Saltmarsh<br>H8.4 Coastal grassland                                                                                                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Purbeck mason wasp</b><br><i>Pseudepipona herrichii</i><br>(wasp)           | UK BAP              | Heathland rich in bell heather (for nectar & prey), with exposed clay ground & open water (for nesting). Parasite of micro-moth <i>Acleris hyemana</i> .<br><b>Restricted distribution:</b><br>SE Dorset (Poole Basin).                                            | D Heathland<br><b>in association with</b><br>G1 Standing water & J4 Bare ground (clay)<br><b>with</b> <i>Erica cinerea</i>                                                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                             | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                                                                                                                             | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|---------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Dark guest ant</b><br><i>Anergates atratulus</i><br>(ant)        | UK BAP              | Sun-exposed, rocky or shingle coastal sites with short, sparse maritime vegetation, lowland heathlands with sparse or short vegetation and bare free-draining ground. Parasite of ant <i>Tetramorium caespitum</i> .<br><b>Restricted distribution:</b><br>S & SE England. | D Heathland<br>H3 Shingle<br>H4 Boulders/rocks<br>H5 Strandline vegetation<br>H6 Sand dune<br>H8 Maritime cliff & slope<br><b>in association with</b><br>J4 Bare ground | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Narrow-headed ant</b><br><i>Formica exsecta</i><br>(ant)         | UK BAP              | Fairly open heaths, moors, woodland rides & clearings, Caledonian forests & roadside verges with grass tussocks.<br><b>Restricted distribution:</b><br>S England & Scottish Highlands.                                                                                     | A1 Woodland<br>B Grassland<br>D Heathland<br><b>with</b> grass tussocks particularly <i>Molinia caerulea</i>                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Black-backed meadow ant</b><br><i>Formica pratensis</i><br>(ant) | UK BAP              | Dry scrubby heathland, meadows, hedgerows, grassy roadsides & occasionally woodlands. On Channel Islands scrubby cliff slopes & coast paths.<br><b>Restricted distribution:</b><br>Dorset & Channel Islands.                                                               | A1 Woodland<br>A2 Scrub<br>B Grassland<br>D1 Dry heathland<br>H8 Maritime cliff & slope<br>J2 Hedgerows                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Red barbed ant</b><br><i>Formica rufibarbis</i><br>(ant)         | UK BAP              | S-facing banks on dry heathland with sparse vegetation & acid grassland with grass tussocks.<br><b>Restricted distribution:</b><br>Surrey & Scilly Isles.                                                                                                                  | B1 Acid grassland<br>D1 Dry heathland<br>D5 Dry heath/acid grassland mosaic<br><b>with</b> grass tussocks of <i>Molinia caerulea</i> & <i>Agrostis curtisii</i>         | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Shining guest ant</b><br><i>Formicoxenus nitidulus</i><br>(ant)  | UK BAP              | Open woodland & scrub. Dependent on a host species (typically wood ants).<br><b>Restricted distribution:</b><br>Scattered in England & Scotland.                                                                                                                           | A1 Woodland<br>A2 Scrub                                                                                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Erratic ant</b><br><i>Tapinoma erraticum</i><br>(ant)            | UK BAP              | Dry, sunny sites with short or recently burnt vegetation & patches of bare ground, under stones, banks, dry peat & moss - open lowland heathland, cliff tops & moorland.<br><b>Restricted distribution:</b><br>S England & Channel Islands.                                | B1 Acid grassland<br>D1 Dry heathland<br>D5 Dry heath/acid grassland mosaic<br>H8 Maritime cliff & slope<br><b>in association with</b><br>J4 Bare ground                | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                     | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-----------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Long-spined ant</b><br><i>Temnothorax interruptus</i><br>(ant)           | UK BAP              | Warm, dry open sites with sparse cover of low-growing vegetation & coastal vegetated shingle. Nests under moss, lichen, heather, stones, fine grass roots & peat.<br><b>Restricted distribution:</b><br>Dorset, New Forest & Dungeness, Kent. | B Grassland<br>D1 Dry heathland<br>H3 Shingle<br><b>in association with</b><br>H5 Strandline vegetation<br>H8 Maritime cliff & slope                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Scarce grey flag</b><br><i>Hydropsyche bulgaromanorum</i><br>(caddisfly) | UK BAP              | Shallow, still water on stony & gravel substrate in rivers.<br><b>Restricted distribution:</b><br>River Arun, Sussex.                                                                                                                         | G2 Running water (river)<br><b>with</b> stony & gravel substrate                                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scarce brown sedge</b><br><i>Ironoquia dubia</i><br>(caddisfly)          | UK BAP              | Seasonal streams & deep slow pools with leaf litter build-up from surrounding riparian deciduous trees.<br><b>Restricted distribution:</b><br>Berkshire, Suffolk & Hampshire.                                                                 | A1.1.1 Broadleaved semi-natural woodland (riparian)<br><b>in association with</b><br>G1 Standing water (deep slow pools)<br><b>&amp;/or</b><br>G2 Running water (seasonal streams)                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Window winged sedge</b><br><i>Hagenella clathrata</i><br>(caddisfly)     | UK BAP              | Small pools in heathland & raised bogs with clumps of rushes & grass tussocks.<br><b>Restricted distribution:</b><br>NW, SE & central England & Scotland.                                                                                     | D Heathland<br>E1 Bog<br><b>in association with</b><br>G1 Standing water (small pools)<br><b>with</b> clumps of <i>Juncus</i> sp. & grass tussocks                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Small grey sedge</b><br><i>Glossosoma intermedium</i><br>(caddisfly)     | UK BAP              | Small to medium-sized streams, arising from base-rich rocks with a moderately fast current.<br><b>Restricted distribution:</b><br>Lake District.                                                                                              | G2 Running water (stream)                                                                                                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Chequered skipper</b><br><i>Carterocephalus palaemon</i><br>(butterfly)  | UK BAP              | S-facing, sheltered areas in damp grassland & woodland edges, often beside loch or river. <b>Restricted distribution:</b><br>NW Scotland.                                                                                                     | A1 Woodland (edge)<br>B5 Marsh/marshy grassland<br>G1 Standing water (loch)<br>G2 Running water <b>with</b> <i>Molinia caerulea</i>                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Lulworth skipper</b><br><i>Thymelicus action</i><br>(butterfly)          | UK BAP              | S-facing, sunny but sheltered slopes on chalk & limestone coastal grassland & undercliffs.<br><b>Restricted distribution:</b><br>Dorset.                                                                                                      | B3 Calcareous grassland<br>H8.4 Coastal grassland <b>with</b> <i>Brachypodium pinnatum</i>                                                                                                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Dingy skipper</b><br><i>Erynnis tages</i><br>(butterfly)                 | UK BAP              | Warm, open areas - S-facing chalk & limestone downland, open hillsides, railway embankments, dunes, cliffs, disused quarries, woodland edges, clearings & rides.<br><b>Distribution:</b><br>Widespread in British Isles.                      | A1 Woodland<br>B3 Calcareous grassland<br>H6 Sand dune<br>H8 Maritime cliff & slope<br>I2.1 Quarry (disused)<br>J1.3 Ephemeral/short perennial<br><b>with</b> <i>Lotus corniculatus</i> , <i>L. pedunculatus</i> & <i>Hippocrepis comosa</i> | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                                  | CONSERVATION STATUS         | HABITAT NICHE                                                                                                                                                                                                                                                                | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                                                                     | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|--------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Grizzled skipper</b><br><i>Pyrgus malvae</i><br>(butterfly)           | UK BAP                      | Warm, sheltered sites with sparse vegetation - woodland edge, rides & clearings, chalk downland, unimproved grassland on hillsides, valleys, quarries, gravel pits, railway embankments & occasionally heathland.<br><b>Restricted distribution:</b><br>Central & S England. | A1 Woodland (edge, rides & clearings)<br>B Grassland (unimproved)<br>B3 Calcareous grassland<br>D Heathland<br>I2 Artificial rock exposure & waste (quarries/gravel pits)<br><b>with</b> <i>Agrimonia eupatoria</i> , <i>Potentilla reptans</i> , <i>P. sterilis</i> , <i>P. erecta</i> , <i>Fragaria vesca</i> , <i>Rubus fruticosus</i> , <i>Rosa canina</i> , <i>Sanguisorba minor</i> & <i>Geum urbanum</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Swallowtail</b><br><i>Papilio macaon</i><br>(butterfly)               | <b>W&amp;CA<sup>1</sup></b> | Wet open fens.<br><b>Restricted distribution:</b><br>Norfolk (& Suffolk) Broads.                                                                                                                                                                                             | E3 Fen<br><b>with</b> <i>Peucedanum palustre</i>                                                                                                                                                                                                                                                                                                                                                                | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Wood white</b><br><i>Leptidea sinapis</i><br>(butterfly)              | UK BAP                      | Warm, sheltered & damp sites - woodland edge & rides, scrub, meadows & rough overgrown field edges, disused railway cuttings & coastal undercliffs.<br><b>Restricted distribution:</b><br>Central & S England & Ireland.                                                     | A1 Woodland<br>A2 Scrub<br>B Grassland<br>H8 Maritime cliff & slope<br><b>with</b> <i>Lotus corniculatus</i> , <i>L. pedunculatus</i> , <i>Lathyrus linifolius</i> , <i>L. pratensis</i> & <i>Vicia cracca</i>                                                                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Brown hairstreak</b><br><i>Thecla betulae</i><br>(butterfly)          | UK BAP                      | Hedgerows, scrub & woodland.<br><b>Restricted distribution:</b><br>S half of England, Wales & Ireland.                                                                                                                                                                       | A1 Woodland<br>A2 Scrub<br>J2 Hedgerows<br><b>with</b> <i>Prunus spinosa</i> & <i>P. domestica</i>                                                                                                                                                                                                                                                                                                              | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>White-letter hairstreak</b><br><i>Satyrion w-album</i><br>(butterfly) | UK BAP                      | Edges of deciduous woodland, hedgerows & roadside verges.<br><b>Distribution:</b><br>Widespread in England & Wales.                                                                                                                                                          | A1.1 Broadleaved woodland (edge)<br>J2.1 Intact hedge<br>J2.3 Hedge with trees<br><b>with</b> <i>Ulmus procera</i> , <i>U. minor</i> & <i>U. glabra</i>                                                                                                                                                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Small blue</b><br><i>Cupido minimus</i><br>(butterfly)                | UK BAP                      | Warm, sheltered sites - herb-rich unimproved chalk & limestone grassland, disused quarries & gravel pits, road & railway embankments, woodland rides & clearings, dunes & coastal grassland.<br><b>Restricted distribution:</b><br>Widespread but local in British Isles.    | A1 Woodland<br>B3 Calcareous grassland<br>H6 Sand dune<br>H8.4 Coastal grassland<br>I2.1 Quarry (disused/gravel pit)<br><b>with</b> <i>Anthyllis vulneraria</i>                                                                                                                                                                                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                        | CONSERVATION STATUS                                                   | HABITAT NICHE                                                                                                                                                                          | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                  |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Silver-studded blue</b><br><i>Plebejus argus</i><br>(butterfly)             | UK BAP                                                                | Warm, sheltered, S-facing sites - chalk & limestone grassland, heathland & disused sand, chalk or limestone quarries.<br><b>Restricted distribution:</b><br>S & E England & Wales.     | B3 Calcareous grassland<br>D Heathland<br>I2.1 Quarry (disused sand/chalk/limestone)<br><b>with</b> <i>Erica cinerea</i> , <i>E. tetralix</i> , <i>Calluna vulgaris</i> , <i>Helianthemum nummularium</i> , <i>Hippocrepis comosa</i> , <i>Lotus corniculatus</i> & <i>Ulex europaeus</i> . | Distribution:<br>Yes<br>Habitat Present:<br>No                                  |
| <b>Northern brown argus</b><br><i>Aricia artaxerxes</i><br>(butterfly)         | UK BAP                                                                | Sheltered, S-facing slopes or in hollows, limestone grassland, coastal valleys, quarries, outcrops & limestone pavement.<br><b>Restricted distribution:</b><br>N England & Scotland.   | B3 Calcareous grassland<br>H8 Maritime cliff & slope<br>I1.1.2 Basic inland cliff<br>I1.3 Limestone pavement<br>I2.1 Quarry (limestone)<br><b>with</b> <i>Helianthemum nummularium</i>                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A                                  |
| <b>Large blue</b><br><i>Maculinea arion</i><br>(butterfly)                     | <b>W&amp;CA<sup>1</sup></b><br><b>CH&amp;SR<sup>4</sup></b><br>UK BAP | Warm, dry unimproved acidic or limestone grassland on S-facing, close-grazed slopes.<br><b>Restricted distribution:</b><br>SW England.                                                 | B1 Acid grassland<br>B3 Calcareous grassland<br><b>with</b> <i>Thymus polytrichus</i> , <i>Origanum vulgare</i> & <i>Myrmica sabuleti</i>                                                                                                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A                                  |
| <b>Duke of Burgundy</b><br><i>Hamaeris lucina</i><br>(butterfly)               | UK BAP                                                                | Chalk & limestone grassland with light scrub & clearings in coppiced woodland.<br><b>Restricted distribution:</b><br>Central & England. Scattered in N England.                        | A1.1.1 Broadleaved semi-natural woodland (coppiced)<br>A2 Scrub<br>B3 Calcareous grassland<br><b>with</b> <i>Primula veris</i> , <i>P. vulgaris</i> & <i>P. veris</i> x <i>vulgaris</i>                                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No                                  |
| <b>White admiral</b><br><i>Limenitis camilla</i><br>(butterfly)                | UK BAP                                                                | Deciduous woodland & conifer plantations.<br><b>Restricted distribution:</b><br>Central, S & E England & E Wales.                                                                      | A1.1 Broadleaved woodland<br>A1.2 Coniferous woodland<br><b>with</b> <i>Lonicera periclymenum</i>                                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>Yes                                 |
| <b>Small pearl-bordered fritillary</b><br><i>Boloria selene</i><br>(butterfly) | UK BAP                                                                | Open areas - deciduous woodland & clearings, damp limestone grassland, scrub, cliffs, marshland & moorland.<br><b>Restricted distribution:</b><br>S, SW & N England, Wales & Scotland. | A1.1 Broadleaved woodland (clearings)<br>A2 Scrub<br>B3 Calcareous grassland<br>B5 Marsh/marshy grassland<br>C Tall herb & fern<br>D Heathland<br>H8 Maritime cliff & slope<br><b>with</b> <i>Viola riviniana</i> & <i>V. palustris</i>                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No                                  |
| <b>Pearl-bordered fritillary</b><br><i>Boloria euphrosyne</i><br>(butterfly)   | UK BAP                                                                | Open deciduous woodland & clearings, conifer plantations & limestone pavement.<br><b>Restricted distribution:</b><br>Scattered in S, SW & N England, Wales, Scotland & Ireland.        | A1.1 Broadleaved woodland (open & clearings)<br>A1.2.2 Coniferous plantation woodland<br>I1.3 Limestone pavement<br><b>with</b> <i>Viola riviniana</i> , <i>V. canina</i> & <i>V. palustris</i>                                                                                             | Distribution:<br>Yes (but possibly extinct in county)<br>Habitat Present:<br>No |

| SPECIES                                                               | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                              | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-----------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>High brown fritillary</b><br><i>Argynnis adippe</i><br>(butterfly) | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Suitably-managed woodland, rough grassland on woodland edges & limestone pavement.<br><b>Restricted distribution:</b><br>NW & SW England & Wales.                                             | A1 Woodland<br>B Grassland (unimproved)<br>I1.3 Limestone pavement<br><b>with</b> <i>Viola riviniana</i> , <i>V. canina</i> , <i>V. hirta</i> & <i>V. lactea</i>                                                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Marsh fritillary</b><br><i>Euphydryas aurinia</i><br>(butterfly)   | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Chalk grassy hillsides, damp meadows, heathland, moorland & woodland clearings.<br><b>Restricted distribution:</b><br>NW & SW England, W Wales, W Scotland & Ireland.                         | A1 Woodland<br>B1 Acid grassland<br>B3 Calcareous grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br><b>with</b> <i>Succisa pratensis</i> , <i>Knautia arvensis</i> & <i>Scabiosa columbaria</i>                                                                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Glanville fritillary</b><br><i>Melitaea cinxia</i><br>(butterfly)  | UK BAP                                | Coastal grassland (undercliffs or cliff tops) & S-facing chalk downland with regular disturbance.<br><b>Restricted distribution:</b><br>S & SW coasts England & Isle of Wight.                | B3 Calcareous grassland<br>H8.4 Coastal grassland<br><b>with</b> <i>Plantago lanceolata</i>                                                                                                                                                                                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Heath fritillary</b><br><i>Melitaea athalia</i><br>(butterfly)     | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Warm sites - heathland, rich grassland & woodland clearings.<br><b>Restricted distribution:</b><br>SW & SE England.                                                                           | A1 Woodland (clearings)<br>B Grassland<br>D Heathland<br><b>with</b> <i>Melampyrum pratense</i> , <i>Plantago lanceolata</i> , <i>Veronica chamaedrys</i> & <i>Digitalis purpurea</i>                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Wall</b><br><i>Lasiommata megera</i><br>(butterfly)                | UK BAP                                | Short unimproved grassland, coastal cliffs & dunes, hedgerows, wasteland, disused quarries, gardens, railway embankments & footpaths.<br><b>Distribution:</b><br>Widespread in British Isles. | B Grassland (unimproved)<br>H6 Sand dune<br>H8 Maritime cliff & slope<br>I2.1 Quarry (disused)<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Agrostis</i> sp., <i>Dactylis glomerata</i> , <i>Brachypodium sylvaticum</i> , <i>B. pinnatum</i> , <i>Deschampsia flexuosa</i> & <i>Holcus lanatus</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Mountain ringlet</b><br><i>Erebia ephron</i><br>(butterfly)        | UK BAP                                | Moist or boggy areas in sheltered depressions & mountain grassland.<br><b>Restricted distribution:</b><br>Lake District & central W Scotland.                                                 | B1 Acid grassland<br>D4 Montane heath<br>E Mire<br><b>with</b> <i>Nardus stricta</i>                                                                                                                                                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                      | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                                                                                                                             | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                                            | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Grayling</b><br><i>Hipparchia semele</i><br>(butterfly)                   | UK BAP              | Sheltered, sunny & dry sites with sparse vegetation & bare ground - heathland, sand dunes, calcareous grassland, coastal grassland, cliffs & disused quarries.<br><b>Restricted distribution:</b><br>Primarily coasts of UK, with some colonies inland.                                                                                   | B3 Calcareous grassland<br>D Heathland<br>H6 Sand dune<br>H8 Maritime cliff & slope<br>I2.1 Quarry (disused) <b>with</b> <i>Agrostis curtisii</i> , <i>Aira praecox</i> , <i>Festuca rubra</i> , <i>F. ovina</i> , <i>Ammophila arenaria</i> & <i>Deschampsia cespitosa</i><br>J4 Bare ground                                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Small heath</b><br><i>Coenonympha pamphilus</i><br>(butterfly)            | UK BAP              | Open sites - woodland rides, shorter grassland, heathland, railway embankments, disused quarries, meadows & sand dunes.<br><b>Distribution:</b><br>Widespread in British Isles.                                                                                                                                                           | A1 Woodland<br>A2 Scrub<br>B Grassland<br>D Heathland<br>H6 Sand dune<br>I2.1 Quarry (disused) <b>with</b> <i>Agrostis</i> , <i>Festuca</i> & <i>Poa</i> sp.                                                                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Large heath</b><br><i>Coenonympha tullia</i><br>(butterfly)               | UK BAP              | Open wet sites - lowland raised bogs, upland blanket bogs & damp acidic moorland.<br><b>Restricted distribution:</b><br>N England, Wales, Scotland & Ireland.                                                                                                                                                                             | D2 Wet heathland<br>E1 Bog<br><b>with</b> <i>Eriophorum vaginatum</i> , <i>E. angustifolium</i> , <i>Juncus articulatus</i> & <i>Erica tetralix</i>                                                                                                                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Ghost moth</b><br><i>Hepialus humuli</i><br>(moth)                        | UK BAP              | Rough meadows & grassland.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                                                                                                   | B Grassland<br><b>with</b> <i>Humulus lupulus</i> & <i>Urtica dioica</i>                                                                                                                                                                                                                                                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Goat moth</b><br><i>Cossus cossus</i><br>(moth)                           | UK BAP              | Open low-lying & damp sites – deciduous & carr woodland/edges, hedgerows, parks, gardens, road-sides, dry heathland, golf courses, riverbanks, old flooded pits, trees on floodplains & trees around arable ponds.<br><b>Restricted distribution:</b><br>Locally widespread in S half England & Wales, scattered in N England & Scotland. | A1.1/A1.3 Woodland<br>A3.1/A3.3 Parkland/ scattered trees<br>B5 Marsh/marshy grassland<br>D1 Dry heathland<br>G1 Standing water<br>G2 Running water<br>J1.1 Arable<br>J1.2 Amenity grassland<br>J2 Hedgerows<br><b>with</b> <i>Salix</i> , <i>Populus</i> , <i>Betula</i> , <i>Ulmus</i> , <i>Quercus</i> & <i>Malus</i> sp., <i>Fraxinus excelsior</i> & <i>Alnus glutinosa</i> trees | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Forester</b><br><i>Adscita statices</i><br>(moth)                         | UK BAP              | Open sites – damp grassland & meadows, chalk downland & heathland.<br><b>Restricted distribution:</b><br>Scattered in England & Wales, local in Scotland & N Ireland.                                                                                                                                                                     | B3 Calcareous grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br><b>with</b> <i>Rumex acetosa</i> & <i>R. acetosella</i> .                                                                                                                                                                                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Slender Scotch burnet</b><br><i>Zygaena loti subsp. scotica</i><br>(moth) | UK BAP              | S-facing low cliffs & grassy banks on coasts.<br><b>Restricted distribution:</b><br>Argyll, Scotland.                                                                                                                                                                                                                                     | B3 Calcareous grassland<br>H8 Maritime cliff & slope<br><b>with</b> <i>Lotus corniculatus</i>                                                                                                                                                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                           | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                     | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                         | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-----------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| New Forest burnet<br><i>Zygaena viciae</i><br><i>subsp. argyllensis</i><br>(moth) | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Steep, S-facing, herb-rich grassy slopes with rocky ledges.<br><b>Restricted distribution:</b><br>Argyll, Scotland.                                               | B Grassland (unimproved)<br>C2 Upland species-rich ledges<br><b>with</b> <i>Lotus corniculatus</i> & <i>Lathyrus pratensis</i>                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| Fiery clearwing<br><i>Pyropteron chrysidiformis</i><br>(moth)                     | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Sheltered but sunny sites beneath chalk sea cliffs & vegetated shingle beaches.<br><b>Restricted distribution:</b><br>Kent.                                       | H3 Shingle<br><b>in association with</b><br>H5 Strandline vegetation<br>H8 Maritime cliff & slope<br><b>with</b> <i>Rumex crispus</i> & <i>R. acetosa</i>                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| Pale eggar<br><i>Trichiura crataegi</i><br>(moth)                                 | UK BAP                                | Heathland, scrub, open woodland & edges, hedgerows & gardens.<br><b>Restricted distribution:</b><br>Scattered in UK.                                              | A1 Woodland (open & edge)<br>A2 Scrub<br>D Heathland<br>J2 Hedgerows<br><b>with</b> <i>Betula pubescens</i> , <i>B. pendula</i> , <i>Crataegus monogyna</i> , <i>Prunus spinosa</i> , <i>Erica</i> sp. & <i>Vaccinium myrtillus</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| Lackey<br><i>Malacosoma neustria</i><br>(moth)                                    | UK BAP                                | Open woodland & scrub, waste ground, hedgerows & gardens.<br><b>Restricted distribution:</b><br>Mainly S half England & Wales, scattered in N England & Scotland. | A1 Woodland (open)<br>A2 Scrub<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Crataegus monogyna</i> , <i>Prunus spinosa</i> & <i>Rosa</i> sp.                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| Oak hook-tip<br><i>Watsonalla binaria</i><br>(moth)                               | UK BAP                                | Oak woodland, parkland, hedgerows & gardens.<br><b>Restricted distribution:</b><br>Mainly England & Wales. Rare in Scotland.                                      | A1.1 Broadleaved woodland<br>A3.1 Broadleaved parkland/scattered trees<br>J2 Hedgerows<br><b>with</b> <i>Quercus petraea</i> & <i>Q. robur</i>                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| Oak lutestring<br><i>Cymatophorima diluta</i><br>(moth)                           | UK BAP                                | Mature oak woodland.<br><b>Restricted distribution:</b><br>Mainly S half of England & Wales, scattered in N England & Scotland.                                   | A1.1.1 Broadleaved semi-natural woodland<br><b>with</b> <i>Quercus petraea</i> & <i>Q. robur</i>                                                                                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| Rest harrow<br><i>Aplasta ononaria</i><br>(moth)                                  | UK BAP                                | Calcareous grassland on coast & sand dunes.<br><b>Restricted distribution:</b><br>S & SE coasts England.                                                          | B3 Calcareous grassland<br>H6 Sand dune<br>H8.4 Coastal grassland<br><b>with</b> <i>Ononis repens</i>                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| Essex emerald<br><i>Thetidia smaragdaria</i><br>(moth)                            | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Saltmarshes & estuaries.<br><b>Restricted distribution:</b><br>Formerly Thames estuary, Essex & N Kent. Thought extinct.                                          | G2.6 Brackish running water<br>H2 Saltmarsh<br><b>with</b> <i>Seriphidium maritimum</i>                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| Sussex emerald<br><i>Thalera fimbrialis</i><br>(moth)                             | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Shingle beaches.<br><b>Restricted distribution:</b><br>Kent. Sometimes occurs as migrant on S coast.                                                              | H3 Shingle<br><b>with</b> <i>Achillea millefolium</i> & <i>Daucus carota</i>                                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                       | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Small emerald</b><br><i>Hemistola chrysoprasaria</i><br>(moth)             | UK BAP              | Woodland edges & hedgerows on chalk downs & limestone.<br><b>Restricted distribution:</b><br>Mainly S half of England & Wales, scattered in N England & Scotland.                                                                                | A1 Woodland<br>(on calcareous ground)<br>B3 Calcareous grassland<br>J2 Hedgerows<br><b>with</b> <i>Clematis vitalba</i>                                                                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Dingy mocha</b><br><i>Cyclophora pendularia</i><br>(moth)                  | UK BAP              | Damp neutral grassland, limestone & chalk grassland & downland, Breck grassland, sandy heathland, sand dunes, scrub, woodland rides & clearings.<br><b>Restricted distribution:</b><br>Mainly S England & S Wales, scattered in central England. | A1 Woodland<br>(rides & clearings)<br>A2 Scrub<br>B1 Acid grassland<br>B2 Neutral grassland<br>B3 Calcareous grassland<br>D Heathland<br>H6 Sand dune<br><b>with</b> <i>Salix</i> sp.<br>particularly <i>S. aurita</i> & <i>S. cinerea</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>False mocha</b><br><i>Cyclophora porata</i><br>(moth)                      | UK BAP              | Scrubby oak woodland, coppiced woodland & woodland clearings.<br><b>Restricted distribution:</b><br>Scattered in S half of England, Wales & rare in Scotland.                                                                                    | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br><b>with</b> <i>Quercus</i> sp.<br>particularly <i>Q. robur</i>                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Blood-vein</b><br><i>Timandra comae</i><br>(moth)                          | UK BAP              | Marshes, riverbanks, damp meadows & gardens.<br><b>Restricted distribution:</b><br>Widespread in England & Wales, scarce in Scotland.                                                                                                            | B5 Marsh/marshy grassland<br>G2 Running water<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Atriplex</i> & <i>Rumex</i> sp. & <i>Polygonum aviculare</i>                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Mullein wave</b><br><i>Scopula marginepunctata</i><br>(moth)               | UK BAP              | Chalk grassland & saltmarshes on coast.<br><b>Restricted distribution:</b><br>Coasts of UK.<br>Commoner in S half England.                                                                                                                       | B3 Calcareous grassland<br>H2 Saltmarsh<br><b>with</b> <i>Achillea millefolium</i> , <i>Artemisia vulgaris</i> , <i>Hippocrepis comosa</i> , <i>Origanum vulgare</i> & <i>Teucrium scorodonia</i>                                          | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Bright wave</b><br><i>Idaea ochrata</i><br><i>subsp. cantata</i><br>(moth) | UK BAP              | Sandy coastal sites - sand dunes, vegetated shingle beaches & golf courses.<br><b>Restricted distribution:</b><br>SE England.<br>Sometimes occurs as migrant on S coast.                                                                         | H3 Shingle<br>H6 Sand dune<br>J1.2 Amenity grassland<br><b>with</b> <i>Crepis</i> , <i>Taraxacum</i> & <i>Tussilago</i> sp., <i>Vicia tetrasperma</i> & <i>Trifolium arvense</i>                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Silky wave</b><br><i>Idaea dilutaria</i><br>(moth)                         | UK BAP              | Limestone cliffs & downs with scrub.<br><b>Restricted distribution:</b><br>Scattered in England & Wales.                                                                                                                                         | A2 Scrub<br>B3 Calcareous grassland<br>H8 Maritime cliff & slope<br><b>with</b> <i>Helianthemum mummularium</i>                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                      | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                              | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Oblique carpet</b><br><i>Orthonama vittata</i><br>(moth)                  | UK BAP              | Marshy & damp sites - fens, water meadows, damp woodland, marshes & riverbanks.<br><b>Distribution:</b><br>Widespread but scattered in UK.                                                       | A1 Woodland (carr)<br>B5 Marsh/marshy grassland<br>E3 Fen<br>F Swamp, marginal & inundation<br>G2 Running water<br><b>with</b> <i>Gallium saxatile</i> & <i>G. palustre</i>                                                              | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Red carpet</b><br><i>Xanthorhoe decoloraria</i><br>(moth)                 | UK BAP              | Upland moorland & rocky hillsides up to 900 m above sea level.<br><b>Restricted distribution:</b><br>Scattered in UK, commoner in N Britain.                                                     | C2 Upland species-rich ledges<br>D4 Montane heath/dwarf shrub<br><b>with</b> <i>Alchemilla glabra</i>                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Dark-barred twin-spot carpet</b><br><i>Xanthorhoe ferrugata</i><br>(moth) | UK BAP              | Gardens, woodland, hedgerows, downs, fens, moors & sand dunes.<br><b>Distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland.                                      | A1 Woodland<br>B Grassland<br>D Heathland<br>E3 Fen<br>F Swamp, marginal & inundation<br>H6 Sand dune<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Galium</i> & <i>Rumex</i> sp. & <i>Glechoma hederacea</i>        | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Chalk carpet</b><br><i>Scotopteryx bipunctaria</i><br>(moth)              | UK BAP              | Chalk downland, limestone hills, sea cliffs & quarries with broken or bare ground.<br><b>Restricted distribution:</b><br>Mainly S England & S Wales, scattered in central & N England & N Wales. | B3 Calcareous grassland<br>H8 Maritime cliff & slope<br>I2.1 Quarry (limestone)<br>J4 Bare ground (chalk)<br><b>with</b> <i>Lotus corniculatus</i> , <i>Trifolium arvense</i> , <i>T. pratense</i> , <i>T. repens</i> & <i>Vicia</i> sp. | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Shaded broad-bar</b><br><i>Scotopteryx chenopodiata</i><br>(moth)         | UK BAP              | Calcareous grassland, acid heath, woodland rides, roadside verges, sand dunes & gardens.<br><b>Distribution:</b><br>Widespread in UK.                                                            | A1 Woodland (rides)<br>B3 Calcareous grassland<br>D1 Dry heathland<br>H6 Sand dune<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Trifolium arvense</i> , <i>T. pratense</i> , <i>T. repens</i> & <i>Vicia</i> sp.                    | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Galium carpet</b><br><i>Epirrhoe galiata</i><br>(moth)                    | UK BAP              | Mostly coastal - lime & chalk downland, grassy heathland, sea cliffs, sand dunes & shingle.<br><b>Distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland.         | B3 Calcareous grassland<br>D Heathland<br>H3 Shingle<br>H6 Sand dune<br>H8 Maritime cliff & slope<br><b>with</b> <i>Gallium saxatile</i> , <i>G. mollugo</i> & <i>G. verum</i>                                                           | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Grey mountain carpet</b><br><i>Entephria caesiata</i><br>(moth)           | UK BAP              | Mountains & moorland where stone walls & rocks.<br><b>Restricted distribution:</b><br>Mainly Midlands, N England, Wales, Scotland & N Ireland. Scattered in S & central England.                 | B1 Acid grassland<br>D Heathland<br>I1 Natural rock exposure<br>J2.5 Stone wall<br><b>with</b> <i>Calluna vulgaris</i> & <i>Vaccinium myrtillus</i>                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                             | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                             | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Dark spinach</b><br><i>Pelurga comitata</i><br>(moth)            | UK BAP                                | Suburban habitats - rough & waste ground, weedy sites, gardens & allotments. Also scrub, grassland, woodland & fens.<br><b>Distribution:</b> Widespread in England, scattered in Wales, Scotland & N Ireland. | A1 Woodland<br>A2 Scrub<br>B Grassland<br>C3.1 Tall ruderal<br>E3 Fen<br>F Swamp, marginal & inundation<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Atriplex</i> & <i>Chenopodium</i> sp.                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Spinach</b><br><i>Eulithis mellinata</i><br>(moth)               | UK BAP                                | Suburban habitats - gardens & allotments. Also rough grassland, scrub & woodland.<br><b>Distribution:</b> Widespread in England & Wales, scattered in Scotland.                                               | A1 Woodland<br>A2 Scrub<br>B Grassland<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Ribes nigrum</i> & <i>R. rubrum</i>                                                                                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Small phoenix</b><br><i>Ecliptopera silaceata</i><br>(moth)      | UK BAP                                | Open sites - woodland rides, hedgerows, fens, gardens, calcareous grassland, heathland, allotments & roadside verges.<br><b>Distribution:</b> Widespread in UK.                                               | A1 Woodland (rides)<br>B Grassland<br>B3 Calcareous grassland<br>C3.1 Tall ruderal<br>D Heathland<br>E3 Fen<br>F Swamp, marginal & inundation<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Epilobium montanum</i> , <i>E. hirsutum</i> , <i>Circaea lutetiana</i> & <i>Chamerion angustifolium</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Netted carpet</b><br><i>Eustroma reticulatum</i><br>(moth)       | UK BAP                                | Shady locations - damp open woodlands & stream-sides.<br><b>Restricted distribution:</b> Lake District.                                                                                                       | A1 Woodland (damp) <b>in association with</b><br>G2 Running water<br><b>with</b> <i>Impatiens noli-tangere</i>                                                                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Pretty chalk carpet</b><br><i>Melanthia procellata</i><br>(moth) | UK BAP                                | Woodlands, scrub, gardens & hedgerows on calcareous soils.<br><b>Restricted distribution:</b> Mainly S half England & Wales, scattered in N & central England.                                                | A1 Woodland<br>A2 Scrub<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>in association with</b> calcareous soil<br><b>with</b> <i>Clematis vitalba</i>                                                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Barberry carpet</b><br><i>Pareulype berberata</i><br>(moth)      | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Hedgerows in open areas & woodland edge.<br><b>Restricted distribution:</b> Mainly England, scattered in E England & S Wales.                                                                                 | A1 Woodland (edge)<br>J2 Hedgerows<br><b>with</b> <i>Berberis vulgaris</i>                                                                                                                                                                                                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Argent &amp; sable</b><br><i>Rheumaptera hastata</i><br>(moth)   | UK BAP                                | Damp & boggy moorland & hillsides, fens & coppiced deciduous woodland.<br><b>Distribution:</b> Widespread but scattered in UK.                                                                                | A1.1 Broadleaved woodland (coppiced & carr)<br>D2 Wet heathland<br>E Mire<br><b>with</b> <i>Myrica gale</i> , <i>Betula pendula</i> , <i>B. pubescens</i> & <i>Salix</i> sp.                                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                              | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                                                            | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|--------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Grass rivulet</b><br><i>Perizoma albulata</i><br><i>subsp. albulata</i><br>(moth) | UK BAP              | Open, dry, lowland sites - calcareous grassland, limestone hill, sandy or shingle beaches & dune slacks. Also some moorland areas & wet meadows.<br><b>Distribution:</b><br>Widespread in UK. | B1 Acid grassland<br>B2 Neutral grassland<br>B3 Calcareous grassland<br>B5 Marsh/marshy grassland<br>H3 Shingle<br>H6 Sand dune<br><b>with</b> <i>Rhinanthus minor</i> | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Scarce pug</b><br><i>Eupithecia extensaria</i><br><i>subsp. occidue</i><br>(moth) | UK BAP              | Saltmarshes.<br><b>Restricted distribution:</b><br>E England.                                                                                                                                 | H2 Saltmarsh<br><b>with</b> <i>Seriphidium maritimum</i>                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Streak</b><br><i>Chesias legatella</i><br>(moth)                                  | UK BAP              | Grassland, heathland, moorland, hedgerows, gardens, scrub & open woodland.<br><b>Distribution:</b><br>Widespread in UK.                                                                       | A1 Woodland (open)<br>A2 Scrub<br>B1 Acid grassland<br>D Heathland<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Cytisus scoparius</i>             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Broom-tip</b><br><i>Chesias rufata</i><br>(moth)                                  | UK BAP              | Heathland, moorland, open woodland, roadside verges & scrubby embankments.<br><b>Restricted distribution:</b><br>Scattered in England, Wales & Scotland.                                      | A1 Woodland (open)<br>A2 Scrub<br>B1 Acid grassland<br>D Heathland<br><b>with</b> <i>Cytisus scoparius</i>                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Grey carpet</b><br><i>Lithostege griseata</i><br>(moth)                           | UK BAP              | Dry stony habitats of Breckland - grassland, scrub, farmland, waste ground & roadside verges.<br><b>Restricted distribution:</b><br>East Anglia & Yorkshire.                                  | A2 Scrub<br>B Grassland<br>D Heathland<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Descurainia sophia</i><br>& possibly <i>Erysimum cheiranthoides</i>           | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Drab looper</b><br><i>Minoa murinata</i><br>(moth)                                | UK BAP              | Ancient deciduous woodland, woodland clearings, rides & coppice.<br><b>Restricted distribution:</b><br>S England & Wales.                                                                     | A1.1.1 Broadleaved semi-natural woodland (ancient, clearings, rides & coppice)<br><b>with</b> <i>Euphorbia amygdaloides</i>                                            | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Barred tooth-striped</b><br><i>Trichopteryx polycommata</i><br>(moth)             | UK BAP              | Chalk downland, scrub, hedgerows & open woodland.<br><b>Restricted distribution:</b><br>Scattered in England, Wales & Scotland.                                                               | A1 Woodland (open)<br>A2 Scrub<br>B3 Calcareous grassland<br>J2 Hedgerows<br><b>with</b> <i>Fraxinus excelsior</i><br>& <i>Ligustrum vulgare</i>                       | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Netted mountain moth</b><br><i>Macaria carbonaria</i><br>(moth)                   | UK BAP              | Moorlands & mountains.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                                                                                              | D Heathland<br>D4 Montane heath<br><b>with</b> <i>Arctystophylos uva-ursi</i>                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>V-moth</b><br><i>Macaria wauaria</i><br>(moth)                                    | UK BAP              | Gardens, allotments & cultivated areas with fruit bushes.<br><b>Distribution:</b><br>Widespread but scattered in UK.                                                                          | J1 Cultivated/disturbed land<br><b>with</b> <i>Ribes</i> sp.<br>particularly <i>R. rubrum</i> ,<br><i>R. nigrum</i> & <i>R. uva-crispa</i>                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                            | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                                                                                                   | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|--------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Latticed heath</b><br><i>Chiasmia clathrata</i><br>(moth)       | UK BAP              | Open sites - waste ground, farmland, acid heathland, moorland & calcareous grassland.<br><b>Distribution:</b><br>Widespread in UK.                                      | B3 Calcareous grassland<br>D1 Dry heathland<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Medicago sativa</i> ,<br><i>Lotus corniculatus</i> ,<br><i>Trifolium repens</i> , <i>T. pratense</i> & <i>T. arvense</i>                                                                                                                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Dark bordered beauty</b><br><i>Epione vespertaria</i><br>(moth) | UK BAP              | Open & damp scrubby heathland & grassland, near tall trees or woodland.<br><b>Restricted distribution:</b><br>N England & Scotland.                                     | A1 Woodland (carr)<br>A2 Scrub<br>D2 Wet heathland<br>D6 Wet heath/acid grassland mosaic<br><b>with</b> <i>Salix repens</i> & <i>Populus tremula</i>                                                                                                                                                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>August thorn</b><br><i>Ennomos quercinaria</i><br>(moth)        | UK BAP              | Woodland & suburban habitats - parks, scrub, gardens & hedgerows.<br><b>Distribution:</b><br>Mainly England & Wales, scattered in Scotland & N Ireland.                 | A1 Woodland<br>A3 Parkland/scattered trees<br>A2 Scrub<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Fagus sylvatica</i> ,<br><i>Quercus petraea</i> & <i>Q. robur</i>                                                                                                                                                                                                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Dusky thorn</b><br><i>Ennomos fuscantaria</i><br>(moth)         | UK BAP              | Deciduous woodlands, hedgerows & gardens.<br><b>Distribution:</b><br>Widespread in England & Wales.                                                                     | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Fraxinus excelsior</i>                                                                                                                                                                                                                                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>September thorn</b><br><i>Ennomos erosaria</i><br>(moth)        | UK BAP              | Woodland, parkland, gardens & hedgerows.<br><b>Restricted distribution:</b><br>Mainly England & Wales, scattered in Scotland.                                           | A1 Woodland<br>A3 Parkland/scattered trees<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Fagus sylvatica</i> ,<br><i>Betula pubescens</i> , <i>B. pendula</i> , <i>Quercus</i> & <i>Tilia</i> sp.                                                                                                                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Brindled beauty</b><br><i>Lycia hirtaria</i><br>(moth)          | UK BAP              | Broadleaved woodland, scrub, parks, gardens & hedgerows.<br><b>Distribution:</b><br>Widespread in S half England, Wales & Scotland, scattered in N England & N Ireland. | A1.1 Broadleaved woodland<br>A3.1 Broadleaved parkland/scattered trees<br>A2 Scrub<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Alnus glutinosa</i> ,<br><i>Quercus ilex</i> , <i>Q. robur</i> ,<br><i>Betula pubescens</i> , <i>B. pendula</i> , <i>Crataegus monogyna</i> , <i>C. laevigata</i> ,<br><i>Tilia platyphyllos</i> , <i>T. cordata</i> , <i>T. europaea</i> ,<br><i>Ulmus procera</i> & <i>U. glabra</i> . | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                                             | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Belted beauty</b><br><i>Lycia zonaria</i><br><i>subsp. britannica</i><br>(moth)  | UK BAP                                | Coastal sand dunes & hills, coastal grassland & golf courses.<br><b>Restricted distribution:</b><br>NW England, N Wales & W Scotland.                 | B1 Acid grassland<br>B3 Calcareous grassland<br>H6 Sand dune<br>J1.2 Amenity grassland<br><b>with</b> <i>Salix repens</i> , <i>Rosa pimpinellifolia</i> , <i>Lotus corniculatus</i> , <i>Anthyllis vulneraria</i> , <i>Achillea millefolium</i> , <i>Iris pseudacorus</i> , <i>Trifolium</i> & <i>Plantago</i> sp. | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Sloe carpet</b><br><i>Aleucis distinctata</i><br>(moth)                          | UK BAP                                | Woodland, hedgerows, scrub, farmland & damp heathland.<br><b>Restricted distribution:</b><br>S & SE England.                                          | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>A2 Scrub<br>D2 Wet heathland<br>J1.1 Arable<br>J2 Hedgerows<br><b>with</b> <i>Prunus spinosa</i>                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Black-veined moth</b><br><i>Siona lineata</i><br>(moth)                          | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Long, herb-rich unimproved chalk grassland with tussocks of tall grass.<br><b>Restricted distribution:</b><br>Kent.                                   | B3.1 Unimproved calcareous grassland<br><b>with</b> <i>Centaurea nigra</i> , <i>Lotus corniculatus</i> , <i>Origanum vulgare</i> & <i>Brachypodium pinnatum</i>                                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Straw belle</b><br><i>Aspitates gilvaria</i><br><i>subsp. gilvaria</i><br>(moth) | UK BAP                                | Chalk downland, limestone hills & limestone quarries.<br><b>Restricted distribution:</b><br>Kent & Surrey.                                            | B3.1 Unimproved calcareous grassland<br>I2.1 Quarry (limestone)<br><b>with</b> <i>Potentilla reptans</i> , <i>Achillea millefolium</i> , <i>Pastinaca sativa</i> , <i>Lotus corniculatus</i> , <i>Thymus polytrichus</i> , <i>Medicago lupulina</i> , <i>Veronica serpyllifolia</i> & <i>Linum catharticum</i>     | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Narrow-bordered bee hawk-moth</b><br><i>Hemaris tityus</i><br>(moth)             | UK BAP                                | Marshy woodland, damp acid pasture or moorland & unimproved chalk downland.<br><b>Restricted distribution:</b><br>Widespread but scarce in UK.        | A1 Woodland (carr)<br>B1 Acid grassland<br>B3.1 Unimproved calcareous grassland<br>B5 Marsh/marshy grassland<br>D2 Wet heathland<br>D6 Wet heath/acid grassland mosaic<br><b>with</b> <i>Succisa pratensis</i> , <i>Knautia arvensis</i> & <i>Scabiosa columbaria</i>                                              | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Figure of eight</b><br><i>Diloba caeruleocephala</i><br>(moth)                   | UK BAP                                | Woodland clearings, scrub, old mature hedgerows & gardens.<br><b>Distribution:</b><br>Widespread in England & Wales, scarcer in Scotland & N Ireland. | A1 Woodland (clearings)<br>A3 Parkland/scattered trees (orchard)<br>A2 Scrub<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Prunus spinosa</i> , <i>Crataegus</i> , <i>Malus</i> & <i>Rosa</i> sp.                                                                                              | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                                                   | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Scarce vapourer</b><br><i>Orgyia recens</i><br>(moth)                                  | UK BAP              | Sandy heathland, damp woodland, rides & clearings, fens, bogs, damp neutral grassland, limestone grassland, chalk downland, Breck grassland & sand dunes.<br><b>Restricted distribution:</b><br>NE & E England. | A1 Woodland (damp, rides & clearings)<br>B Grassland<br>D Heathland<br>E Mire<br>H6 Sand dune<br><b>with</b> <i>Crataegus monogyna</i> , <i>Frangula alnus</i> , <i>Prunus spinosa</i> , <i>Corylus avellanarius</i> , <i>Betula</i> , <i>Erica</i> , <i>Quercus</i> , <i>Rosa</i> , <i>Rumex</i> & <i>Salix</i> sp., <i>Rubus fruticosus</i> , <i>Filipendula ulmaria</i> & <i>Chamerion angustifolium</i> | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Speckled footman</b><br><i>Coscinia cribraria</i><br><i>subsp. bivittata</i><br>(moth) | UK BAP              | Heathland.<br><b>Restricted distribution:</b><br>Dorset.                                                                                                                                                        | D Heathland<br><b>with</b> <i>Calluna vulgaris</i> , <i>Agrostis curtisii</i> , <i>Erica tetralix</i> , <i>E. cinerea</i> & <i>Vaccinium myrtillus</i>                                                                                                                                                                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Garden tiger</b><br><i>Arctia caja</i><br>(moth)                                       | UK BAP              | Damp meadows, scrub, gardens, parks, open woodland, sand dunes, fens & waste ground.<br><b>Distribution:</b><br>Widespread in UK.                                                                               | A1 Woodland (open)<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B Grassland<br>E3 Fen<br>H6 Sand dune<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Arctium lappa</i> , <i>A. minus</i> , <i>Urtica dioica</i> & <i>Rumex obtusifolius</i>                                                                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>White ermine</b><br><i>Spilosoma lubricipeda</i><br>(moth)                             | UK BAP              | Gardens, hedgerows, grassland, heathland, moorland, woodland, scrub & fens.<br><b>Distribution:</b><br>Widespread in UK.                                                                                        | A1 Woodland<br>A2 Scrub<br>B Grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Rumex crispus</i> , <i>R. obtusifolius</i> & <i>Urtica dioica</i>                                                                                                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Buff ermine</b><br><i>Spilosoma luteum</i><br>(moth)                                   | UK BAP              | Gardens, hedgerows, parkland, woodland, heathland, grassland, fens & scrub.<br><b>Distribution:</b><br>Widespread in UK.                                                                                        | A1 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B Grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Humulus lupulus</i> , <i>Lonicera periclymenum</i> , <i>Prunus domestica</i> & <i>Urtica dioica</i>                                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Cinnabar</b><br><i>Tyria jacobaeae</i><br>(moth)                                       | UK BAP              | Grassland, sand dunes, heathland, gardens, waste ground, railway embankments & woodland rides.<br><b>Distribution:</b><br>Widespread in UK.                                                                     | A1 Woodland (rides)<br>B Grassland<br>D Heathland<br>H6 Sand dune<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Senecio jacobaea</i> & occasionally other <i>Senecio</i> sp.                                                                                                                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                         | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>White-line dart</b><br><i>Euxoa tritici</i><br>(moth)        | UK BAP              | Sand dunes, sea cliffs, moorland, heathland, open woodland & downland.<br><b>Distribution:</b><br>Widespread in UK.                                                                | A1 Woodland (open)<br>B1 Acid grassland<br>B3 Calcareous grassland<br>D Heathland<br>H6 Sand dune<br>H8 Maritime cliff & slope<br><b>with</b> <i>Galium verum</i> , <i>G. mollugo</i> , <i>Cerastium fontanum</i> , <i>Stellaria media</i> & <i>S. holostea</i>                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Garden dart</b><br><i>Euxoa nigricans</i><br>(moth)          | UK BAP              | Gardens, allotments, farmland, downland & waste ground.<br><b>Distribution:</b><br>Widespread in UK.                                                                               | B Grassland<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Trifolium pratense</i> , <i>Plantago major</i> , <i>P. lanceolata</i> & <i>Rumex</i> sp.                                                                                                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Lunar yellow underwing</b><br><i>Noctua orbona</i><br>(moth) | UK BAP              | Open, dry, sandy heathland or calcareous grassland & open grassy areas within woodland.<br><b>Restricted distribution:</b><br>Mainly S & E England, scattered in Wales & Scotland. | A1 Woodland<br>B1 Acid grassland<br>B3 Calcareous grassland<br>D1 Dry heathland<br><b>with</b> <i>Stellaria media</i> , <i>Dactylis glomerata</i> , <i>Elytrigia repens</i> , <i>Primula veris</i> , <i>Potentilla reptans</i> , <i>Ranunculus acris</i> , <i>Deschampsia flexuosa</i> , <i>Phalaris arundinacea</i> & <i>Festuca ovina</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Double dart</b><br><i>Graphiphora augur</i><br>(moth)        | UK BAP              | Broadleaved woodland, scrub, parks, marshes, riverbanks, hedgerows, fens & gardens.<br><b>Distribution:</b><br>Widespread in UK.                                                   | A1.1 Broadleaved woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B5 Marsh/marshy grassland<br>E3 Fen<br>F Swamp, marginal & inundation<br>G2 Running water<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Prunus spinosa</i> , <i>Betula</i> , <i>Crataegus</i> & <i>Salix</i> sp. & <i>Rumex obtusifolius</i>    | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Cousin German</b><br><i>Protolampra sobrina</i><br>(moth)    | UK BAP              | Birch & pine woodland & scrub.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                                                                           | A1 Woodland<br>A2 Scrub<br><b>with</b> <i>Vaccinium myrtillus</i> , <i>Salix auritus</i> , <i>Erica</i> & <i>Betula</i> sp.                                                                                                                                                                                                                 | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Autumnal rustic</b><br><i>Eugnorisma glareosa</i><br>(moth)  | UK BAP              | Sandy or chalky soils - woodland fringes, rough grassland, heathland, moorland & downland.<br><b>Distribution:</b><br>Widespread in UK.                                            | A1 Woodland (fringes)<br>B1 Acid grassland<br>B3 Calcareous grassland<br>D Heathland<br><b>with</b> <i>Betula pendula</i> , <i>B. pubescens</i> , <i>Calluna vulgaris</i> , <i>Erica cinerea</i> & <i>Hyacinthoides non-scripta</i>                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                                 | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                        | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Small square-spot</b><br><i>Diarsia rubi</i><br>(moth)               | UK BAP              | Wet woodland, grassland, marshes, scrub, hedgerows, fens, gardens, heathland & rough meadows.<br><b>Distribution:</b><br>Widespread in UK.                                           | A1 Woodland (carr)<br>A2 Scrub<br>B Grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Calluna vulgaris</i> ,<br><i>Rumex</i> & <i>Taraxacum</i> sp.<br>& <i>Digitalis purpurea</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Ashworth's rustic</b><br><i>Xestia ashworthii</i><br>(moth)          | UK BAP              | Slate & limestone grassland on hills & mountains.<br><b>Restricted distribution:</b><br>N Wales.                                                                                     | B3 Calcareous grassland<br>C2 Upland species-rich ledges<br>D4 Montane heath/dwarf herb<br><b>with</b> <i>Helianthemum chamaecistus</i> , <i>Calluna</i> sp. & <i>Digitalis purpurea</i>                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Neglected rustic</b><br><i>Xestia castanea</i><br>(moth)             | UK BAP              | Heathland, moorland & bogs.<br><b>Restricted distribution:</b><br>Scattered & local in UK.                                                                                           | D Heathland<br>E1 Bog<br><b>with</b> <i>Calluna vulgaris</i> ,<br><i>Erica cinerea</i> & <i>E. tetralix</i>                                                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Heath rustic</b><br><i>Xestia agathina</i><br>(moth)                 | UK BAP              | Acid heathland & moorland.<br><b>Restricted distribution:</b><br>Scattered & local in UK.                                                                                            | D Heathland<br><b>with</b> <i>Calluna vulgaris</i>                                                                                                                                                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Small dark yellow underwing</b><br><i>Anarta cordigera</i><br>(moth) | UK BAP              | Moorland & rocky areas on mountains at altitudes of 200-600 m.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                                             | C2 Upland species-rich ledges<br>D4 Montane heath/dwarf herb<br>I1 Natural rock exposure<br><b>with</b> <i>Arctostaphylos uva-ursi</i>                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Pale shining brown</b><br><i>Polia bombycina</i><br>(moth)           | UK BAP              | Rough or scrubby grassland & downland & open woodland on chalk or limestone soils.<br><b>Restricted distribution:</b><br>Mainly S half England.                                      | A1 Woodland (open)<br>A2 Scrub<br>B3 Calcareous grassland                                                                                                                                                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Bordered gothic</b><br><i>Heliophobus reticulata</i><br>(moth)       | UK BAP              | Chalk downland, Breck & limestone grassland, sea cliffs, sand dunes, heathland, waste ground, limestone quarries & embankments.<br><b>Restricted distribution:</b><br>S & E England. | B3 Calcareous grassland<br>D Heathland<br>H6 Sand dune<br>H8 Maritime cliff & slope<br>I2.1 Quarry (limestone)<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Polygonum aviculare</i> , <i>Saponaria officinalis</i> & <i>Silene vulgaris</i>                   | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                       | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                                     | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|---------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Dot moth</b><br><i>Melanchra persicariae</i><br>(moth)     | UK BAP              | Woodland, gardens, waste ground, roadside verges & hedgerows.<br><b>Distribution:</b> Widespread in England & Wales, scarcer in Scotland & N Ireland.        | A1 Woodland<br>B Grassland<br>C3.1 Tall ruderal<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Convolvulus arvensis</i> , <i>Sambucus nigra</i> , <i>Humulus lupulus</i> , <i>Rumex obtusifolius</i> , <i>Ribes nigrum</i> , <i>Senecio vulgaris</i> , <i>Trifolium repens</i> , <i>Corylus avellana</i> , <i>Hedera helix</i> & <i>Urtica dioica</i>        | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Broom moth</b><br><i>Melanchra pisi</i><br>(moth)          | UK BAP              | Open woodland, scrub, moorland, heathland, grassland & gardens.<br><b>Distribution:</b> Widespread in UK.                                                    | A1 Woodland (open)<br>A2 Scrub<br>B Grassland<br>D Heathland<br>H8 Maritime cliff & slope<br><b>with</b> <i>Cytisus scoparius</i> , <i>Hippophae rhamnoides</i> , <i>Pteridium aquilinum</i> , <i>Calluna vulgaris</i> , <i>Rubus fruticosus</i> & <i>Salix</i> sp.                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>White spot</b><br><i>Hadena albimacula</i><br>(moth)       | UK BAP              | Shingle beaches & chalk or limestone sea-cliffs.<br><b>Restricted distribution:</b> S coast of England.                                                      | H3 Shingle<br>H8 Maritime cliff & slope<br><b>with</b> <i>Silene nutans</i>                                                                                                                                                                                                                                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Hedge rustic</b><br><i>Tholera cespitis</i><br>(moth)      | UK BAP              | Open, rough acid grassland, heathland, open woodland & fens.<br><b>Restricted distribution:</b> Scattered in UK.                                             | A1 Woodland (open)<br>B1 Acid grassland<br>D Heathland<br>E3 Fen<br><b>with</b> <i>Nardus stricta</i> & <i>Deschampsia flexuosa</i>                                                                                                                                                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Feathered gothic</b><br><i>Tholera decimalis</i><br>(moth) | UK BAP              | Rough grassland, scrub, downland, woodland edges, parks & gardens.<br><b>Distribution:</b> Widespread in England & Wales, scattered in Scotland & N Ireland. | A1 Woodland (edges)<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B Grassland<br>J1 Cultivated/disturbed land<br><b>with</b> grasses particularly <i>Nardus stricta</i> & <i>Festuca ovina</i>                                                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Powdered quaker</b><br><i>Orthosia gracilis</i><br>(moth)  | UK BAP              | Marshes, damp woodland, fens, heathland & gardens.<br><b>Distribution:</b> Widespread in UK.                                                                 | A1 Woodland (damp)<br>B5 Marsh/marshy grassland<br>D Heathland<br>E3 Fen<br>F Swamp, marginal & inundation<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Salix cinerea</i> , <i>S. aurita</i> , <i>S. caprea</i> , <i>Myrica gale</i> , <i>Prunus spinosa</i> , <i>Pulicaria dysenterica</i> , <i>Populus nigra</i> , <i>Lythrum salicaria</i> & <i>Filipendula ulmaria</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                              | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|----------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Shoulder-striped wainscot</b><br><i>Mythimna comma</i><br>(moth)  | UK BAP              | Damp woodland, fens, grassland, marshes & gardens.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                 | A1 Woodland (damp)<br>B Grassland<br>B5 Marsh/marshy grassland<br>E3 Fen<br>J1 Cultivated/disturbed land<br><b>with</b> grasses particularly <i>Dactylis glomerata</i>                                                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Striped lychnis</b><br><i>Shargacucullia lychnitis</i><br>(moth)  | UK BAP              | Unshaded sites - rough downland, calcareous grassland, roadside verges, field margins, embankments, woodland rides & clearings.<br><b>Restricted distribution:</b><br>S England.                | A1 Woodland (rides & clearings)<br>B Grassland<br>B3 Calcareous grassland<br>C3.1 Tall ruderal<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Verbascum nigrum</i><br><i>V. thapsus</i> & <i>V. lychnitis</i>                                                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Minor shoulder-knot</b><br><i>Brachylomia viminalis</i><br>(moth) | UK BAP              | Damp woodland, heaths, fens, marshes, river valleys & gardens.<br><b>Distribution:</b><br>Widespread in S half of England & Wales, scattered in N England, Scotland & N Ireland.                | A1 Woodland (carr)<br>B5 Marsh/marshy grassland<br>D Heathland<br>G2 Running water<br>E3 Fen<br><b>with</b> <i>Salix</i> & <i>Populus</i> sp. particularly <i>S. cinerea</i>                                                                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Sprawler</b><br><i>Asteroscopus sphinx</i><br>(moth)              | UK BAP              | Broadleaved woodland, gardens & areas with scattered trees.<br><b>Restricted distribution:</b><br>Widespread in S half of England & Wales, scattered in N England & N Ireland.                  | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Prunus spinosa</i> , <i>Crataegus monogyna</i> , <i>Tilia x europaea</i> , <i>Salix caprea</i> , <i>Corylus avellana</i> , <i>Quercus robur</i> & <i>Ulmus minor</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Brindled ochre</b><br><i>Dasyptolia templi</i><br>(moth)          | UK BAP              | Rocky coastal habitats - grassland, sand dunes, sea cliffs & upland grassland & moorland.<br><b>Restricted distribution:</b><br>Scattered in N & SW England, Wales, Scotland & N Ireland coast. | B Grassland<br>D Heathland<br>H6 Sand dune<br>H8 Maritime cliff and slope<br><b>with</b> <i>Heraclium sphondylium</i> & <i>Angelica sylvestris</i>                                                                                                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Deep-brown dart</b><br><i>Aporophyla lutulenta</i><br>(moth)      | UK BAP              | Calcareous grassland, rough meadows, downland, heathland, sand dunes & gardens.<br><b>Restricted distribution:</b><br>Widespread in S half of England, scattered in Wales & Scotland.           | A2 Scrub<br>B Grassland<br>B3 Calcareous grassland<br>D Heathland<br>H6 Sand dune<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Crataegus monogyna</i> , <i>Rumex obtusifolius</i> , <i>R. acetosa</i> & <i>R. acetosella</i>                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                                  | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                      | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                        |
|--------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Sword-grass</b><br><i>Xylena exsoleta</i><br>(moth)                   | UK BAP              | Moorland, rough grassland & upland woodland.<br><b>Restricted distribution:</b><br>Scattered but local throughout UK.                                                           | A1 Woodland<br>B Grassland<br>D Heathland<br><b>with</b> <i>Potentilla reptans</i> ,<br><i>Ononis repens</i> , <i>Humulus lupulus</i> ,<br><i>Carduus nutans</i> ,<br><i>Senecio vulgaris</i> ,<br><i>Cirsium</i> & <i>Rumex</i> sp.                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes                       |
| <b>Green-brindled crescent</b><br><i>Allophyes oxyacanthae</i><br>(moth) | UK BAP              | Broadleaved woodland, hedgerows, scrub & suburban habitats - gardens & parkland.<br><b>Distribution:</b><br>Widespread in UK.                                                   | A1.1/A1.3 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>J2 Hedgerows<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Prunus spinosa</i> ,<br><i>Crataegus monogyna</i> ,<br><i>C. laevigata</i> , <i>Populus alba</i> ,<br><i>Malus sylvestris</i> ,<br><i>Rosa canina</i> & <i>Sorbus aucuparia</i>                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes                       |
| <b>Dark brocade</b><br><i>Blepharita adusta</i><br>(moth)                | UK BAP              | Heathland, chalk downland, fenland, woodland, sand dunes, moorland & upland grassland.<br><b>Distribution:</b><br>Widespread but scattered in UK.                               | A1 Woodland<br>B1 Acid grassland<br>B3 Calcareous grassland<br>D Heathland<br>E3 Fen<br>H6 Sand dune<br><b>with</b> <i>Alnus glutinosa</i> ,<br><i>Silene vulgaris</i> , <i>Myrica gale</i> & <i>Calluna vulgaris</i>                                                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No                        |
| <b>Orange upperwing</b><br><i>Jodia croceago</i><br>(moth)               | UK BAP              | Oak woodland, hedgerows & areas with scattered tress.<br><b>Restricted distribution:</b><br>Very rare. Last recorded in S England & Wales.                                      | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br>J2 Hedgerows<br><b>with</b> <i>Quercus robur</i> & <i>Q. petraea</i>                                                                                                                                                                                    | Distribution:<br>No (potentially extinct*)<br>Habitat Present:<br>N/A |
| <b>Flounced chestnut</b><br><i>Agrochola helvola</i><br>(moth)           | UK BAP              | Broadleaved woodland, scrubby downland, heathland & moorland.<br><b>Distribution:</b><br>Widespread in S half of England & Wales, scattered in N England, Scotland & N Ireland. | A1.1 Broadleaved woodland<br>A2 Scrub<br>B Grassland<br>D Heathland<br><b>with</b> <i>Salix aurita</i> , <i>S. caprea</i> , <i>S. cinerea</i> ,<br><i>Betula pendula</i> , <i>B. pubescens</i> , <i>Quercus robur</i> ,<br><i>Q. petraea</i> , <i>Ulmus procera</i> , <i>U. glabra</i> ,<br><i>Calluna vulgaris</i> & <i>Vaccinium myrtillus</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes                       |
| <b>Brown-spot pinion</b><br><i>Agrochola litura</i><br>(moth)            | UK BAP              | Broadleaved woodland, parkland, scrub, gardens, heathland, fens, grassland & hedgerows.<br><b>Distribution:</b><br>Widespread in England, Wales & Scotland, rare in N Ireland.  | A1.1/A1.3 Woodland<br>A2 Scrub<br>A3.1/A3.3 Parkland/scattered trees<br>B Grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Quercus</i> sp.,<br><i>Crataegus monogyna</i> ,<br><i>Silene vulgaris</i> , <i>Rumex acetosa</i> & <i>Filipendula ulmaria</i>                                     | Distribution:<br>Yes<br>Habitat Present:<br>Yes                       |

| SPECIES                                                           | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                                                      | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Beaded chestnut</b><br><i>Agrochola lychnidis</i><br>(moth)    | UK BAP              | Broadleaved woodland, scrub, hedgerows, grassland, heathland & gardens.<br><b>Distribution:</b><br>Widespread in England & Wales, rare in Scotland & N Ireland.                  | A1.1/A1.3 Woodland<br>A2 Scrub<br>B Grassland<br>D Heathland<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Crataegus monogyna</i> & other trees/shrubs                                                                                                                                                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Centre-barred sallow</b><br><i>Atethmia centrago</i><br>(moth) | UK BAP              | Broadleaved woodland, hedgerows & gardens.<br><b>Distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland.                                          | A1.1/A1.3 Woodland<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Fraxinus excelsior</i>                                                                                                                                                                                                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Sallow</b><br><i>Xanthia icteritia</i><br>(moth)               | UK BAP              | Damp & broadleaved woodland, heathland, moorland, marshes, fens & gardens.<br><b>Distribution:</b><br>Widespread in UK.                                                          | A1.1 Broadleaved woodland<br>B5 Marsh/marshy grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Salix</i> sp., <i>Populus alba</i> & <i>P. nigra</i>                                                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Dusky-lemon sallow</b><br><i>Xanthia gilvago</i><br>(moth)     | UK BAP              | Broadleaved woodland, hedgerows & parkland.<br><b>Restricted distribution:</b><br>Scattered in England, Wales & Scotland.                                                        | A1.1/A1.3 Woodland<br>A3.1/A3.3 Parkland/scattered trees<br>J2 Hedgerows<br><b>with</b> <i>Ulmus procera</i> & <i>U. glabra</i>                                                                                                                                                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Grey dagger</b><br><i>Acronicta psi</i><br>(moth)              | UK BAP              | Woodland, hedgerows, parks, gardens, scrubby heathland, calcareous grassland & fens.<br><b>Distribution:</b><br>Widespread in England, Wales & N Ireland, scattered in Scotland. | A1 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B3 Calcareous grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Prunus spinosa</i> , <i>Malus pumila</i> , <i>Betula pubescens</i> , <i>B. pendula</i> , <i>Tilia x europaea</i> , <i>Ulmus procera</i> , <i>Crataegus monogyna</i> , <i>C. laevigata</i> & <i>Sorbus aucuparia</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Knot grass</b><br><i>Acronicta rumicis</i><br>(moth)           | UK BAP              | Open sites - grassland, heathland, woodland, fens, scrub, marshes, gardens & hedgerows.<br><b>Distribution:</b><br>Widespread in UK.                                             | A1 Woodland<br>A2 Scrub<br>B Grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Rubus fruticosus</i> , <i>Crataegus monogyna</i> , <i>Rosa pimpinellifolia</i> , <i>Plantago lanceolata</i> , <i>P. major</i> , <i>Rumex acetosa</i> , <i>R. obtusifolius</i> , <i>Humulus lupulus</i> & <i>Mentha aquatica</i>   | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                         | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                    | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-----------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Mouse moth</b><br><i>Amphipyra tragopoginis</i><br>(moth)    | UK BAP              | Wide range of habitats - gardens, woodland, sand dunes, moorland & fens.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                   | A1 Woodland<br>D Heathland<br>E3 Fen<br>H6 Sand dune<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Crataegus monogyna</i> , <i>Salix</i> sp., <i>Foeniculum vulgare</i> , <i>Artemisia vulgaris</i> & <i>Sanguisorba minor</i>                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Heart moth</b><br><i>Dicycla oo</i><br>(moth)                | UK BAP              | Mature oak woodland, wooded commons & oak parkland.<br><b>Restricted distribution:</b><br>SE & E England.                                                                                                               | A1.1.1 Broadleaved semi-natural woodland<br>A3.1 Broadleaved parkland/scattered trees<br><b>with</b> <i>Quercus robur</i>                                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>White-spotted pinion</b><br><i>Cosmia diffinis</i><br>(moth) | UK BAP              | Woodland, thickets, copses & hedgerows.<br><b>Restricted distribution:</b><br>Scattered in S half of England & Wales.                                                                                                   | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>J2 Hedgerows<br><b>with</b> <i>Ulmus procera</i> , <i>U. minor</i> & <i>U. glabra</i>                                                                                                                      | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Dusky brocade</b><br><i>Apamea remissa</i><br>(moth)         | UK BAP              | Open woodland, dry pastures, marshes, calcareous grassland, gardens & hedgerows.<br><b>Distribution:</b><br>Widespread in UK.                                                                                           | A1 Woodland (open)<br>B2 Neutral grassland<br>B3 Calcareous grassland<br>B5 Marsh/marshy grassland<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Elytrigia repens</i> & <i>Phalaris arundinacea</i>                                        | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Large nutmeg</b><br><i>Apamea anceps</i><br>(moth)           | UK BAP              | Dry pasture, chalk grassland, farmland, open woodland & edges, fens, scrub, gardens & heathland.<br><b>Restricted distribution:</b><br>Widespread in S half of England, scattered in N England, Wales & Scotland.       | A1 Woodland (open & edges)<br>A2 Scrub<br>B Grassland<br>D Heathland<br>E3 Fen<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Dactylis glomerata</i> & <i>Poa annua</i>                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Rosy minor</b><br><i>Mesoligia literosa</i><br>(moth)        | UK BAP              | Fens, scrub, calcareous grassland, heathland, open woodland, gardens & coastal areas - sand dunes & sea cliffs.<br><b>Restricted distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland. | A1 Woodland (open)<br>A2 Scrub<br>B3 Calcareous grassland<br>D Heathland<br>E3 Fen<br>H6 Sand dune<br>H8 Maritime cliff & slope<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Dactylis glomerata</i> , <i>Ammophila arenaria</i> & <i>Leymus arenarius</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Concolorous</b><br><i>Chortodes extrema</i><br>(moth)        | UK BAP              | Fenland & ancient woodland.<br><b>Restricted distribution:</b><br>SE & E England.                                                                                                                                       | A1.1.1 Broadleaved semi-natural woodland (ancient)<br>E3 Fen<br><b>with</b> <i>Calamagrostis canescens</i> & <i>C. epigejos</i>                                                                                                                                | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Fenn's wainscot</b><br><i>Chortodes brevilinea</i><br>(moth) | UK BAP              | Fenland in reedbeds.<br><b>Restricted distribution:</b><br>E Anglia.                                                                                                                                                    | E3 Fen<br>F Swamp, marginal & inundation<br><b>with</b> <i>Phragmites australis</i>                                                                                                                                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                                                | CONSERVATION STATUS                                         | HABITAT NICHE                                                                                                                                                                                                             | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                       | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Sandhill rustic (Cornish subsp.)</b><br><i>Luperina nickerlii</i><br><i>subsp. leechi</i><br>(moth) | UK BAP                                                      | Sandy & rocky coasts, shingle & sand beaches.<br><b>Restricted distribution:</b><br>Cornwall.                                                                                                                             | H3 Shingle<br>H4 Boulders/rocks<br>H5 Strandline vegetation<br>H6 Sand dune<br><b>with</b> <i>Puccinellia maritima</i> , <i>P. distans</i> ,<br><i>Poa bulbosa</i> , <i>Agropyron junceiforme</i> & <i>Festuca rubra</i>                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Ear moth</b><br><i>Amphipoea oculatea</i><br>(moth)                                                 | UK BAP                                                      | Unimproved grassland, woodland rides, scrub, fens, marshes, gardens, moorland, heathland & saltmarshes.<br><b>Distribution:</b><br>Widespread in S half of England & Wales, scattered in N England, Scotland & N Ireland. | A1 Woodland (rides)<br>A2 Scrub<br>B Grassland (unimproved)<br>B5 Marsh/marshy grassland<br>D Heathland<br>E3 Fen<br>H2 Saltmarsh<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Poa annua</i> ,<br><i>Petasites hybridus</i> & <i>Deschampsia cespitosa</i>                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Rosy rustic</b><br><i>Hydraecia micacea</i><br>(moth)                                               | UK BAP                                                      | Open woodland & rides, scrub, rough grassland, marshes, fens, gardens, hedgerows & heathland.<br><b>Distribution:</b><br>Widespread in UK.                                                                                | A1 Woodland<br>B Grassland<br>E3 Fen<br>G1 Standing water<br>G2 Running water<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Humulus lupulus</i> ,<br><i>Plantago lanceolata</i> ,<br><i>Rumex obtusifolius</i> ,<br><i>Stachys</i> & <i>Arcium</i> sp.,<br><i>Limonium vulgare</i> & <i>Fragaria ananassa</i> | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Marsh mallow moth</b><br><i>Hydraecia osseola</i><br><i>subsp. hucherardi</i><br>(moth)             | UK BAP                                                      | Marshes, fens, river banks & ditches.<br><b>Restricted distribution:</b><br>Kent & E Sussex.                                                                                                                              | B5 Marsh/marshy grassland<br>E3 Fen<br>G1 Standing water<br>G2 Running water<br><b>with</b> <i>Althaea officinalis</i>                                                                                                                                                                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Fisher's estuarine moth</b><br><i>Gortyna borelii</i><br>(moth)                                     | <b>W&amp;CA<sup>1</sup></b><br><b>CH&amp;SR<sup>4</sup></b> | Coastal & rough neutral grassland on clay soils, scrub, sea cliffs, saltmarshes & grazing marsh.<br><b>Restricted distribution:</b><br>NE Essex & Kent.                                                                   | A2 Scrub<br>B2.1 Unimproved neutral grassland<br>B5 Marsh/marshy grassland<br>H2 Saltmarsh<br>H8 Maritime cliff & slope<br><b>with</b> <i>Peucedanum officinale</i>                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Haworth's minor</b><br><i>Celaena haworthii</i><br>(moth)                                           | UK BAP                                                      | Bogs, fens, marshes, wet heaths, upland acid moorland.<br><b>Restricted distribution:</b><br>Scattered in N England, Wales, Scotland & N Ireland, scarce in S half of England.                                            | B5 Marsh/marshy grassland<br>D Heathland<br>E1 Bog<br>E3 Fen<br><b>with</b> <i>Eriophorum</i> sp.                                                                                                                                                                                                                                 | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                             | CONSERVATION STATUS                   | HABITAT NICHE                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                    | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Crescent</b><br><i>Celaena leucostigma</i><br>(moth)             | UK BAP                                | Damp woodland, fens, moorland, marshes, reedbeds, riversides & lake or ditch margins.<br><b>Distribution:</b><br>Scattered in UK.                       | A1 Woodland (damp)<br>B5 Marsh/marshy grassland<br>E Mire<br>F Swamp, marginal & inundation<br>G1 Standing water<br>G2 Running water<br><b>with</b> <i>Iris pseudacorus</i> & <i>Cladium mariscus</i>                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>White-mantled wainscot</b><br><i>Archanara neurica</i><br>(moth) | UK BAP                                | Drier parts of reedbeds & reed-lined ditches.<br><b>Restricted distribution:</b><br>Suffolk.                                                            | F Swamp, marginal & inundation<br>G1 Standing water<br>G2 Running water<br><b>with</b> <i>Phragmites australis</i>                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Large wainscot</b><br><i>Rhizedra lutosa</i><br>(moth)           | UK BAP                                | Drier parts of reedbeds, reed-lined ditches & riversides.<br><b>Distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland.  | F Swamp, marginal & inundation<br>G1 Standing water<br>G2 Running water<br><b>with</b> <i>Phragmites australis</i>                                                                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Brighton wainscot</b><br><i>Oria musculosa</i><br>(moth)         | UK BAP                                | Cereal & corn fields & grassy margins.<br><b>Restricted distribution:</b><br>Central S England.                                                         | B Grassland<br>J1.1 Arable<br><b>with</b> wild grasses & cereal crops in <i>Poaceae</i> particularly <i>Hordeum vulgare</i> , <i>Avena sativa</i> , <i>Triticum aestivum</i> & <i>Secale cereale</i>                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Rustic</b><br><i>Hoplodrina blanda</i><br>(moth)                 | UK BAP                                | Woodlands, rough meadows & gardens.<br><b>Distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland.                        | A1 Woodland<br>B Grassland<br>C3.1 Tall ruderal<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Rumex crispus</i> , <i>R. obtusifolius</i> , <i>Plantago major</i> , <i>P. lanceolata</i> & <i>Stellaria media</i>                                                           | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Mottled rustic</b><br><i>Caradrina morpheus</i><br>(moth)        | UK BAP                                | Grassland, farmland, scrub, heathland, woodland & gardens.<br><b>Distribution:</b><br>Widespread in England & Wales, scattered in Scotland & N Ireland. | A1 Woodland<br>A2 Scrub<br>B Grassland<br>C3.1 Tall ruderal<br>D Heathland<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Rumex crispus</i> , <i>R. obtusifolius</i> , <i>Taraxacum officinale</i> , <i>Urtica dioica</i> , <i>Gallium mollugo</i> & <i>Chenopodium</i> sp. | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Marsh moth</b><br><i>Athetis pallustris</i><br>(moth)            | UK BAP                                | Coastal fens & marshy grasslands.<br><b>Restricted distribution:</b><br>NE England.                                                                     | B5 Marsh/marshy grassland<br>E3 Fen<br>H Coastland<br><b>with</b> <i>Filipendula ulmaria</i> & <i>Plantago lanceolata</i>                                                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Reddish buff</b><br><i>Acosmetia caliginosa</i><br>(moth)        | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Sparse vegetation in open heathland & sunny rides in woodland.<br><b>Restricted distribution:</b><br>Isle of Wight.                                     | A1 Woodland (sunny rides)<br>D Heathland (open)<br><b>with</b> <i>Serratula tinctoria</i>                                                                                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                 | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                  | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                      | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
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| <b>Anomalous</b><br><i>Stilbia anomala</i><br>(moth)                    | UK BAP              | Moorland, heathland & dune heath.<br><b>Restricted distribution:</b><br>Scattered in mainly N & W Britain, local in E England & N Ireland.                                                     | D Heathland<br>H6.6 Dune heath<br><b>with</b> <i>Deschampsia flexuosa</i> & <i>D. cespitosa</i>                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Shoulder-striped clover</b><br><i>Heliothis maritima</i><br>(moth)   | UK BAP              | Damp acid heathland.<br><b>Restricted distribution:</b><br>Hampshire, Dorset & Surrey.                                                                                                         | D2 Wet heathland<br><b>with</b> <i>Erica tetralix</i> ,<br><i>Calluna vulgaris</i> &<br><i>Narthecium ossifragum</i>                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Light crimson underwing</b><br><i>Catocala promissa</i><br>(moth)    | UK BAP              | Mature or ancient oak woodland.<br><b>Restricted distribution:</b><br>S England, mainly Hampshire.                                                                                             | A1.1.1 Broadleaved semi-natural woodland (mature or ancient)<br><b>with</b> <i>Quercus robur</i> &<br><i>Q. petraea</i>                                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Dark crimson underwing</b><br><i>Catocala sponsa</i><br>(moth)       | UK BAP              | Mature or ancient oak woodland.<br><b>Restricted distribution:</b><br>S England, mainly New Forest.                                                                                            | A1.1.1 Broadleaved semi-natural woodland (mature or ancient)<br><b>with</b> <i>Quercus robur</i> &<br><i>Q. petraea</i>                                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Four-spotted moth</b><br><i>Tyta luctuosa</i><br>(moth)              | UK BAP              | Well-drained, open sites with S-facing slopes, & dry, sandy or chalky soils - field margins, unimproved calcareous grassland & wasteland.<br><b>Restricted distribution:</b><br>S & E England. | B1 Acid grassland<br>B3.1 Unimproved calcareous grassland<br>I2.1 Quarry (disused)<br>J1 Cultivated/disturbed land<br><b>with</b> <i>Convolvulus arvensis</i>                                                    | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Common fan-foot</b><br><i>Pechipogo strigilata</i><br>(moth)         | UK BAP              | Open deciduous woodland & coppice, often ancient.<br><b>Restricted distribution:</b><br>S half of England.                                                                                     | A1.1.1 Broadleaved semi-natural woodland (open/coppice/ancient)<br><b>with</b> <i>Quercus robur</i> ,<br><i>Alnus glutinosa</i> , <i>Betula</i> sp.,<br><i>Rubus fruticosus</i> &<br><i>Taraxacum officinale</i> | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Clay fan-foot</b><br><i>Paracolax tristalis</i><br>(moth)            | UK BAP              | Oak & broadleaved woodland.<br><b>Restricted distribution:</b><br>SE England.                                                                                                                  | A1.1 Broadleaved woodland<br><b>with</b> <i>Quercus robur</i>                                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Olive crescent</b><br><i>Trisateles emortualis</i><br>(moth)         | UK BAP              | Mature broadleaved woodland & clearings.<br><b>Restricted distribution:</b><br>S & SE England.                                                                                                 | A1.1.1 Broadleaved semi-natural woodland (clearings)<br><b>with</b> <i>Fagus sylvatica</i> ,<br><i>Quercus robur</i> & <i>Q. petraea</i>                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Sandhill pigmy moth</b><br><i>Stigmella zelleriella</i><br>(moth)    | UK BAP              | Coastal sand hills & dunes.<br><b>Restricted distribution:</b><br>Kent.                                                                                                                        | H6 Sand dune<br><b>with</b> <i>Salix repens</i>                                                                                                                                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Horehound long-horn moth</b><br><i>Nemophora fasciella</i><br>(moth) | UK BAP              | Dry pastures, waste ground & hedgerows.<br><b>Restricted distribution:</b><br>S & E England.                                                                                                   | B Grassland<br>C Tall herb & fern<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>with</b> <i>Ballota nigra</i>                                                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Scarce long-horn moth</b><br><i>Nematopogon magna</i><br>(moth)      | UK BAP              | Moorland & wooded heathland.<br><b>Distribution:</b><br>N Scotland.                                                                                                                            | A1 Woodland<br>B Grassland<br>D Heathland<br><b>with</b> <i>Vaccinium myrtillus</i>                                                                                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                      | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                        | EQUIVALENT PHASE 1 HABITATS                                                                                                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Currant shoot borer</b><br><i>Lampronia capitella</i><br>(moth)           | UK BAP              | Woodlands.<br><b>Restricted distribution:</b><br>Scattered but local in England, Wales & Scotland.                                                   | A1 Woodland<br><b>with</b> <i>Ribes rubrum</i> , <i>R. nigrum</i> & <i>R. uva-crispa</i>                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Dorset tineid moth</b><br><i>Eudarcia richardsoni</i><br>(moth)           | UK BAP              | Sea cliffs & rocky areas.<br><b>Restricted distribution:</b><br>Dorset coast.                                                                        | H8 Maritime cliff & slope<br><b>with</b> algae & lichens                                                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Pied tineid moth</b><br><i>Nemapogon picarella</i><br>(moth)              | UK BAP              | Woodlands with dead & decaying trees.<br><b>Restricted distribution:</b><br>Scottish Highlands & N England.                                          | A1 Woodland<br><b>with</b> bracket fungus particularly <i>Piptoporus betulinus</i> & dead wood                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scarce aspen midget moth</b><br><i>Phyllonorycter sagitella</i><br>(moth) | UK BAP              | Woodlands.<br><b>Restricted distribution:</b><br>W England & Wales.                                                                                  | A1 Woodland<br><b>with</b> <i>Populus tremula</i>                                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Surrey midget moth</b><br><i>Phyllonorycter scabiosella</i><br>(moth)     | UK BAP              | Lowland calcareous grassland & downland.<br><b>Restricted distribution:</b><br>Surrey, Kent & Gloucestershire.                                       | B3 Calcareous grassland<br><b>with</b> <i>Scabious columbaria</i>                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scarce brown streak</b><br><i>Aplota palpella</i><br>(moth)               | UK BAP              | Woodlands, wood-pasture, parkland & hedgerows with veteran trees.<br><b>Restricted distribution:</b><br>S England.                                   | A1 Woodland<br>A3 Parkland/scattered trees<br>J2 Hedgerows<br><b>with</b> veteran trees                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Greenweed flat-body</b><br><i>Agonopterix atomella</i><br>(moth)          | UK BAP              | Unimproved grassland.<br><b>Restricted distribution:</b><br>Scattered in S, E & NW England & Wales.                                                  | B Grassland (unimproved)<br><b>with</b> <i>Genista tinctoria</i>                                                                                            | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Fuscous flat-body</b><br><i>Agonopterix capreolella</i><br>(moth)         | UK BAP              | Calcareous grassland, chalk downs & limestone pavement.<br><b>Restricted distribution:</b><br>Mainly Kent, Isle of Wight & N Ireland.                | B3 Calcareous grassland<br>I1.3 Limestone pavement<br><b>with</b> <i>Pimpinella saxifraga</i>                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Water-dock case-bearer</b><br><i>Coleophora hydrolapathella</i><br>(moth) | UK BAP              | Fens, shallow standing water, riverbanks & coastal marshes.<br><b>Restricted distribution:</b><br>Norfolk & Suffolk Broads & County Durham, Ireland. | B5 Marsh/marshy grassland<br>E3 Fen<br>G1 Standing water<br>G2 Running water<br><b>with</b> <i>Rumex hydrolapathum</i>                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Basil-thyme case-bearer</b><br><i>Coleophora tricolor</i><br>(moth)       | UK BAP              | Unimproved Breckland grassland & heathland, disused airfields & forest rides.<br><b>Restricted distribution:</b><br>Suffolk & Norfolk.               | A1.2.2 Coniferous plantation woodland (rides)<br>B Grassland (unimproved)<br>D Heathland<br><b>with</b> <i>Holcus lanatus</i> & <i>Clinopodium arvensis</i> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Large gold case-bearer</b><br><i>Coleophora vibicella</i><br>(moth)       | UK BAP              | Old rough pastures & woodland rides.<br><b>Restricted distribution:</b><br>S England.                                                                | A1 Woodland (rides)<br>B Grassland (unimproved)<br><b>with</b> <i>Genista tinctoria</i>                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                                 | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
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| <b>Betony case-bearer</b><br><i>Coleophora wockeella</i><br>(moth)      | UK BAP              | Open woodland & rides.<br><b>Restricted distribution:</b><br>Surrey & Sussex.                                                                   | A1 Woodland (open & rides)<br><b>with</b> <i>Stachys officinalis</i>                                                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Least owlet</b><br><i>Scythris siccella</i><br>(moth)                | UK BAP              | Dry sandy habitats on coast.<br><b>Restricted distribution:</b><br>Chesil Beach, Dorset.                                                        | H6 Sand dune<br>H8 Maritime cliff & slope<br><b>with</b> <i>Armeria maritima</i> ,<br><i>Ononis repens</i> , <i>Thymus polytrichus</i> , <i>Lotus corniculatus</i> , <i>Anthyllis vulneraria</i> , & <i>Plantago</i> & <i>Cerastium</i> sp. | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Slate sober moth</b><br><i>Syncopacma albipalpella</i><br>(moth)     | UK BAP              | Damp heathland.<br><b>Restricted distribution:</b><br>SE & E England.                                                                           | D2 Wet heathland<br><b>with</b> <i>Genista anglica</i>                                                                                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Western sober moth</b><br><i>Syncopacma suecicella</i><br>(moth)     | UK BAP              | Dry heathland.<br><b>Restricted distribution:</b><br>Lizard, Cornwall.                                                                          | D1 Dry heathland<br><b>with</b> <i>Genista pilosa</i>                                                                                                                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Chalk-hill lance-wing</b><br><i>Epermenia insecurella</i><br>(moth)  | UK BAP              | Limestone & chalk grassland.<br><b>Restricted distribution:</b><br>Central S England.                                                           | B3 Calcareous grassland<br><b>with</b> <i>Thesium humifusum</i>                                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Mistletoe marble</b><br><i>Celypha woodiana</i><br>(moth)            | UK BAP              | Mature traditional apple orchards & hedgerows.<br><b>Restricted distribution:</b><br>SW England, Midlands & Wales.                              | A1.1.2 Broadleaved plantation woodland (orchards)<br>J2 Hedgerows<br><b>with</b> <i>Viscum album</i>                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Liquorice piercer</b><br><i>Grapholita pallifrontana</i><br>(moth)   | UK BAP              | Downland, scrub & hedgerows on calcareous soils.<br><b>Restricted distribution:</b><br>S England.                                               | A2 Scrub<br>B3 Calcareous grassland<br>J2 Hedgerows<br><b>with</b> <i>Astragalos glycyphyllos</i>                                                                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scarce crimson and gold</b><br><i>Pyrausta sanguinalis</i><br>(moth) | UK BAP              | Coastal sand hills, sand dunes & limestone pavement.<br><b>Restricted distribution:</b><br>Isle of Man, N Wales & N Ireland.                    | H6 Sand dune<br>H8.4 Coastal grassland<br>I1.3 Limestone pavement<br><b>with</b> <i>Thymus serpyllum</i>                                                                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scarce aspen knothorn</b><br><i>Sciota hostilis</i><br>(moth)        | UK BAP              | Mature aspen woodland.<br><b>Restricted distribution:</b><br>SE England & W Midlands.                                                           | A1.1 Broadleaved woodland<br>A3.1 Mixed woodland<br><b>with</b> <i>Populus tremula</i>                                                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>White-spotted sable</b><br><i>Anania funebris</i><br>(moth)          | UK BAP              | Calcareous grassland, woodland rides & edges, limestone pavements & cliffs.<br><b>Restricted distribution:</b><br>Scattered in England & Wales. | A1 Woodland (rides & edges)<br>B3 Calcareous grassland<br>H8 Maritime cliff & slope<br>I1.3 Limestone pavement<br><b>with</b> <i>Solidago virgaurea</i> & <i>Genista tinctoria</i>                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Beautiful pearl</b><br><i>Agrotera nemoralis</i><br>(moth)           | UK BAP              | Ancient woodland.<br><b>Restricted distribution:</b><br>Kent.                                                                                   | A1.1.1 Broadleaved semi-natural woodland (ancient)<br><b>with</b> <i>Carpinus betulus</i> & <i>Corylus avellana</i>                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                  | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|--------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Hornet robberfly</b><br><i>Asilus crabroniformis</i><br>(fly)         | UK BAP              | Open, unimproved or semi-improved pasture, heathlands, dunes & occasionally wide forest roads. Larvae associated with cattle & rabbit dung.<br><b>Restricted distribution:</b><br>S England & Wales.                                    | A1.2.2 Coniferous plantation woodland<br>B Grassland (semi-improved)<br>D Heathland<br>H6 Sand dune                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Heath bee-fly</b><br><i>Bombylius minor</i><br>(fly)                  | UK BAP              | Lowland open heathland with exposed sandy banks & bluffs along the edges of paths.<br><b>Restricted distribution:</b><br>Dorset & Isle of Man.                                                                                          | D Heathland                                                                                                                                                                                | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Mottled bee-fly</b><br><i>Thyridanthrax fenestratus</i><br>(fly)      | UK BAP              | Lowland open heathland with varying age structure, sparse vegetation & bare S-facing sandy banks, often on sand pits.<br><b>Restricted distribution:</b><br>Dorset, Sussex, Surrey, Berks & Hampshire.                                  | D1 Dry heathland<br>I2 Artificial rock exposure & waste (sand pits)<br><b>with <i>Calluna vulgaris</i></b>                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Southern silver stiletto-fly</b><br><i>Clorismia rustica</i><br>(fly) | UK BAP              | Sandy riverbanks with extensive sand bars, some tree shading & bare sand in sunny areas.<br><b>Restricted distribution:</b><br>N & SE England & S Wales.                                                                                | A1 Woodland & A2 Scrub<br><b>in association with</b><br>G2 Running water (with sand bars)                                                                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Fancy-legged fly</b><br><i>Campsicnemus magius</i><br>(fly)           | UK BAP              | Saline lagoons & salty lakes with bare muddy banks.<br><b>Restricted distribution:</b><br>SE coast of England, Thames Estuary, Cheshire & Yorkshire.                                                                                    | G1.6 Brackish standing water                                                                                                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Broads long-legged fly</b><br><i>Dolichopus laticola</i><br>(fly)     | UK BAP              | Fen meadows & fen carr habitats.<br><b>Restricted distribution:</b><br>Norfolk Broads, Kent, Sussex & Surrey.                                                                                                                           | A1 Woodland (carr)<br>B5 Marsh/marshy grassland<br>E3 Fen<br>F1 Swamp                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Bure long-legged fly</b><br><i>Dolichopus nigripes</i><br>(fly)       | UK BAP              | Fenlands.<br><b>Restricted distribution:</b><br>Bure Valley, Norfolk Broads.                                                                                                                                                            | A1 Woodland (carr)<br>B5 Marsh/marshy grassland<br>E3 Fen<br>F1 Swamp                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>English assassin-fly</b><br><i>Empis limata</i><br>(fly)              | UK BAP              | Sandy river valleys with shaded edges from riverside shrubs, trees, woodland, hedgerows & parkland with mixed low intensity agriculture.<br><b>Restricted distribution:</b><br>Monnow & Usk Valley, Wales & Moccas Park, Herefordshire. | A1 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B5 Marsh/marshy grassland<br>J1.1 Arable<br>J2 Hedgerows<br><b>in association with</b><br>G2 Running water (sandy river valleys) | Distribution:<br>No<br>Habitat Present:<br>N/A  |

| SPECIES                                                                         | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|---------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Mountain dance-fly</b><br><i>Rhamphomyia hirtula</i><br>(fly)                | UK BAP              | Mountains above 800 m with mossy heaths, heaths abundant in sedges, dwarf shrub heaths & upland acid grasslands, especially on N-facing slopes. Also scree slopes, bryophyte springs, mossy snow beds & tall herbs on rocky ledges.<br><b>Restricted distribution:</b><br>Grampian mountains, Scotland. | B1 Acid grassland (upland)<br>C2 Upland species-rich ledges<br>D1 Dry heathland<br>D3 Lichen/bryophyte heath<br>D4 Montane heath/dwarf herb<br>E2 Flush & spring<br>I1.2 Scree<br><b>with</b> <i>Racomitrium</i> sp. moss, <i>Empetrum</i> , <i>Deschampsia</i> , <i>Nardus</i> & <i>Carex</i> sp. | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Clubbed big-headed fly</b><br><i>Dorylomorpha clavifemora</i><br>(fly)       | UK BAP              | Fenlands.<br><b>Restricted distribution:</b><br>East Anglia.                                                                                                                                                                                                                                            | E3 Fen<br>F1 Swamp<br><b>with</b> <i>Phragmites australis</i>                                                                                                                                                                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Pine hoverfly</b><br><i>Blera fallax</i><br>(fly)                            | UK BAP              | Caledonian forest in pine & deciduous trees with damp rot-holes.<br><b>Restricted distribution:</b><br>NE Scotland.                                                                                                                                                                                     | A1.2.1 Semi-natural coniferous woodland<br>A1.3.1 Semi-natural mixed woodland<br><b>with</b> <i>Sorbus aucuparia</i> , <i>Pinus sylvestris</i> , <i>Rosa canina</i> , <i>Galium saxatile</i> , & <i>Stellaria holostea</i>                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Golden hoverfly</b><br><i>Callicera spinolae</i><br>(fly)                    | UK BAP              | Parklands & mature woodland with tree holes with wet decaying wood.<br><b>Restricted distribution:</b><br>E Anglia & Hertfordshire.                                                                                                                                                                     | A1.1 Broadleaved woodland<br>A3 Parkland/scattered trees<br><b>with</b> <i>Fagus sylvaticus</i> , <i>Fraxinus excelsior</i> , <i>Acer</i> sp. & <i>Hedera helix</i>                                                                                                                                | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Broken-banded wasp-hoverfly</b><br><i>Chrysotoxum octomaculatum</i><br>(fly) | UK BAP              | Lowland dry heathlands.<br><b>Restricted distribution:</b><br>Cornwall, Hampshire, Surrey & Dorset.                                                                                                                                                                                                     | D1 Dry heathland                                                                                                                                                                                                                                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Phantom hoverfly</b><br><i>Doros profuges</i><br>(fly)                       | UK BAP              | Chalk grassland & downland, scrub & deciduous woodland edges on chalk.<br><b>Restricted distribution:</b><br>Scattered in S & NW England & Mull, Scotland.                                                                                                                                              | A1 Woodland (edge)<br>A2 Scrub<br>B3 Calcareous grassland<br><b>with</b> <i>Rubus</i> sp.                                                                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Bog hoverfly</b><br><i>Eristalis cryptarum</i><br>(fly)                      | UK BAP              | Bogs, valley mires, heathland, moorland & wet heath pasture, with narrow mossy water channels & often scrub.<br><b>Restricted distribution:</b><br>Dartmoor, Devon.                                                                                                                                     | A2 Scrub<br>B5 Marsh/marshy grassland<br>D Heathland<br>G2 Running water<br>E1 Bog<br>E3.1 Valley mire                                                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Aspen hoverfly</b><br><i>Hammerschmidtia ferruginea</i><br>(fly)             | UK BAP              | Large, mature open mixed or deciduous woodland with dead/decaying wood & sap runs.<br><b>Restricted distribution:</b><br>Speyside, Scotland.                                                                                                                                                            | A1.1.1 Semi-natural broadleaved woodland<br>A1.3 Mixed woodland<br><b>with</b> <i>Populus tremula</i> & <i>Betula</i> sp.                                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                        | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                             | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|----------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Western wood-vase hoverfly<br><i>Myolepta potens</i><br>(fly)  | UK BAP              | Rot-holes with pools of water in mature deciduous trees in ancient woodland & wood pasture.<br><b>Restricted distribution:</b><br>Moccas Park, Herefordshire & Gloucestershire. | A1.1.1 Semi-natural broadleaved woodland (ancient)<br>A3.1 Broadleaved parkland/scattered trees (ancient)               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Cigarillo gall-fly<br><i>Lipara similis</i><br>(fly)           | UK BAP              | Fenland & reedbeds, often in reeds amongst grasses & scrub.<br><b>Restricted distribution:</b><br>East Anglia.                                                                  | A2 Scrub<br>E3 Fen<br>F1 Swamp<br><b>with Phragmites</b>                                                                | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Variiegated fruit-fly<br><i>Amiota variegata</i><br>(fly)      | UK BAP              | Goat moth <i>Cossus cossus</i> infested oak trees.<br><b>Distribution:</b><br>New Forest, Hampshire & Forest of Dean, Gloucestershire.                                          | A1 Woodland<br>A3 Parkland/scattered trees<br>J2 Hedgerows<br><b>with Quercus sp. in association with Cossus cossus</b> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Strathspey clusiid fly<br><i>Clusiodes geomyzinus</i><br>(fly) | UK BAP              | Ancient (Caledonian) pine forests & old pine plantations with decaying stumps.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                        | A1.2.1 Coniferous semi-natural woodland<br>A1.2.2 Coniferous plantation woodland (ancient)                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Dune snail-killing fly<br><i>Salicella fasciata</i><br>(fly)   | UK BAP              | Coastal sand dunes & sparsely vegetated shingle, with land snails (Helicidae).<br><b>Restricted distribution:</b><br>Lincolnshire, Norfolk & Pembrokeshire.                     | H3 Shingle/gravel above high-tide mark<br>H5 Strandline vegetation<br>H6 Sand dune                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Viking sword fly<br><i>Lonchaea ragnari</i><br>(fly)           | UK BAP              | Mature birch trees in ancient birch woodland.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                                                         | A1.1.1 Semi-natural broadleaved woodland<br><b>with Betula sp.</b>                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Phoenix fly<br><i>Dorycera graminum</i><br>(fly)               | UK BAP              | Brownfield sites, quarries, scrub, herb-rich semi-rank grassland & deciduous woodland.<br><b>Restricted distribution:</b><br>S & SE England, mainly in Thames Corridor.         | A1 Woodland<br>A2 Scrub<br>B Grassland (unimproved)<br>I2 Artificial rock exposure & waste                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Fonesca's seed fly<br><i>Botanophila fonsecai</i><br>(fly)     | UK BAP              | Strip of bare sand & sparse herbage on dunes.<br><b>Restricted distribution:</b><br>Sutherland, Scotland.                                                                       | H6 Sand dune                                                                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A |
| Hairy canary<br><i>Phaonia jaroschewskii</i><br>(fly)          | UK BAP              | Lowland raised sphagnum bog.<br><b>Restricted distribution:</b><br>N England, New Forest & Burnham Beeches, Buckinghamshire.                                                    | E1.6.2 Raised sphagnum bog (lowland)                                                                                    | Distribution:<br>No<br>Habitat Present:<br>N/A |

| SPECIES                                                                  | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                                                               | EQUIVALENT PHASE 1 HABITATS                                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|--------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Barred green colonel</b><br><i>Odontomyia hydroleon</i><br>(fly)      | UK BAP              | Fens and marsh with open, base-rich seepages.<br><b>Restricted distribution:</b><br>N Yorkshire & W Wales.                                                                                  | B5 Marsh/marshy grassland<br>E2 Flush & spring (on calcareous ground)<br>E3 Fen                                                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Black fungus gnat</b><br><i>Asindulum nigrum</i><br>(fly)             | UK BAP              | Open wetland habitats - floodplain grazing marsh & fens.<br><b>Restricted distribution:</b><br>East Anglia & Hampshire.                                                                     | F Swamp, marginal & inundation<br>B5 Marsh/marshy grassland<br>E3 Fen<br><b>with Apiaceae</b>                                                | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Giant wood gnat</b><br><i>Neoempheria lineola</i><br>(fly)            | UK BAP              | Lowland mixed deciduous woodland, beech woodland, wood pasture & parkland with fallen hollow trunks & old beech stumps.<br><b>Restricted distribution:</b><br>Gloucestershire & New Forest. | A1.1.1 Broadleaved semi-natural woodland<br>A1.3.1 Mixed semi-natural woodland<br>A3 Parkland/scattered trees<br><b>with Fagus sylvatica</b> | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Royal splinter cranefly</b><br><i>Gnophomyia elsneri</i><br>(fly)     | UK BAP              | Lowland wood pasture & parkland with large hollow beech trees.<br><b>Restricted distribution:</b><br>Windsor Forest, Berkshire.                                                             | A3 Parkland/scattered trees<br><b>with Fagus sylvatica</b>                                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Six-spotted cranefly</b><br><i>Idiocera sexguttata</i><br>(fly)       | UK BAP              | Seepages where sparse vegetation.<br><b>Restricted distribution:</b><br>New Forest & Gower coast, S Wales.                                                                                  | E2 Flush & spring                                                                                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Scottish yellow splinter</b><br><i>Lipsothrix ecucullata</i><br>(fly) | UK BAP              | Wet seepages or streams in damp deciduous woodlands with dead/decaying wood, partially immersed in water.<br><b>Restricted distribution:</b><br>Scattered in Scottish Highlands & fringes.  | A1.1 Broadleaved woodland<br><b>in association with</b><br>E2 Flush & spring<br>G2 Running water<br><b>with</b> dead/decaying wood           | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Northern yellow splinter</b><br><i>Lipsothrix errans</i><br>(fly)     | UK BAP              | Wet, rotting fallen trees & branches in shaded woodland streams.<br><b>Restricted distribution:</b><br>Scattered in N England, Wales & Scotland.                                            | A1 Woodland<br><b>in association with</b><br>G2 Running water<br><b>with</b> dead/decaying wood                                              | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Southern yellow splinter</b><br><i>Lipsothrix nervosa</i><br>(fly)    | UK BAP              | Wet, rotting wood in seepages in deciduous woodland with continuous shade.<br><b>Restricted distribution:</b><br>Scattered in S & central England & S Wales.                                | A1.1.1 Broadleaved semi-natural woodland<br><b>in association with</b><br>G2 Running water<br><b>with</b> dead/decaying wood                 | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                          | CONSERVATION STATUS | HABITAT NICHE                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                     | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------|
| Scarce yellow splinter<br><i>Lipsothrix nigristigma</i><br>(fly) | UK BAP              | Wet, rotting fallen trees & branches in shaded woodland streams.<br><b>Restricted distribution:</b><br>N Welsh borders, S Lancashire & Cumbria. | A1 Woodland<br><b>in association with</b><br>G2 Running water<br><b>with</b> dead/decaying wood | Distribution:<br>No<br>Habitat Present:<br>N/A |
| River-shore cranefly<br><i>Rhabdomastix japonica</i><br>(fly)    | UK BAP              | Un-modified rivers with exposed sand shoals.<br><b>Restricted distribution:</b><br>Scattered in S & NW England, S Wales & NE Scotland.          | G2 Running water<br>(un-modified rivers)                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A |

- <sup>1</sup> Fully protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-
- intentionally kill, injure or take the species;
  - intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by the species for shelter or protection; or
  - intentionally or recklessly disturb the species when occupying a structure or place which it uses for that purpose.
- <sup>2</sup> Protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-
- intentionally kill, injure or take the species.
- <sup>3</sup> Protected under Part 4a, Section 9 only of Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-
- intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by the species for shelter or protection.
- <sup>4</sup> Protected under Schedule 2 of *The Conservation of Habitats and Species Regulations 2010* making the species a European Protected Species.

**APPENDIX D. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF LEGALLY PROTECTED AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF FISH WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.**

| SPECIES                                           | CONSERVATION STATUS                   | HABITAT NICHE (JNCC 2013 except where stated)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                                                    | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|---------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Common sturgeon</b><br><i>Acipenser sturio</i> | <b>W&amp;CA<sup>1</sup></b><br>UK BAP | Marine and brackish water using freshwater for spawning. Sturgeon is not known to breed in the UK but adults are occasionally encountered in coastal and estuarine waters (Pond Life 2013).<br><b>Restricted distribution:</b> England, Scotland & N Ireland.                                                                                                                                                                                                                                                                              | G2 Running water                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Allis shad</b><br><i>Alosa alosa</i>           | <b>W&amp;CA<sup>2</sup></b><br>UK BAP | Shallow coastal waters and estuaries, migrating into rivers to spawn. Relatively shallow gravelly areas adjacent to deep pools are thought to represent optimal spawning habitat. Juveniles spend up to 2 years in freshwater before returning to the sea.<br><b>Restricted distribution:</b> Tamar Estuary & Solway Firth.                                                                                                                                                                                                                | G2 Running water                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Twaiite shad</b><br><i>Alosa fallax</i>        | <b>W&amp;CA<sup>3</sup></b><br>UK BAP | Coastal and the lower reaches of large rivers with some non-migratory populations. Spawning occurs above the influence of the high tide, usually in water flowing over stones and gravel. Young usually move to the upper estuary to grow. Adults are usually shallow coastal water, although can be found at a depth of 100m<br><b>Restricted distribution:</b> England/Wales border, Wales, Solway Firth & N Ireland.                                                                                                                    | G2 Running water                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>European eel</b><br><i>Anguilla anguilla</i>   | UK BAP                                | Spawning occurs offshore and juveniles live under rocks, in crevices, or in the mud on the bed of estuaries, coastal lagoons, rivers, and lake ponds. Adults occur in freshwater. Juveniles migrate from ocean to a wide variety of waterbodies, from large rivers and lakes to damp flushes and small ponds with the ability to move on land through damp vegetation and during rainy periods. Adults usually stay in freshwater for 7-19 years, although it can be longer.<br><b>Distribution:</b> England, Scotland, Wales & N Ireland. | G1.2 Mesotrophic lakes<br>G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                                         | CONSERVATION STATUS                   | HABITAT NICHE (JNCC 2013 except where stated)                                                                                                                                                                                                                                               | EQUIVALENT PHASE 1 HABITATS                                                 | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-----------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------|
| <b>Spined loach</b><br><i>Cobitis taenia</i>                    | UK BAP                                | Found in slow-flowing rivers, streams, canals and ditches, where they spawn among stones and vegetation in shallower water with juveniles and adults feeding on the bottom.<br><b>Restricted distribution:</b><br>E Midlands, S of the Humber, N of the Thames.                             | G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water        | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Vendace</b><br><i>Coregonus albula</i>                       | <b>W&amp;CA<sup>4</sup></b><br>UK BAP | Occurring in lakes and spawning over gravelly/stony shores.<br><b>Restricted distribution:</b><br>England (Derwentwater, Bassenthwaite Lake), Scotland (Castle Loch, Mill Loch pre 1970s).                                                                                                  | G1.2 Mesotrophic lakes<br>G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes  | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Pollan</b><br><i>Coregonus autumnalis</i>                    | UK BAP                                | Occurring only in lakes in Ireland, although it may still retain the capacity to become anadromous.<br><b>Restricted distribution:</b><br>N Ireland - Lough Neagh, Lower Lough Erne, Loch Derg & Lough Ree.                                                                                 | G1.1 Eutrophic standing water<br>G1.2 Mesotrophic lakes<br>G2 Running water | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Whitefish</b><br><i>Coregonus lavaretus</i>                  | <b>W&amp;CA<sup>4</sup></b><br>UK BAP | Deep clear lakes.<br><b>Restricted distribution:</b><br>England (Ullswater, Red Tarn, Haweswater), Scotland (Loch Lomond, Loch Eck) & Wales (Llyn Tegid).                                                                                                                                   | G1.2 Mesotrophic lakes<br>G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes  | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Giant goby</b><br><i>Gobius cobitis</i>                      | <b>W&amp;CA<sup>4</sup></b>           | Coastal waters, estuaries and accessible rivers. Some populations are land-locked. Spawning occurs in freshwater. Juveniles are found in silt beds in rivers and return to the sea when adults.<br><b>Restricted distribution:</b><br>Many accessible rivers S of the Great Glen, Scotland. | G1.6 Brackish standing water<br>H1 Intertidal                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Couch's goby</b><br><i>Gobius couchii</i>                    | <b>W&amp;CA<sup>4</sup></b>           | Inshore and intertidal.<br><b>Restricted distribution:</b><br>E Atlantic, S Cornwall & Ireland (Co. Cork, Co Donegal).                                                                                                                                                                      | H1 Intertidal                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Short snouted seahorse</b><br><i>Hippocampus hippocampus</i> | <b>W&amp;CA<sup>4</sup></b>           | Shallow muddy waters, estuaries, sea-grass beds.<br><b>Restricted distribution:</b><br>S England (incl. River Thames).                                                                                                                                                                      | G2.6 Brackish running water<br>H Coastland                                  | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Spiny seahorse</b><br><i>Hippocampus guttulatus</i>          | <b>W&amp;CA<sup>4</sup></b>           | Shallow coastal waters, lagoons and estuaries.<br><b>Restricted distribution:</b><br>S Norfolk, Essex, SE England, parts of Wales, W coast of Scotland to the Shetland Isles & W coast of Ireland.                                                                                          | G1.6 Brackish standing water<br>G2.6 Brackish running water<br>H Coastland  | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                             | CONSERVATION STATUS | HABITAT NICHE (JNCC 2013 except where stated)                                                                                                                                                                                                                                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                    | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-----------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>River lamprey</b><br><i>Lampetra fluviatilis</i> | UK BAP              | Coastal waters, estuaries and accessible rivers. Some populations are land-locked. Spawning occurs in freshwater. Juveniles are found in silt beds in rivers and return to the sea when adults.<br><b>Restricted distribution:</b> Many accessible rivers S of the Great Glen, Scotland.                                                                                                                           | G1.2 Mesotrophic lakes<br>G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Smelt</b><br><i>Osmerus eperlanus</i>            | UK BAP              | Estuaries and lower reaches of the upper river at spawning. Eggs are laid in quite fast flowing water. Young often swept down into the upper estuary (MarLIN 2013).<br><b>Restricted distribution:</b> E coast of England, Wales, W Scotland & Ireland - Lough Foyle, Larne Lough and Belfast Lough (Northern Ireland Priority Species 2013).                                                                      | G2 Running water                                                                               | Distribution:<br>No<br>Habitat Present:<br>N/A |
| <b>Sea lamprey</b><br><i>Petramyzon marinus</i>     | UK BAP              | Found in estuaries and easily accessible rivers. Juveniles are usually found in silt sands in fast flowing waters and return to the sea as adults.<br><b>Restricted distribution:</b> England, Wales, Scotland & N Ireland, mostly on the Atlantic coast, absent from northern rivers.                                                                                                                             | G1.2 Mesotrophic lakes<br>G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Atlantic salmon</b><br><i>Salmo salar</i>        | UK BAP              | Commonly found in coastal areas, estuaries and accessible rivers during spawning periods. Spawning occurs in gravel beds in the upper reaches of the river, juveniles spend time in freshwater before returning to the sea as adults.<br><b>Distribution:</b> Mainly found on the Atlantic coast with Scottish rivers holding very good populations.                                                               | G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water                           | Distribution:<br>Yes<br>Habitat Present:<br>No |
| <b>Brown trout</b><br><i>Salmo trutta</i>           | UK BAP              | Commonly found in estuaries and all accessible rivers, as well as being introduced to a large number of fishing lakes. Spawning occurs in clean deep gravel in fast flowing water, usually at the downstream exit of a pool. Occasionally spawn in shallow areas of lakes especially where there are gravelly spits. Some adults will return to sea.<br><b>Distribution:</b> England, Wales, Scotland & N Ireland. | G1.2 Mesotrophic lakes<br>G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water | Distribution:<br>Yes<br>Habitat Present:<br>No |

| SPECIES                                   | CONSERVATION STATUS | HABITAT NICHE (JNCC 2013 except where stated)                                                                                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                          | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|-------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------|
| Arctic charr<br><i>Salvelinus alpinus</i> | UK BAP              | Large, deep oligotrophic lakes in glaciated basins. Sometimes found in streams flowing into 'Charr lakes'. Spawning occur over gravel and stones.<br><b>Restricted distribution:</b><br>Lake District, Scotland & Ireland. | G1.3 Oligotrophic lakes<br>G1.4 Dystrophic lakes<br>G2 Running water | Distribution:<br>No<br>Habitat Present:<br>N/A |

**NB:** This table excludes all UK BAP priority marine species. Where it is likely that these species will be encountered, they will be similarly assessed. Species considered extinct were also excluded from consideration.

<sup>1</sup> Protected under Part 4(b) and (c), Section 9 of Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-

- Intentionally or recklessly obstruct access to any structure or place used by the species for shelter or protection; or
- Intentionally or recklessly disturb the species when occupying a structure or place which it uses for that purpose.

The species is also protected under Schedule 2 of *The Conservation of Habitats and Species Regulations 2010* making it a European Protected Species.

<sup>2</sup> Protected under Part 1 and Part 4(a), Section 9 of Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-

- Intentionally kill, injure or take the species; or
- Intentionally or recklessly damage or destroy any structure or place used by the species for shelter or protection.

<sup>3</sup> Protected under Part 4(a), Section 9 of Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-

- Intentionally or recklessly damage or destroy any structure or place used by the species for shelter or protection.

<sup>4</sup> Fully protected under Schedule 5 of the *Wildlife & Countryside Act 1981 (& as amended)*, under which it is an offence to:-

- Intentionally kill, injure or take the species;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by the species for shelter or protection; or
- Intentionally or recklessly disturb the species when occupying a structure or place which it uses for that purpose.

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**APPENDIX E. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF LEGALLY PROTECTED AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF AMPHIBIAN WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.****Great crested newt *Triturus cristatus***Conservation status

Great crested newts are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a great crested newt;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a great crested newt for shelter or protection; or
- Intentionally or recklessly disturb a great crested newt when occupying a structure or place which it uses for that purpose.

Habitat niche and equivalent Phase 1 habitats

Great crested newts use both aquatic and terrestrial habitat; adults breed in ponds during the spring and then emerge onto land, spending the summer resting, foraging and dispersing before hibernating through the winter (Natural England undated). It has been suggested that great crested newts prefer small to medium sized breeding ponds, around 50-250 m<sup>2</sup> (Bullock *et al.* 1998, Langton *et al.* 2001). However, a study in the Netherlands (Rannap *et al.* 2009) of 127 breeding ponds recorded a mean size of 419.4 m<sup>2</sup>, and the National Amphibian Survey (NAS) (Swan & Oldham 1993) reported the highest percentages of ponds holding great crested newts were water-bodies of 501-750 m<sup>2</sup> (within a size range of <26 - >10,000 m<sup>2</sup>). Favoured terrestrial habitat comprises deciduous woodlands, scrub, mature hedgerows, undisturbed grassland, derelict industrial land, derelict decommissioned extraction areas and the edges of urban areas (Inns 2009, Jehle *et al.* 2011). For hibernation, newts seek out a location that affords them protection from winter conditions and exploit existing opportunities within the landscape such as log piles or disused mammal burrows, rather than excavating their own sites (Natural England undated).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- G1 – Open water / Standing water;
- I2.1 – Rock exposure and waste / Artificial / Quarry (disused areas);
- J1.3 – Miscellaneous / Cultivated/disturbed land / Ephemeral/short perennial;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

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### Assessment of site location against species distribution

Great crested newts are known to occur in Dorset.

### Assessment of species habitat preference against site Phase 1 survey

Suitable terrestrial habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

No suitable breeding habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

### **Pool frog *Pelophylax lessonae***

#### Conservation status

Pool frogs are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a pool frog;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a pool frog for shelter or protection; or
- Intentionally or recklessly disturb a pool frog when occupying a structure or place which it uses for that purpose.

#### Habitat niche and equivalent Phase 1 habitats

The pool frog became extinct in England in the late 1990’s but was subsequently reintroduced in Norfolk in 2005 (Inns 2009). Whilst it is considered likely that pool frogs were historically present over much of East Anglia all other southern populations of the species are non-native (Inns 2009). The species favours groups of relatively small unshaded permanent ponds with a rich aquatic flora, in open woodland (Inns 2009) and, although some pool frogs may remain moderately close to breeding ponds throughout the year (Arnold & Burton 1978), the species is the least aquatic of all the British frogs with a typical terrestrial range of several hundred metres from the natal pond (Beebee & Griffiths 2000). Pool frogs often, if not always, hibernate on land but almost nothing is known of the types of refuge they seek (Arnold & Burton 1978, Beebee & Griffiths 2000).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub; and
- G1 – Open water / Standing water.

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Assessment of site location against species distribution

Pool frogs are not known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

N/A

**Common toad *Bufo bufo***Conservation status

Common toads are listed as Priority Species within the UK Biodiversity Action Plan.

Habitat niche and equivalent Phase 1 habitats

Common toads only enter water for a short period in the spring (Beebee & Griffiths 2000). The spring migration to their breeding ponds takes place on damp evenings in March, in a comparatively brief breeding season lasting from mid-march through to late April. When spawning is complete toads have been known to disperse up to 1.6 km from the breeding site (Sinsch 1988) and typical home ranges vary between a recorded 55 and 1,600 m from the breeding pond (Beebee & Griffiths 2000). Favoured habitats comprise rough grassland, scrub and open woodland, with improved grassland (including grazed pasture), arable fields, heathland and moorlands avoided (*Op. cit.*). Optimum pond size is approximately 1,000 m<sup>2</sup> with abundant macrophyte and emergent vegetation. As toad tadpoles are unpalatable to fish their presence does not inhibit use, and it has even been suggested (Beebee & Griffiths 2000) that toads appear to show a preference for fish ponds for breeding sites. Hibernation takes place on land, often in old rodent burrows (Inns 2009).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- D – Heathland;
- G1 – Open water / Standing water;
- I2.1 – Rock exposure and waste / Artificial / Quarry (disused areas);
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;
- J1.3 – Miscellaneous / Cultivated/disturbed land / Ephemeral/short perennial;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

Assessment of site location against species distribution

Common toads are known to occur in Dorset.

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### Assessment of species habitat preference against site Phase 1 survey

Suitable terrestrial habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

No suitable breeding habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

### **Natterjack toad *Bufo calamita***

#### Conservation status

Natterjack toads are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a natterjack toad;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a natterjack toad for shelter or protection; or
- Intentionally or recklessly disturb a natterjack toad when occupying a structure or place which it uses for that purpose.

#### Habitat niche and equivalent Phase 1 habitats

Natterjack toads have a restricted distribution, and are confined to a few sandy sites with a bias toward coastal dunes and lowland heath (Beebee & Griffiths 2000). Inns (2009) cites habitat as comprising either sandy dunes (breeding in shallow dune slacks) or heathland (breeding in sandy-bottomed pools and lake margins). Key habitat components are ephemeral ponds in combination with unshaded bare ground or close-cropped swards. The species’ call is so loud and distinctive, and it has such a restricted distribution, that all the sites in which it occurs are known.

Equivalent Phase 1 habitats comprise:-

- D – Heathland;
- H6 – Coastland / Sand dune; and
- G1 – Open water / Standing water.

#### Assessment of site location against species distribution

Natterjack toads are known to occur in Dorset.

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Assessment of species habitat preference against site Phase 1 survey

No suitable breeding or terrestrial habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

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**APPENDIX F. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF LEGALLY PROTECTED AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF REPTILE WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.****Slow-worm *Anguis fragilis***Conservation status

Slow-worms are listed as Priority Species within the UK Biodiversity Action Plan and are protected against intentional killing under the *Wildlife & Countryside Act 1981 (& as amended)*.

Habitat niche and equivalent Phase 1 habitats

Slow-worms favour an extensive ground-cover of thick vegetation with open sunny areas for basking (Arnold & Burton 1978, Beebee & Griffiths 2000, Inns 2009). Suitable habitat may include pasture, hedge-banks, scrub-land, woodland glades, heathland and even railway embankments (Arnold & Burton 1978). As slow-worms rarely bask in the open, preferring to remain semi-concealed in dense vegetation, dappled shade or under surface refuges, favoured sites often hold an abundance of logs, large flat stones, and building refuse including tiles, carpet tiles, or corrugated steel (Arnold & Burton 1978, Beebee & Griffiths 2000). Slow-worms show a predilection for white-netted slugs *Deroceras reticulatum* (an agricultural pest) and earth-worms *Lumbricus terrestris* (Luiselli 1992, English Nature 1998, Barker 2004), and this slow-moving invertebrate diet means that they are themselves sedentary, moving on average less than four metres per day, with home ranges averaging approximately 200 m<sup>2</sup> (Smith 1990). Hibernation sites are normally underground, often in disused mammal burrows (Inns 2009).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- D – Heathland;
- I2.1 – Rock exposure and waste / Artificial / Quarry (disused areas);
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable (small-scale such as allotments etc.);
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge;
- J2.3 – Miscellaneous / Boundaries / Hedge and trees; and
- J2.8 – Miscellaneous / Boundaries / Earth bank.

Assessment of site location against species distribution

Slow-worms are known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

**Common lizard *Zootoca vivipara***Conservation status

Common lizards are listed as Priority Species within the UK Biodiversity Action Plan and are protected against intentional killing under the *Wildlife & Countryside Act 1981 (& as amended)*.

Habitat niche and equivalent Phase 1 habitats

Common lizards require undisturbed ground that is topographically diverse and free from pesticide applications (Beebee & Griffiths 2000). The species favours a moderately humid environment and is typically found in open woods, hedge-banks, heaths, bogs, grassland, and railway embankments (Arnold & Burton 1978) and will bask in full sunshine, with logs and woodpiles favoured as basking sites (Beebee & Griffiths 2000). Males also show territorial behaviour around discarded car tyres (Andrews H. *Pers. obs.*). Active hunters, the adults take a variety of invertebrates including centipedes, spiders and small snails, whilst young rely upon aphids and smaller prey. Arable fields, heavily grazed pastures and dense woodland will therefore not hold lizard populations (Beebee & Griffiths 2000).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / (open) Woodland;
- A2 – Woodland and scrub / Scrub;
- B1.1 – Grassland and marsh / Acid grassland / Unimproved;
- B1.2 – Grassland and marsh / Acid grassland / Semi-improved;
- B5 – Grassland and marsh / Marsh/marshy grassland;
- D – Heathland;
- E1 – Mire / Bog;
- I2.1 – Rock exposure and waste / Artificial / Quarry (disused areas);
- J1.3 – Miscellaneous / Cultivated/disturbed land / Ephemeral/short perennial;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge;
- J2.3 – Miscellaneous / Boundaries / Hedge and trees; and
- J2.8 – Miscellaneous / Boundaries / Earth bank.

Assessment of site location against species distribution

Common lizards are known to occur in Dorset.

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Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / (open) Woodland;
- A2 – Woodland and scrub / Scrub; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

**Sand lizard *Lacerta agilis***Conservation status

Sand lizards are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a sand lizard;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a sand lizard for shelter or protection; or
- Intentionally or recklessly disturb a sand lizard when occupying a structure or place which it uses for that purpose.

Habitat niche and equivalent Phase 1 habitats

Sand lizards lay their eggs in holes dug by the females in bare sand and also hibernate in sandy burrows (Inns 2009). Favoured burrows are often shared and may be reoccupied for months and, in some cases, years (Beebee & Griffiths 2000). The species is therefore only found on sandy heaths and coastal sand-dunes (Arnold & Burton 1978, Inns 2009) where at least 1-5% of the total ground area is open sand (Beebee & Griffiths 2000). In heathland it tends to live in dense old heather into which it clammers and may be very conspicuous (Arnold & Burton 1978). The species has a strong affinity with south-facing slopes, ridges and gullies in an overall varied topography but is restricted to only a handful of sites within a very small geographical range.

Equivalent Phase 1 habitats comprise:-

- D – Heathland (with exposed sand); and
- H6 – Coastland / Sand dune.

Assessment of site location against species distribution

Sand lizards are known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

No suitable habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

## **Grass snake *Natrix natrix***

### Conservation status

Grass snakes are listed as Priority Species within the UK Biodiversity Action Plan and are protected against intentional killing under the *Wildlife & Countryside Act 1981 (& as amended)*.

### Habitat niche and equivalent Phase 1 habitats

Grass snakes actively hunt and may move up to 120 m in a single day in search of prey (Appleby 1971, Beebee & Griffiths 2000). As frogs, toads, newts and fish are their primary prey (Appleby 1971, Arnold & Burton 1978), grass snakes typically favour damp places near water, and ponds, lakes, marshes, streams or ditches are all frequented (Appleby 1971, Beebee & Griffiths 2000). The habitat in the surrounding area must also hold good ground cover with an abundance of hiding places (Beebee & Griffiths 2000) as well as south-facing basking sites. In addition, for a population to persist, suitable egg-laying sites must be present. As moisture is essential to the development of the eggs after they have been laid, a site that is permanently damp but will not become waterlogged is essential (Appleby 1971). Manure heaps and piles of decaying vegetable matter are favoured, but loose soil, individual large logs or piles of rotting logs, and even disused mammal burrows may also be used (Appleby 1971). Hibernation sites include deep leaf litter, mammal burrows, overgrown rock piles and cracks or crevices beneath the buttress roots of large trees, with south-facing sites favoured overall (Beebee & Griffiths 2000). Whilst grass snakes are occasionally recorded on hedge-banks and in heathland, individuals found in such arid habitats are often animals that are 'passing through' rather than residents (Reading 1996).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / (open) Woodland;
- A2 – Woodland and scrub / Scrub;
- B1.1 – Grassland and marsh / Acid grassland / Unimproved;
- B1.2 – Grassland and marsh / Acid grassland / Semi-improved;
- B5 – Grassland and marsh / Marsh/marshy grassland;
- D – Heathland;
- E1 – Mire / Bog;
- G1 – Open water / Standing water;
- G2 – Open water / Running water;
- I2.1 – Rock exposure and waste / Artificial / Quarry (disused areas);
- J1.3 – Miscellaneous / Cultivated/disturbed land / Ephemeral/short perennial;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

### Assessment of site location against species distribution

Grass snakes are known to occur in Dorset.

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Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / (open) Woodland;
- A2 – Woodland and scrub / Scrub; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

**Adder *Vipera berus***Conservation status

Adders are listed as Priority Species within the UK Biodiversity Action Plan and are protected against intentional killing under the *Wildlife & Countryside Act 1981 (& as amended)*.

Habitat niche and equivalent Phase 1 habitats

Adders favour low-lying river meadows for summer feeding but may also be found in a variety of other undisturbed habitat including moors, heaths and dunes, bogs, open-woods and on field-edges. Adders are active hunters, moving distances of 50-200 m per day in search of prey, principally comprising voles, mice and shrews (Arnold & Burton 1978, Beebee & Griffiths 2000) but also lizards (Appleby 1971, Arnold & Burton 1978). Adders mate soon after emergence from communal hibernacula in the late March through April period, and whilst the population will then disperse, the females return to the hibernacula from late August onward, to give birth (Beebee & Griffiths 2000). As such, the presence of suitable hibernacula, typically a disused mammal burrow within an earth bank or tumuli located in an area of dry thickly vegetated high ground (Beebee & Griffiths 2000) is essential to the maintenance of the population.

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / (open) Woodland;
- A2 – Woodland and scrub / Scrub;
- B1.1 – Grassland and marsh / Acid grassland / Unimproved;
- B1.2 – Grassland and marsh / Acid grassland / Semi-improved;
- B5 – Grassland and marsh / Marsh/marshy grassland;
- D – Heathland;
- E1 – Mire / Bog;
- H6 – Coastland / Sand dune;
- J1.3 – Miscellaneous / Cultivated/disturbed land / Ephemeral/short perennial;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge;
- J2.3 – Miscellaneous / Boundaries / Hedge and trees; and
- J2.8 – Miscellaneous / Boundaries / Earth bank.

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### Assessment of site location against species distribution

Adders are known to occur in Dorset.

### Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / (open) Woodland;
- A2 – Woodland and scrub / Scrub; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

### **Smooth snake *Coronella austriaca***

#### Conservation status

Smooth snakes are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a smooth snake;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a smooth snake for shelter or protection; or
- Intentionally or recklessly disturb a smooth snake when occupying a structure or place which it uses for that purpose.

#### Habitat niche and equivalent Phase 1 habitats

In Britain smooth snakes have only been recorded in heathland and immediately adjacent habitats such as woodland edge and grassland embankments (Arnold & Burton 1978, Inns 2009). A secretive species, the smooth snake spends much of its life underground in loose sand or abandoned mammal burrows (Beebee & Griffiths 2000) or in stands of mature heather (Inns 2009). This cryptic habit also extends to artificial refuges such as discarded corrugated steel. Where such refuges remain undisturbed in areas that are open to the sun they are readily adopted into the snakes basking regime. Rather than basking on top of the refuge, the snakes hide beneath, varying their position in proximity to the heated substrate above in response to the prevailing conditions. Smooth snakes follow a distinctly diurnal pattern of activity, hunting and basking in the early morning and late afternoon but seeking refuge underground in the middle of the day (Arnold & Burton 1978, Beebee & Griffiths 2000). Smooth snakes are constrictors and specialise on common lizards and slow-worms as prey (Appleby 1971, Arnold & Burton 1978) and (whilst they actively hunt going in search of prey (Appleby 1971)), they are the least vagrant of our native serpents with home ranges between 0.5-3 ha (Beebee & Griffiths 2000).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / (open) Woodland (in association with heathland);
- A2 – Woodland and scrub / Scrub (in association with heathland);

- B1.1 – Grassland and marsh / Acid grassland / Unimproved (in association with heathland);
- B5 – Grassland and marsh / Marsh/marshy grassland (in association with heathland); and
- D – Heathland.

#### Assessment of site location against species distribution

Smooth snakes are known to occur in Dorset.

#### Assessment of species habitat preference against site Phase 1 survey

No suitable habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

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**APPENDIX G. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF SCHEDULE 1 AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF BIRDS WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.**

| SPECIES                                                                     | CONSERVATION STATUS                                                | HABITAT NICHE                                                                                                                                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                          |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Bewick's swan</b><br><i>Cygnus columbianus</i><br>subsp. <i>bewickii</i> | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Amber List <sup>3</sup> | <b>Winter migrant:</b><br>Mid-October to end-March.<br>Lowland lakes, reservoirs & rivers with low-lying wet pasture, flooded grassland, arable & saltmarsh.<br><b>Restricted distribution:</b><br>Mainly S half England, scattered in N England, Wales, S Scotland & Ireland.     | <b>Wintering:</b><br>B5 Marsh/marshy grassland<br>G1 Standing water (lakes/reservoirs)<br>G2 Running water (rivers)<br>H2 Saltmarsh<br>J1.1 Arable | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering) |
| <b>Whooper swan</b><br><i>Cygnus cygnus</i>                                 | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>           | <b>Winter migrant:</b><br>Mid-October to mid-April.<br>Lowland arable near coast, flooded fields, lakes & sheltered inlets.<br><b>Restricted distribution:</b><br>Mainly N & E England, Scotland & Wales, scattered in S half England & Wales.                                     | <b>Wintering:</b><br>B5 Marsh/marshy grassland<br>G1 Standing water (lakes)<br>H Coastland<br><b>in association with</b><br>J1.1 Arable            | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No              |
| <b>White-fronted goose</b><br><i>Anser albifrons</i>                        | UK BAP                                                             | <b>Winter migrant:</b><br>October to April.<br>Large lowland pastures & grassland with winter crops as well as bogs.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                                                                        | <b>Wintering:</b><br>B5 Marsh/marshy grassland<br>E1 Bog<br>G1 Standing water<br>G2 Running water<br>J1.1 Arable                                   | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering) |
| <b>Brent goose</b><br><i>Branta bernicla</i><br>subsp. <i>bernicla</i>      | UK BAP<br>Amber List <sup>3</sup>                                  | <b>Winter migrant:</b><br>October to April.<br>Coastal mudflats & estuaries.<br><b>Restricted distribution:</b><br>Mainly S, E & W coasts of UK.                                                                                                                                   | <b>Wintering:</b><br>G2.6 Brackish running water<br>H1.1 Intertidal mud                                                                            | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No              |
| <b>Garganey</b><br><i>Anas querquedula</i>                                  | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>           | <b>Summer migrant:</b><br>March to October.<br>Narrow, sheltered & shallow standing freshwater, merging into grassland or wetland.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                                                          | <b>Breeding:</b><br>B5 Marsh/marshy grassland<br>F Swamp, marginal & inundation<br>G1 Standing water                                               | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No               |
| <b>Scaup</b><br><i>Aythya marila</i>                                        | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup>   | <b>Winter migrant:</b><br>Late October to March.<br>Coastal habitats - freshwaters on coast.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                                                                                                | <b>Wintering:</b><br>G1 Standing water<br><b>in association with</b><br>H Coastland                                                                | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No              |
| <b>Long-tailed duck</b><br><i>Clangula hyemalis</i>                         | <b>Schedule 1<sup>1</sup></b>                                      | <b>Winter migrant:</b><br>October to March.<br>Off-shore in deep waters.<br><b>Restricted distribution:</b><br>Mainly N & E coasts of UK.                                                                                                                                          | <b>Wintering:</b><br>H Coastland                                                                                                                   | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No              |
| <b>Common scoter</b><br><i>Melanitta nigra</i>                              | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup>   | <b>Resident (in NE Scotland).</b><br><b>Summer migrant:</b><br>June to July.<br><b>Winter migrant:</b><br>October to March.<br>Mostly marine but also inshore lochs.<br><b>Restricted distribution:</b><br><b>Breeding:</b> Scotland & Ireland.<br><b>Wintering:</b> coasts of UK. | <b>Breeding &amp; wintering:</b><br>G1 Standing water                                                                                              | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No              |

| SPECIES                                                        | CONSERVATION STATUS                                          | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                      | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
|----------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Velvet scoter<br><i>Melanitta fusca</i>                        | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>           | <b>Winter migrant:</b><br>October to March.<br>Mostly marine, occasionally mussel beds in estuaries.<br><b>Restricted distribution:</b><br>Coasts of UK.                                                                                                                                                                                                           | <b>Wintering:</b><br>G1.6 Brackish standing water<br>G2.6 Brackish running water                                                                                             | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                        |
| Red grouse<br><i>Lagopus lagopus</i><br>subsp. <i>scotica</i>  | UK BAP<br>Amber List <sup>3</sup>                            | <b>Resident.</b><br>Extensive heather moorland, heaths & raised/blanket bogs.<br><b>Restricted distribution:</b><br>Mainly N England & Scotland.                                                                                                                                                                                                                   | <b>Breeding &amp; wintering:</b><br>B Grassland<br>D Heathland (heather moor)<br>E1 Bog                                                                                      | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| Black grouse<br><i>Tetrao tetrix</i> subsp. <i>britannicus</i> | UK BAP<br>Red List <sup>2</sup>                              | <b>Resident.</b><br>Edges of upland moor, young forestry plantations & ancient pine forests.<br><b>Restricted distribution:</b><br>N England, N Wales & Scotland.                                                                                                                                                                                                  | <b>Breeding &amp; wintering:</b><br>A1.2.1 Semi-natural coniferous woodland (ancient)<br>A1.2.2 Coniferous plantation woodland (young)<br>D Heathland                        | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| Capercaillie<br><i>Tetrao urogallus</i>                        | UK BAP<br>Red List <sup>2</sup>                              | <b>Resident.</b><br>Ancient pine forest.<br><b>Restricted distribution:</b><br>N Scotland.                                                                                                                                                                                                                                                                         | <b>Breeding &amp; wintering:</b><br>A1.2.1 Semi-natural coniferous woodland (ancient)                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| Grey partridge<br><i>Perdix perdix</i>                         | UK BAP<br>Red List <sup>2</sup>                              | <b>Resident.</b><br>Lowland open grassland, farmland, thick hedgerows & field margins. Low grass with dense cover & dry areas.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                        | <b>Breeding &amp; wintering:</b><br>B Grassland<br>J1.1 Arable<br>J2 Hedgerows                                                                                               | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |
| Quail<br><i>Coturnix coturnix</i>                              | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>           | <b>Summer migrant:</b><br>April to late summer.<br>Open country - grassland & cereal fields.<br><b>Distribution:</b><br>Scattered in UK.                                                                                                                                                                                                                           | <b>Breeding:</b><br>B Grassland (open)<br>J1.1 Arable                                                                                                                        | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>Yes (breeding)             |
| Black-throated diver<br><i>Gavia arctica</i>                   | Schedule 1 <sup>1</sup><br>UK BAP<br>Amber List <sup>3</sup> | <b>Summer migrant/resident:</b><br>April to late summer.<br><b>Winter migrant:</b><br>Late autumn to March.<br><b>Breeding:</b> large inland lakes & lochs.<br><b>Wintering:</b> sheltered coastal waters, natural lakes, large rivers, lagoons & barrages.<br><b>Restricted distribution:</b><br><b>Breeding:</b> NW Scotland.<br><b>Wintering:</b> coasts of UK. | <b>Breeding:</b><br>G1 Standing water (large inland lakes/lochs)<br><b>Wintering:</b><br>G1 Standing water (lakes/lagoons)<br>G2 Running water (large rivers)<br>H Coastland | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                        |
| Balearic shearwater<br><i>Puffinus mauretanicus</i>            | UK BAP<br>Red List <sup>2</sup>                              | <b>Passage migrant:</b><br>July to September.<br>Coasts & offshore islands.<br><b>Restricted distribution:</b><br>S & E coasts of UK.                                                                                                                                                                                                                              | <b>Non-breeding passage:</b><br>H Coastland                                                                                                                                  | Distribution:<br>Yes (winter non-breeding passage)<br>Habitat Present:<br>No      |
| Leach's petrel<br><i>Oceanodroma leucorhoa</i>                 | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>           | <b>Passage migrant:</b><br>September to November.<br><b>Summer migrant:</b><br>March to late summer.<br><b>Non-breeding passage:</b><br>coastal headlands.<br><b>Breeding:</b> remote offshore islands.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b><br>coasts of UK.<br><b>Breeding:</b> N & W Scottish islands.                            | <b>Breeding &amp; non-breeding passage:</b><br>H Coastland                                                                                                                   | Distribution:<br>Yes (winter non-breeding passage)<br>Habitat Present:<br>No      |

| SPECIES                                            | CONSERVATION STATUS                                              | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                         | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
|----------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Bittern</b><br><i>Botaurus stellaris</i>        | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup> | <b>Resident.</b><br><b>Winter migrant:</b><br>October to March.<br>Freshwater swamps & margins including reedbeds, gravel-workings & riverside marshes.<br><b>Restricted distribution:</b><br><b>Breeding:</b> scattered & local in UK.<br><b>Wintering:</b> mainly S half England.                                                                                                     | <b>Breeding &amp; wintering:</b><br>B5 Marsh/marshy grassland<br>G1 Standing water<br>G2 Running water<br>F1 Swamp<br>F2 Marginal vegetation<br>I2.1 Quarry (gravel-workings)                                       | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                        |
| <b>Little bittern</b><br><i>Ixobrychus minutus</i> | <b>Schedule 1<sup>1</sup></b>                                    | <b>Rare summer migrant (has been known to breed in UK):</b><br>April to June (sometimes October).<br>Freshwater swamps, reedbed, fringes of lakes or pools.<br><b>Restricted distribution:</b><br>Very rare in UK. Only recorded breeding in Yorkshire (1984) & Somerset (2010-2013).                                                                                                   | <b>Breeding:</b><br>F1 Swamp<br>F2 Marginal vegetation<br>G1 Standing water (lakes/pools)<br><b>with <i>Alnus glutinosa</i>, <i>Salix</i> sp. &amp; other deciduous trees</b>                                       | Distribution:<br>Yes (rare non-breeding passage)<br>Habitat Present:<br>No        |
| <b>Purple heron</b><br><i>Ardea purpurea</i>       | <b>Schedule 1<sup>1</sup></b>                                    | <b>Rare passage migrant (has been known to breed in UK):</b><br>April/May to late summer.<br>Marsh, reedbed & wetland.<br>On passage often on open riverbanks, seashore, sand-spits & short grassland.<br><b>Restricted distribution:</b><br>Scattered in UK. Recorded as breeding in Dungeness, Kent only (2010).                                                                      | <b>Breeding &amp; non-breeding passage:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>F1 Swamp<br>F2 Marginal vegetation<br><b>in association with</b><br>G1 Standing water<br>G2 Running water<br>H Coastland | Distribution:<br>Yes (rare non-breeding passage)<br>Habitat Present:<br>No        |
| <b>Spoonbill</b><br><i>Platalea leucorodia</i>     | <b>Schedule 1<sup>1</sup></b>                                    | <b>Winter migrant:</b><br>October to March.<br><b>Rare passage migrant (has been known to breed in UK):</b><br>March to October.<br>Coastal marshes, estuaries & lagoons.<br><b>Restricted distribution:</b><br><b>Wintering:</b> S half England, Wales & S Ireland, mainly coastal sites.<br><b>Breeding:</b> E Anglia & Scotland.<br><b>Non-breeding passage:</b><br>scattered in UK. | <b>Wintering, non-breeding passage &amp; breeding:</b><br>B5 Marsh/marshy grassland<br>G1.6 Brackish standing water<br>G2.6 Brackish running water<br>H Coastland                                                   | Distribution:<br>Yes (wintering & non-breeding passage)<br>Habitat Present:<br>No |
| <b>Slavonian grebe</b><br><i>Podiceps auritus</i>  | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Resident.</b><br><b>Winter migrant:</b><br>October to March.<br>Lochs, marshes, lakes, streams & coastal areas.<br><b>Restricted distribution:</b><br><b>Breeding:</b> Scottish Highlands.<br><b>Wintering:</b> coasts of UK.                                                                                                                                                        | <b>Breeding &amp; wintering:</b><br>F1 Swamp<br>F2 Marginal vegetation<br>G1 Standing water (lakes/lochs)<br>G2 Running water (streams)<br>H Coastland                                                              | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                        |

| SPECIES                                                  | CONSERVATION STATUS                                      | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                      | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                |
|----------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Black-necked grebe</b><br><i>Podiceps nigricollis</i> | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Summer migrant:</b><br>March to October.<br><b>Winter migrant:</b><br>October to March.<br><b>Breeding:</b> sheltered, shallow inland lakes fringed with water-plants.<br><b>Wintering:</b> sheltered coastal waters, large open reservoirs, flooded gravel-pits & estuaries.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly central & E England.<br><b>Wintering:</b> mainly S half England. | <b>Breeding:</b><br>G1 Standing water (shallow inland lakes) <b>in association with</b><br>F2 Marginal vegetation<br><b>Wintering:</b><br>G1 Standing water (open reservoirs)<br>G2 Running water (estuaries)<br>H Coastland<br>I2.1 Quarry (flooded gravel pit) | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                                    |
| <b>Red kite</b><br><i>Milvus milvus</i>                  | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Resident.</b><br>Small to medium deciduous woodlands in arable farmland.<br><b>Restricted distribution:</b><br>Scattered but local populations in UK.                                                                                                                                                                                                                                                        | <b>Breeding &amp; wintering:</b><br>A1.1.1 Broadleaved semi-natural woodland <b>in association with</b><br>B Grassland<br><b>&amp;/or</b><br>J1.1 Arable                                                                                                         | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)             |
| <b>White-tailed eagle</b><br><i>Haliaeetus albicilla</i> | <b>Schedule 1<sup>1</sup></b><br>Red List <sup>2</sup>   | <b>Resident.</b><br>Sea coasts, lake shores, broad rivers, islands & wetlands.<br><b>Restricted distribution:</b><br>Scotland, Scottish Islands & Ireland.                                                                                                                                                                                                                                                      | <b>Breeding &amp; wintering:</b><br>F1 Swamp<br>G1 Standing water<br>G2 Running water<br>H Coastland                                                                                                                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A                                                |
| <b>Marsh harrier</b><br><i>Circus aeruginosus</i>        | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Resident.</b><br><b>Summer migrant:</b><br>April to October. Migrants occasionally overwinter in UK.<br>Margins of lakes & rivers, wetlands, reedbeds, arable farmland, marshes & wet pasture.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly E England.<br><b>Wintering:</b> mainly S & E England.                                                                                           | <b>Breeding &amp; wintering:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>F1 Swamp<br>F2 Marginal vegetation<br>G1 Standing water (lakes)<br>G2 Running water (rivers)<br>J1.1 Arable                                                                      | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)             |
| <b>Hen harrier</b><br><i>Circus cyaneus</i>              | <b>Schedule 1<sup>1</sup></b><br>Red List <sup>2</sup>   | <b>Resident.</b><br><b>Winter migrant:</b><br>October to March.<br><b>Breeding:</b> young conifer plantations, upland heather moors.<br><b>Wintering:</b> arable farmland, rough pastures, heathland, coastal sand dunes & marshy areas.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly N England, Wales, Scotland & Ireland.<br><b>Wintering:</b> widespread in UK.                             | <b>Breeding:</b><br>A1.2.2 Coniferous plantation woodland (young)<br>D Heathland (upland)<br><b>Wintering:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br>J1.1 Arable<br>H Coastland                                                          | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering)                       |
| <b>Montagu's harrier</b><br><i>Circus pygargus</i>       | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Summer migrant:</b><br>May to August.<br>Fens, wet heath, dunes, arable farmland & young conifer plantation.<br><b>Restricted distribution:</b><br>S & E England.                                                                                                                                                                                                                                            | <b>Breeding:</b><br>A2.2 Coniferous plantation woodland (young)<br>B5 Marsh/marshy grassland<br>D2 Wet heathland<br>E3 Fen<br>H2 Sand dune<br>J1.1 Arable                                                                                                        | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>Yes (non-breeding passage) |

| SPECIES                                         | CONSERVATION STATUS                                      | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
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| <b>Honey buzzard</b><br><i>Pernis apivorus</i>  | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Summer migrant:</b><br>Mid-May to mid-August.<br><b>Passage migrant.</b><br>Lowland deciduous or mixed woodlands & upland conifer plantation with ample clearings glades & rides on light soils.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                                                                                                                 | <b>Breeding &amp; non-breeding passage:</b><br>A1.1 Broadleaved woodland (lowland)<br>A1.2.2 Coniferous plantation woodland (upland)<br>A1.3 Mixed woodland (lowland)<br><b>with</b> clearings, glades & rides                                               | Distribution:<br>Yes (breeding & non-breeding passage)<br>Habitat Present:<br>No  |
| <b>Goshawk</b><br><i>Accipiter gentilis</i>     | <b>Schedule 1<sup>1</sup></b>                            | <b>Resident.</b><br>Large mature woods & forests (both coniferous & deciduous). Hunts in open countryside. Favours areas where woodland is interspersed with fields, hedgerows & even wetlands.<br><b>Restricted distribution:</b><br>Mainly N England & Wales, scattered in S & E England & E Scotland.                                                                                                   | <b>Breeding &amp; wintering:</b><br>A1 Woodland (all types)<br><b>in association with</b><br>B Grassland<br>J1.1 Arable<br>J2 Hedgerows                                                                                                                      | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |
| <b>Golden eagle</b><br><i>Aquila chrysaetos</i> | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Resident.</b><br>Nests in mountainous upland areas, moorland, open coniferous forest & on sea-cliffs.<br><b>Restricted distribution:</b><br>Scottish Highlands & islands.                                                                                                                                                                                                                               | <b>Breeding &amp; wintering:</b><br>A1.2 Coniferous forest (open)<br>C2 Upland species-rich ledges<br>D4 Montane heath/dwarf herb<br>H8.1 Maritime hard cliff & slope<br>I1.1 Inland cliff                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| <b>Osprey</b><br><i>Pandion haliaetus</i>       | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Summer migrant:</b><br>March to mid-August. Inland lakes, large rivers coastal lagoons, flooded gravel-pits & estuaries. Require mature trees for nesting.<br><b>Passage migrant.</b><br><b>Restricted distribution:</b><br><b>Breeding:</b> N England, Rutland Water, Leicestershire, N Wales & Scotland.<br><b>Non-breeding passage:</b><br>scattered in UK.                                          | <b>Breeding &amp; non-breeding passage:</b><br>A3 Scattered trees (mature)<br><b>in association with</b><br>G1 Standing water (inland lakes/coastal lagoons)<br>G2 Running water (large rivers/estuaries)<br>H Coastland<br>I2.1 Quarry (flooded gravel-pit) | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No             |
| <b>Merlin</b><br><i>Falco columbarius</i>       | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Resident.</b><br><b>Winter migrant:</b><br>October to April.<br><b>Breeding:</b> uplands or heather-dominated moorland, also mature conifer plantations.<br><b>Wintering:</b> open low-lying country including farmland & coastal areas, also reedbeds, bogs & lowland heaths.<br><b>Distribution:</b><br><b>Breeding:</b> mainly N England, N Wales & Scotland.<br><b>Wintering:</b> widespread in UK. | <b>Breeding:</b><br>A1.2.2 Coniferous plantation woodland (mature)<br>B1 Acid grassland<br>D Heathland (upland)<br><b>Wintering:</b><br>D Heathland (lowland)<br>E1 Bog<br>F1 Swamp<br>H Coastland<br>J1.1 Arable                                            | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering)           |

| SPECIES                                                   | CONSERVATION STATUS                                              | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                         | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE             |
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| <b>Hobby</b><br><i>Falco subbuteo</i>                     | <b>Schedule 1<sup>1</sup></b>                                    | <b>Summer migrant:</b><br>April to October.<br>Mature trees or woodland edges on heathland.<br><b>Restricted distribution:</b><br>Mainly S half of England & Wales.                                                                                                                                                                                                                                                                        | <b>Breeding:</b><br>A1 Woodland (edge)<br>A3 Scattered trees (mature)<br><b>in association with</b><br>D Heathland                                                                                  | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No  |
| <b>Gyr falcon</b><br><i>Falco rusticolus</i>              | <b>Schedule 1<sup>1</sup></b>                                    | <b>Rare vagrant:</b><br>September to May.<br>Sea coasts.<br><b>Restricted distribution:</b><br>Scattered records in UK.                                                                                                                                                                                                                                                                                                                    | <b>Non-breeding passage:</b><br>H Coastland                                                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A             |
| <b>Peregrine</b><br><i>Falco peregrinus</i>               | <b>Schedule 1<sup>1</sup></b>                                    | <b>Resident.</b><br><b>Breeding:</b> crags or other rock-faces in uplands, sea-cliffs, quarries & buildings in towns.<br><b>Wintering:</b> marshes.<br><b>Distribution:</b><br><b>Breeding:</b> scattered in UK.<br><b>Wintering:</b> widespread in UK.                                                                                                                                                                                    | <b>Breeding:</b><br>C2 Upland species-rich ledges<br>D Heathland<br>H8.1 Maritime hard cliffs<br>I1 Inland cliff<br>I2.1 Quarry<br>J2.6 Buildings<br><b>Wintering:</b><br>B5 Marsh/marshy grassland | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No  |
| <b>Spotted crake</b><br><i>Porzana porzana</i>            | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Summer migrant:</b><br>Mid-April to September.<br>Large freshwater marshes & wetlands.<br><b>Restricted distribution:</b><br>Scattered but rare in UK.                                                                                                                                                                                                                                                                                  | <b>Breeding:</b><br>B5 Marsh/marshy grassland<br>F1 Swamp                                                                                                                                           | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No  |
| <b>Corncrake</b><br><i>Crex crex</i>                      | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup> | <b>Summer migrant:</b><br>Mid-April to August.<br>Thick & low vegetation in meadows, rough pasture & fens (but avoids wet places).<br><b>Restricted distribution:</b><br>Mainly NW coast Scotland & Ireland.                                                                                                                                                                                                                               | <b>Breeding:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>C3.1 Tall ruderal<br>E3 Fen                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A             |
| <b>Black-winged stilt</b><br><i>Himantopus himantopus</i> | <b>Schedule 1<sup>1</sup></b>                                    | <b>Rare passage migrant (has been known to breed in UK):</b><br>March/April to August.<br>Shallow freshwater lake edges or reedy pools, marshes, swamps, riverbeds, flooded fields, brackish wetlands or pools, estuaries with extensive areas of mudflats, coastal lagoons & marshes & salt meadows/pans.<br><b>Restricted distribution:</b><br><b>Breeding:</b> Cheshire & Cornwall.<br><b>Non-breeding passage:</b><br>scattered in UK. | <b>Breeding &amp; non-breeding passage:</b><br>B5 Marsh/marshy grassland<br>F1 Swamp<br>G1 Standing water (freshwater/brackish)<br>G2 Running water (rivers/estuaries)<br>H Coastland               | Distribution:<br>No<br>Habitat Present:<br>N/A             |
| <b>Avocet</b><br><i>Recurvirostra avoetia</i>             | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Resident.</b><br><b>Winter migrant:</b><br>September/October to March.<br><b>Breeding:</b> shallow brackish coastal lagoons & mudflats.<br><b>Wintering:</b> estuaries with fine silt substrate.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly E coast England.<br><b>Wintering:</b> mainly SW coast England.                                                                                                           | <b>Breeding:</b><br>G1.6 Brackish standing water (coastal lagoons)<br><b>in association with</b><br>H Coastland<br><b>Wintering:</b><br>G2.6 Brackish running water (estuaries)                     | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No |

| SPECIES                                          | CONSERVATION STATUS                                          | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                   | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
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| Stone-curlew<br><i>Burhinus oedicnemus</i>       | Schedule 1 <sup>1</sup><br>UK BAP<br>Amber List <sup>3</sup> | <b>Summer migrant:</b><br>March to August/September.<br>Dry open sites with bare stony ground such as on very short semi-improved grassland, grazing pasture or arable with spring-sown crops.<br><b>Restricted distribution:</b><br>E Anglian Breckland & around Salisbury Plain, Wiltshire.                                                                                                                                                                                            | <b>Breeding:</b><br>B2 Neutral grassland<br>B3 Calcareous grassland<br>J1.1 Arable                                                                                                                                                                            | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| Little ringed-plover<br><i>Charadrius dubius</i> | Schedule 1 <sup>1</sup>                                      | <b>Summer migrant:</b><br>March to June/July.<br>Shallow, standing & slow-flowing freshwater shingle rivers & man-made habitats close to freshwater especially sand & gravel quarries & reservoirs.<br><b>Restricted distribution:</b><br>Scattered in S half England & Wales, rare in N England & Scotland.                                                                                                                                                                             | <b>Breeding:</b><br>G1 Standing water (reservoirs)<br>G2 Running water (shingle rivers)<br><b>in association with</b><br>I2.1 Quarry (sand/gravel)                                                                                                            | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No                         |
| Kentish plover<br><i>Charadrius alexandrinus</i> | Schedule 1 <sup>1</sup>                                      | <b>Rare passage migrant:</b><br>April/May &/or August/September.<br>Coastal sites - shingle & sandy beaches with muddy pools, lakes, lagoons & seasonal watercourses with minimal marginal vegetation.<br><b>Restricted distribution:</b><br>Mainly S & E coasts UK.                                                                                                                                                                                                                     | <b>Non-breeding passage:</b><br>G1 Standing water (muddy pools/lakes/lagoons)<br>G2 Running water (seasonal)<br><b>in association with</b><br>H Coastland                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| Dotterel<br><i>Charadrius morinellus</i>         | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>           | <b>Summer migrant:</b><br>Mid-April/May to July/August.<br><b>Rare passage migrant:</b><br>August & September.<br><b>Breeding:</b> open, wide plateaux on largely barren (sparsely vegetated) heathy uplands or mountain ridges/tops.<br><b>Non-breeding passage:</b> low-lying arable farmland, hills & areas with short grass.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly Grampian Mountains & Scottish Highlands.<br><b>Non-breeding passage:</b> scattered in UK. | <b>Breeding:</b><br>C2 Upland species-rich ledges<br>D4 Montane heath/dwarf herb<br>I1 Natural rock exposures<br><b>with</b> <i>Calluna</i> & <i>Erica</i> sp. & <i>Racomitrium lanuginosum</i><br><b>Non-breeding passage:</b><br>B Grassland<br>J1.1 Arable | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| Lapwing<br><i>Vanellus vanellus</i>              | UK BAP<br>Red List <sup>2</sup>                              | <b>Resident.</b><br>Cultivated farmland, pasture, wet grassland, fen, bog & marsh.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                                                                                                                                                                                          | <b>Breeding &amp; wintering:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>E1 Bog<br>E3 Fen<br>J1.1 Arable                                                                                                                                               | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |

| SPECIES                                        | CONSERVATION STATUS                                        | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE             |
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| Temminck's stint<br><i>Calidris temminckii</i> | Schedule 1 <sup>1</sup><br>Red List <sup>2</sup>           | <b>Rare passage migrant (has been known to breed in UK):</b><br>May to mid-June & end-July to October.<br><b>Breeding:</b> flat ground clear of vegetation or very short grass in close proximity to water.<br><b>Non-breeding passage:</b> edges of freshwater lakes, pools & marshes, also creeks, brackish lagoons & estuaries on coast.<br><b>Restricted distribution:</b><br><b>Breeding:</b> secret sites in Scotland.<br><b>Non-breeding passage:</b> scattered but local in UK. | <b>Breeding:</b><br>B Grassland<br>I1 Natural rock exposures<br><b>in association with</b><br>G Open water<br><b>with <i>Salix</i> sp. &amp; <i>Empetrum nigrum</i></b><br><b>Non-breeding passage:</b><br>G1 Standing water (freshwater/brackish lakes/pools)<br>G2 Running water (creeks/estuaries)<br><b>in association with</b><br>H Coastland | Distribution:<br>No<br>Habitat Present:<br>N/A             |
| Purple sandpiper<br><i>Calidris maritima</i>   | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>         | <b>Winter migrant:</b><br>October to April/May.<br><b>Small population breeds in Scotland.</b><br><b>Wintering:</b> exposed, shallow rocky shores, wave-cut platforms & stony beaches or mussel-beds.<br><b>Breeding:</b> montane heath with sedges, mosses, lichens amongst rocks, scree & gravel.<br><b>Restricted distribution:</b><br><b>Wintering:</b> coasts of UK.<br><b>Breeding:</b> Scottish Highlands.                                                                       | <b>Wintering:</b><br>H1 Intertidal<br><b>Breeding:</b><br>C2 Upland species-rich ledges<br>D4 Montane heath/dwarf herb<br>I1 Natural rock exposures                                                                                                                                                                                                | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No |
| Ruff<br><i>Calidris pugnax</i>                 | Schedule 1 <sup>1</sup><br>Red List <sup>2</sup>           | <b>Resident.</b><br><b>Winter migrant:</b><br>August/September to March.<br><b>Breeding:</b> lowland wet meadows grazed in summer & flooded in winter.<br><b>Wintering:</b> inland & coastal sites - freshwater marshes & wet grassland near to estuaries, muddy fringes of pools or lakes & brackish coastal lagoons.<br><b>Restricted distribution:</b><br><b>Breeding:</b> E Anglian fenland, NW England, Hebrides & Shetland.<br><b>Wintering:</b> scattered but local in UK.       | <b>Breeding:</b><br>B5 Marsh/marshy grassland<br><b>Wintering:</b><br>B5 Marsh/marshy grassland<br>G1 Standing water (freshwater/brackish pools/lakes/lagoons)<br>G2.6 Brackish running water (estuaries)                                                                                                                                          | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No |
| Black-tailed godwit<br><i>Limosa limosa</i>    | Schedule 1 <sup>1</sup><br>UK BAP<br>Red List <sup>2</sup> | <b>Resident (in SE coast England).</b><br><b>Summer migrant:</b><br>March to July.<br><b>Winter migrant:</b><br>September to March.<br><b>Breeding:</b> marshes, bogs & damp meadows near lakes.<br><b>Wintering:</b> muddy estuaries on coast.<br><b>Restricted distribution:</b><br><b>Breeding:</b> E Anglia, Kent & N & SW England.<br><b>Wintering:</b> scattered in UK.                                                                                                           | <b>Breeding:</b><br>B5 Marsh/marshy grassland<br>E1 Bog<br><b>in association with</b><br>G1 Standing water<br><b>Wintering:</b><br>G2.6 Brackish running water (estuaries)<br><b>in association with</b><br>H Coastland                                                                                                                            | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No |

| SPECIES                                          | CONSERVATION STATUS                                      | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                               | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                  |
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| <b>Whimbrel</b><br><i>Numenius phaeopus</i>      | <b>Schedule 1<sup>1</sup></b><br>Red List <sup>2</sup>   | <p><b>Passage migrant:</b><br/>Mid-April to May &amp; July to September.</p> <p><b>Winter migrant:</b><br/>October to March.</p> <p><b>Summer migrant:</b><br/>Mid-April to July/August.</p> <p><b>Non-breeding passage &amp; wintering:</b> coastal habitats - estuaries, coastal grasslands &amp; saltmarshes. Also inland reservoirs.</p> <p><b>Breeding:</b> blanket bogs, old peat cuttings, short heather &amp; unimproved grassland on northern moors.</p> <p><b>Restricted distribution:</b><br/><b>Non-breeding passage &amp; wintering:</b> scattered along coasts of UK.</p> <p><b>Breeding:</b> N Scotland, Shetland &amp; Orkney Islands.</p> | <p><b>Non-breeding passage &amp; wintering:</b><br/>G1 Standing water (reservoirs)<br/>G2.6 Brackish running water (estuaries)<br/>H Coastland</p> <p><b>Breeding:</b><br/>B Grassland (unimproved)<br/>D Heathland<br/>E Mire</p> <p><b>with</b> <i>Calluna vulgaris</i> &amp; <i>Eriophorum</i> sp.</p> | <p>Distribution:<br/>Yes (wintering &amp; non-breeding passage)<br/>Habitat Present:<br/>No</p> |
| <b>Curlew</b><br><i>Numenius arquata</i>         | UK BAP<br>Amber List <sup>3</sup>                        | <p><b>Resident (in E England).</b><br/><b>Summer migrant:</b><br/>April to July.</p> <p><b>Winter migrant:</b><br/>July to March/April.</p> <p><b>Breeding:</b> upland boggy, grassy &amp; heather moor, hill pasture, hay meadows &amp; coastal marshes. Also lowland agricultural land.</p> <p><b>Wintering:</b> coastal sites, especially estuaries &amp; wet meadows.</p> <p><b>Restricted distribution:</b><br/><b>Breeding:</b> mainly N England, Wales &amp; Scotland.<br/><b>Wintering:</b> scattered in UK, mostly coastal.</p>                                                                                                                   | <p><b>Breeding:</b><br/>B Grassland<br/>B5 Marsh/marshy grassland<br/>D Heathland<br/>E1 Bog<br/>H3 Saltmarsh<br/>J1.1 Arable (lowland)</p> <p><b>Wintering:</b><br/>B5 Marsh/marshy grassland<br/>G2.6 Brackish running water</p> <p><b>in association with</b><br/>H Coastland</p>                      | <p>Distribution:<br/>Yes (breeding &amp; wintering)<br/>Habitat Present:<br/>No</p>             |
| <b>Green sandpiper</b><br><i>Tringa ochropus</i> | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <p><b>Winter migrant:</b><br/>June/July to March.</p> <p><b>Passage migrant (has been known to breed in UK):</b><br/>March to June.</p> <p><b>Wintering:</b> marshes, muddy fringes of lakes, reservoirs, flood waters, rivers, gravel pits, ditches on lowland farmland. Also coastal estuaries &amp; marshes.</p> <p><b>Breeding:</b> wet woods &amp; open forests.</p> <p><b>Restricted distribution:</b><br/><b>Wintering:</b> mainly S half England.<br/><b>Breeding:</b> Scotland.</p>                                                                                                                                                               | <p><b>Wintering &amp; non-breeding passage:</b><br/>B5 Marsh/marshy grassland<br/>G1 Standing water (lake/reservoir)<br/>G2 Running water (river/ditch/estuaries)<br/>I2.1 Quarry (gravel pit)<br/>J1.1 Arable</p> <p><b>Breeding:</b><br/>A1 Woodland (wet &amp; open forests)</p>                       | <p>Distribution:<br/>Yes (wintering &amp; non-breeding passage)<br/>Habitat Present:<br/>No</p> |

| SPECIES                                           | CONSERVATION STATUS                                     | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                               | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                  |
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| Wood sandpiper<br><i>Tringa glareola</i>          | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>      | <p><b>Passage migrant (has been known to breed in UK):</b><br/>Late-April to September.</p> <p><b>Non-breeding passage:</b> lake edges, reservoirs, flooded grasslands &amp; brackish pools.</p> <p><b>Breeding:</b> marshes, swamps in lightly wooded country, forest fringes or flooded birch woods.</p> <p><b>Restricted distribution:</b></p> <p><b>Non-breeding passage:</b> scattered in UK.</p> <p><b>Breeding:</b> Scottish Highlands.</p>                                                                                                                                                   | <p><b>Non-breeding passage:</b><br/>B5 Marsh/marshy grassland<br/>G1 Standing water (lake/reservoir/brackish pool)</p> <p><b>Breeding:</b><br/>A1 Woodland<br/>B5 Marsh/marshy grassland<br/>F1 Swamp</p>                                                                                                                                                                 | <p>Distribution:<br/>Yes (non-breeding passage)<br/>Habitat Present:<br/>No</p>                 |
| Greenshank<br><i>Tringa nebularia</i>             | Schedule 1 <sup>1</sup>                                 | <p><b>Summer migrant:</b><br/>April to August.</p> <p><b>Winter migrant:</b><br/>October to March.</p> <p><b>Passage migrant:</b><br/>April/May &amp; July to September.</p> <p><b>Breeding:</b> boggy upland moorland &amp; peat moors, usually near small pools.</p> <p><b>Wintering:</b> margins of lakes, rivers, reservoirs, estuaries &amp; coastal marshes.</p> <p><b>Restricted distribution:</b></p> <p><b>Breeding:</b> NW Scotland &amp; Islands.</p> <p><b>Wintering:</b> scattered along coasts of UK.</p> <p><b>Non-breeding passage:</b> scattered in UK.</p>                         | <p><b>Breeding:</b><br/>D4 Montane heath/dwarf shrub<br/>E1 Bog</p> <p><b>in association with</b><br/>G1 Standing water</p> <p><b>Wintering &amp; non-breeding passage:</b><br/>B5 Marsh/marshy grassland<br/>G1 Standing water (lake/reservoir)<br/>G2 Running water (river/estuaries)</p> <p><b>in association with</b><br/>H Coastland</p>                             | <p>Distribution:<br/>Yes (wintering &amp; non-breeding passage)<br/>Habitat Present:<br/>No</p> |
| Red-necked phalarope<br><i>Phalaropus lobatus</i> | Schedule 1 <sup>1</sup><br>UK BAP Red List <sup>2</sup> | <p><b>Rare passage migrant:</b><br/>August &amp; September.</p> <p><b>Summer migrant (in N &amp; W Isles of Scotland):</b><br/>May to July/August.</p> <p><b>Non-breeding passage:</b> inland &amp; coastal freshwater &amp; brackish pools or wetland sites.</p> <p><b>Breeding:</b> small, shallow freshwater marshy pools with emergent vegetation, flooded peat cuttings, also damp grazing pasture.</p> <p><b>Restricted distribution:</b></p> <p><b>Non-breeding passage:</b> scattered mainly in central &amp; E England.</p> <p><b>Breeding:</b> N Scotland, N &amp; W Scottish Islands.</p> | <p><b>Non-breeding passage:</b><br/>F Swamp, marginal &amp; inundation<br/>G1 Standing water (freshwater/brackish pools)</p> <p><b>in association with</b><br/>H Coastland</p> <p><b>Breeding:</b><br/>B5 Marsh/marshy grassland<br/>E4 Bare peat</p> <p><b>in association with</b><br/>G1 Standing water (freshwater pools) &amp; F Swamp, marginal &amp; inundation</p> | <p>Distribution:<br/>No<br/>Habitat Present:<br/>N/A</p>                                        |

| SPECIES                                           | CONSERVATION STATUS                                | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                   | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                     |
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| Arctic skua<br><i>Stercorarius parasiticus</i>    | UK BAP<br>Red List <sup>2</sup>                    | <p><b>Passage migrant:</b><br/>August &amp; September.</p> <p><b>Winter migrant:</b><br/>September to November.</p> <p><b>Summer migrant:</b><br/>May to July.</p> <p><b>Non-breeding passage &amp; wintering:</b> warm coastal waters.</p> <p><b>Breeding:</b> coastal moorland &amp; offshore islands.</p> <p><b>Restricted distribution:</b><br/><b>Non-breeding passage &amp; wintering:</b> scattered along coasts of UK.</p> <p><b>Breeding:</b> N &amp; W Scotland &amp; Islands.</p>                      | <p><b>Non-breeding passage, wintering &amp; breeding:</b><br/>H Coastland</p>                                                                                                                                                                                                                                                                                 | <p>Distribution:<br/>Yes (wintering &amp; non-breeding passage)<br/>Habitat Present:<br/>No</p>    |
| Mediterranean gull<br><i>Larus melanocephalus</i> | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup> | <p><b>Resident.</b></p> <p><b>Winter migrant:</b><br/>July to March.</p> <p><b>Breeding:</b> marshes, around lagoons near coast, fields, grasslands near inland lakes &amp; wetlands.</p> <p><b>Wintering:</b> coastal areas on beaches &amp; nearby fields.</p> <p><b>Restricted distribution:</b><br/><b>Breeding:</b> scattered but local in UK.</p> <p><b>Wintering:</b> scattered in UK, mainly coastal.</p>                                                                                                 | <p><b>Breeding:</b><br/>B Grassland<br/>B5 Marsh/marshy grassland<br/>F Swamp, marginal &amp; inundation<br/>G1 Standing water<br/>H Coastland<br/>J1.1 Arable</p> <p><b>Wintering:</b><br/>H Coastland</p>                                                                                                                                                   | <p>Distribution:<br/>Yes (resident)<br/>Habitat Present:<br/>Yes (breeding)<br/>No (wintering)</p> |
| Little gull<br><i>Hydrocoloeus minutus</i>        | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup> | <p><b>Winter migrant:</b><br/>July to April.</p> <p>Seacoasts, estuaries, lakes &amp; reservoirs near coast &amp; sometimes inland.</p> <p><b>Restricted distribution:</b><br/>Scattered in UK, mainly coastal.</p>                                                                                                                                                                                                                                                                                               | <p><b>Wintering:</b><br/>G1 Standing water (lake/reservoir)<br/>G2 Running water (estuaries)<br/><b>in association with</b><br/>H Coastland</p>                                                                                                                                                                                                               | <p>Distribution:<br/>Yes (wintering)<br/>Habitat Present:<br/>No</p>                               |
| Herring gull<br><i>Larus argentatus</i>           | UK BAP<br>Red List <sup>2</sup>                    | <p><b>Resident.</b></p> <p><b>Winter migrant:</b><br/>October to March.</p> <p><b>Breeding:</b> mainly coastal - cliffs, beaches, shingle islands, moorland, parkland &amp; buildings. Feeds in inshore waters &amp; offshore fishing grounds, urban rubbish tips &amp; playing fields.</p> <p><b>Wintering:</b> reservoirs &amp; estuaries, rubbish-tips, parks &amp; playing fields.</p> <p><b>Distribution:</b><br/><b>Breeding:</b> mainly along coasts of UK.</p> <p><b>Wintering:</b> widespread in UK.</p> | <p><b>Breeding:</b><br/>A3 Parkland/scattered trees<br/>B Grassland<br/>G1 Standing water<br/>H Coastland<br/>I2.4 Refuse-tip<br/>J1.2 Amenity grassland<br/>J3.6 Buildings</p> <p><b>Wintering:</b><br/>A3 Parkland/scattered trees<br/>G1 Standing water<br/>G2.6 Brackish running water<br/>H Coastland<br/>I2.4 Refuse-tip<br/>J1.2 Amenity grassland</p> | <p>Distribution:<br/>Yes (resident)<br/>Habitat Present:<br/>No</p>                                |
| Little tern<br><i>Sternula albifrons</i>          | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup> | <p><b>Summer migrant:</b><br/>April to September.</p> <p><b>Passage migrant.</b></p> <p><b>Breeding:</b> shingle &amp; sandy beaches.</p> <p><b>Non-breeding passage:</b> coastal areas, rivers &amp; lakes.</p> <p><b>Restricted distribution:</b><br/><b>Breeding:</b> scattered but local along coasts of UK.</p> <p><b>Non-breeding passage:</b> scattered in UK.</p>                                                                                                                                         | <p><b>Breeding:</b><br/>H3 Shingle above high tide mark<br/>H6 Sand dune</p> <p><b>Non-breeding passage:</b><br/>G1 Standing water (lake)<br/>G2 Running water (river)<br/>H Coastland</p>                                                                                                                                                                    | <p>Distribution:<br/>Yes (breeding &amp; non-breeding passage)<br/>Habitat Present:<br/>No</p>     |

| SPECIES                                          | CONSERVATION STATUS                                              | HABITAT NICHE                                                                                                                                                                                                                                                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                          | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
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| <b>Black tern</b><br><i>Chlidonias niger</i>     | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Passage migrant:</b><br>May & July to September.<br>Freshwater lakes, gravel pits & reservoirs.<br><b>Restricted distribution:</b><br>Scattered in UK.                                                                                                                                     | <b>Non-breeding passage:</b><br>G1 Standing water (lake/reservoir)<br>I2.1 Quarry (gravel pit)                                                                                                                                                       | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No             |
| <b>Roseate tern</b><br><i>Sterna dougallii</i>   | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup> | <b>Summer migrant:</b><br>Mid-May to August.<br>Coastal sites - small offshore sandy or rocky islands, close to shore.<br><b>Restricted distribution:</b><br>Scattered but local along coasts of UK.                                                                                          | <b>Breeding:</b><br>H Coastland                                                                                                                                                                                                                      | Distribution:<br>Yes (breeding & non-breeding passage)<br>Habitat Present:<br>No  |
| <b>Turtle dove</b><br><i>Streptopelia turtur</i> | UK BAP<br>Red List <sup>2</sup>                                  | <b>Summer migrant:</b><br>Late-April to September.<br>Open woods, woodland edge, large hedgerows, heaths with clumps of trees, small plantations, orchards, large gardens & parkland.<br>Preferably near arable or weedy fields.<br><b>Restricted distribution:</b><br>Mainly S & E England.  | <b>Breeding:</b><br>A1.1/A1.3 Woodland (edge)<br>A1.1.2 Broadleaved plantation woodland (orchard)<br>A3 Parkland/scattered trees<br>D Heathland<br>J1 Cultivated/disturbed land<br>J2 Hedgerows<br><b>in association with</b><br>J1.1 Arable         | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>Yes (breeding)             |
| <b>Cuckoo</b><br><i>Cuculus canorus</i>          | UK BAP<br>Red List <sup>2</sup>                                  | <b>Summer migrant:</b><br>Late-March to August.<br>Favours reedbed, moorland, woodland, scrub & agricultural land. Also large parks.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                             | <b>Breeding:</b><br>A1 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>D Heathland<br>F Swamp, marginal & inundation<br>J1.1 Arable                                                                                                           | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>Yes (breeding)             |
| <b>Barn owl</b><br><i>Tyto alba</i>              | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Resident.</b><br>Open country - farmland, coastal marshes & forest edge with rough grassland, ponds, ditches, riverbanks, railway embankments, roadside verges & hedgerows. Nests in buildings, barns, hollow trees & cliffs.<br><b>Distribution:</b><br>Widespread throughout most of UK. | <b>Breeding &amp; wintering:</b><br>A1 Woodland<br>B Grassland<br>B5 Marsh/marshy grassland<br>G1 Standing water (pond/ditch)<br>G2 Running water (riverbanks)<br>H2 Saltmarsh<br>I1.1 Inland cliff<br>J1.1 Arable<br>J2 Hedgerows<br>J3.6 Buildings | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |
| <b>Snowy owl</b><br><i>Bubo scandiacus</i>       | <b>Schedule 1<sup>1</sup></b>                                    | <b>Rare passage winter migrant:</b><br>September to December.<br>Open country - fields, marshes, moors & coasts.<br><b>Restricted distribution:</b><br>Scattered but rare in UK.                                                                                                              | <b>Wintering:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br>H Coastland                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |

| SPECIES                                                      | CONSERVATION STATUS                                     | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                               | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                              | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                |
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| <b>Nightjar</b><br><i>Caprimulgus europaeus</i>              | UK BAP Red List <sup>2</sup>                            | <b>Summer migrant:</b><br>Late-April to September.<br>Lowland heath with scattered trees, recently-felled woodland, open woodland, recently planted conifer plantations, coastal & inland moorland, commons, sand dunes & chalk downland. Also occasionally shingle & industrial waste tips.<br><b>Restricted distribution:</b><br>Scattered mainly in S half England.      | <b>Breeding:</b><br>A1 Woodland (all types)<br>A3 Parkland/scattered trees<br>A4 Recently-felled woodland<br>B1 Acid grassland<br>B3 Calcareous grassland<br>D Heathland (lowland)<br>H3 Shingle above high tide mark<br>H6 Sand dune<br>I2.4 Refuse-tip | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No                                     |
| <b>Hoopoe</b><br><i>Upupa epops</i>                          | Schedule 1 <sup>1</sup>                                 | <b>Rare passage migrant:</b><br>Late-April to May.<br>Open country with bare soil or short grass.<br><b>Restricted distribution:</b><br>Scattered but local in UK.                                                                                                                                                                                                          | <b>Non-breeding passage:</b><br>B Grassland                                                                                                                                                                                                              | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No                         |
| <b>Kingfisher</b><br><i>Alcedo atthis</i>                    | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>      | <b>Resident.</b><br>Large slow-flowing rivers & their tributaries, canals & lakes in lowland areas, with suitable banks for nesting & shallow edges for fishing with scattered trees for perching. Also ornamental lakes & estuaries.<br><b>Distribution:</b><br>Widespread in most of UK.                                                                                  | <b>Breeding &amp; wintering:</b><br>A3 Scattered trees<br>G1 Standing water (lakes)<br>G2 Running water (rivers/canals/estuaries)                                                                                                                        | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No                                     |
| <b>Bee-eater</b><br><i>Merops apiaster</i>                   | Schedule 1 <sup>1</sup>                                 | <b>Rare passage migrant (has been known to breed in UK):</b><br>April/May to September.<br>Warm sunny open lowland landscapes, often near coast - open fields, pastures, grassland & steppe with scattered trees, sometimes near open water.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b> S & SE coasts England.<br><b>Breeding:</b> scattered in UK. | <b>Non-breeding passage &amp; breeding:</b><br>A2 Scrub<br>A3 Parkland/scattered trees<br>B Grassland<br>G1 Standing water<br>G2 Running water<br>H Coastland<br>J1.1 Arable                                                                             | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>Yes (non-breeding passage) |
| <b>Lesser spotted woodpecker</b><br><i>Dendrocopos minor</i> | UK BAP Red List <sup>2</sup>                            | <b>Resident.</b><br>Open lowland deciduous woodland, parklands, orchards, shelterbelts, isolated hedgerow trees & riverside trees.<br><b>Restricted distribution:</b><br>Mainly S half of England & Wales.                                                                                                                                                                  | <b>Breeding &amp; wintering:</b><br>A1.1 Broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland<br>A1.3 Mixed woodland<br>A3 Parkland/scattered trees<br>G2 Running water (river)<br>J2.3 Hedge & trees                                          | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)             |
| <b>Wryneck</b><br><i>Jynx torquilla</i>                      | Schedule 1 <sup>1</sup><br>UK BAP Red List <sup>2</sup> | <b>Passage migrant (has been known to breed in UK):</b><br>May & August to September.<br>Parkland, orchards, large gardens, open pine & birch woodland & heath with colonising pines.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b><br>mainly S & E coasts of UK.<br><b>Breeding:</b> mainly Scottish Highlands.                                       | <b>Non-breeding passage &amp; breeding:</b><br>A1 Woodland<br><b>with</b> <i>Pinus</i> & <i>Betula</i> sp.<br>A1.1.2 Broadleaved plantation woodland<br>A3 Parkland/scattered trees<br>D Heathland<br><b>with</b> <i>Pinus</i> sp.                       | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No                         |

| SPECIES                                     | CONSERVATION STATUS                                        | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                   | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                          |
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| Golden oriole<br><i>Oriolus oriolus</i>     | Schedule 1 <sup>1</sup><br>Red List <sup>2</sup>           | <b>Rare summer passage migrant (has been known to breed in UK):</b><br>Mid-May to August.<br>Open deciduous woodland, forest edges, copses, spinneys & poplar plantations, usually near rivers or coastal sites.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b> mainly S & E England.<br><b>Breeding:</b> mainly Suffolk.                                                                                                                    | <b>Non-breeding passage &amp; breeding:</b><br>A1.1 Broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland <b>with</b> <i>Populus</i> sp.<br>A1.3 Mixed woodland <b>in association with</b><br>G2 Running water                                       | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No                   |
| Red-backed shrike<br><i>Lanius collurio</i> | Schedule 1 <sup>1</sup><br>UK BAP<br>Red List <sup>2</sup> | <b>Rare passage migrant (has been known to breed in UK):</b><br>May to June & August to October.<br>Old hedgerows, thickets, birch-pine plantations, peat bogs & lowland heath with a mixture of gorse, heather & small trees.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b> mainly S & E coasts of UK.<br><b>Breeding:</b> SW & E England, Scotland & Wales.                                                                               | <b>Non-breeding passage &amp; breeding:</b><br>A1.3.2 Mixed plantation woodland <b>with</b> <i>Pinus</i> & <i>Betula</i> sp.<br>A2 Scrub<br>D Heathland <b>with</b> <i>Calluna</i> , <i>Erica</i> & <i>Ulex</i> sp.<br>E1 Bog<br>J2 Hedgerows                 | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No                   |
| Chough<br><i>Pyrhcorax pyrrhcorax</i>       | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>         | <b>Resident.</b><br>Rocky coasts and mountains, feeding on short grassland, pasture, arable fields, heath, sand dunes & beaches.<br><b>Restricted distribution:</b><br>SW coast England & W coasts Wales, Scotland & Ireland.                                                                                                                                                                                                                                    | <b>Breeding &amp; wintering:</b><br>B Grassland<br>D Heathland<br>H6 Sand dune<br>H8.1 Maritime hard cliff & slope<br>I1.1 Inland cliff<br>J1.1 Arable                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A                                          |
| Firecrest<br><i>Regulus ignicapilla</i>     | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>         | <b>Resident (in S England). Winter migrant:</b><br>September to April.<br><b>Passage summer migrant:</b><br>March to September.<br><b>Breeding:</b> conifer plantations, deciduous or mixed woods with rich understorey.<br><b>Wintering:</b> scrub, low bushes, wooded valleys near coast, hedgerows & large gardens.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly S & SE England.<br><b>Wintering:</b> scattered mainly in S half of England. | <b>Breeding:</b><br>A1 Woodland (all types)<br><b>with</b> <i>Picea abies</i> , <i>Ilex aquifolium</i> , <i>Fagus sylvatica</i> & <i>Quercus</i> sp.<br><b>Wintering:</b><br>A1 Woodland (valleys)<br>A3 Parkland/scattered trees<br>A2 Scrub<br>J2 Hedgerows | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (wintering)<br>No (breeding) |
| Crested tit<br><i>Lophophanes cristatus</i> | Schedule 1 <sup>1</sup><br>Amber List <sup>3</sup>         | <b>Resident.</b><br>Old native Scots pine forest, often with stands of mature trees & heather nearby. Also pine plantations & mixed woodlands.<br><b>Restricted distribution:</b><br>Scottish Highlands.                                                                                                                                                                                                                                                         | <b>Breeding &amp; wintering:</b><br>A1.2.1 Semi-natural coniferous woodland<br>A1.2.2 Coniferous plantation woodland<br>A1.3 Mixed woodland <b>often in association with</b><br>D Heathland                                                                   | Distribution:<br>No<br>Habitat Present:<br>N/A                                          |

| SPECIES                                        | CONSERVATION STATUS                                                | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                         | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                          | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                          |
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| <b>Willow tit</b><br><i>Poecile montana</i>    | UK BAP<br>Red List <sup>2</sup>                                    | <b>Resident.</b><br><b>Breeding:</b> conifer woodlands, northern birch woods & mixed woodlands, with a damp substrate close to rivers or streams. Also alder carr, scrub surrounding gravel pits, reservoirs, river-valleys, farmland, hedgerows & copses.<br><b>Wintering:</b> heaths, chalk hills & other sites away from woods.<br><b>Restricted distribution:</b> Mainly central England & Wales. | <b>Breeding:</b><br>A1 Woodland (all types)<br><b>in association with</b><br>G2 Running water (rivers/streams)<br>A2 Scrub<br><b>in association with</b><br>I2.1 Quarry (gravel pit)<br>G1 Standing water (reservoirs)<br>J1.1 Arable<br>J2 Hedgerows<br><b>Wintering:</b><br>B3 Calcareous grassland<br>D Heathland | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                              |
| <b>Marsh tit</b><br><i>Poecile palustris</i>   | UK BAP<br>Red List <sup>2</sup>                                    | <b>Resident.</b><br><b>Breeding:</b> relatively large open deciduous woodland, alder carr, orchards, parks & farmland with woodland or copse.<br><b>Wintering:</b> large mature gardens.<br><b>Restricted distribution:</b> Mainly S half of England & Wales.                                                                                                                                         | <b>Breeding:</b><br>A1.1 Broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland (orchard)<br>A3 Parkland/scattered trees<br>J1.1 Arable<br><b>in association with</b><br>A1 Woodland<br><b>Wintering:</b><br>J1.2 Amenity grassland                                                                          | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding)<br>No (wintering) |
| <b>Bearded tit</b><br><i>Panurus biarmicus</i> | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>           | <b>Resident.</b><br>Dense reedbeds or vegetation around the edge of a reedbed.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly S & E England.<br><b>Wintering:</b> scattered mainly in S & E England.                                                                                                                                                                                   | <b>Breeding &amp; wintering:</b><br>F1 Swamp<br>F2.1 Marginal vegetation<br><b>with</b> <i>Phragmites australis</i>                                                                                                                                                                                                  | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No                               |
| <b>Woodlark</b><br><i>Lullula arborea</i>      | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Amber List <sup>3</sup> | <b>Resident (in SW England).<br/>Summer migrant (in E England):</b><br>January to October.<br><b>Breeding:</b> open woodland, young plantations, recently felled plantations & heath with scattered trees, scrub & short grass.<br><b>Wintering:</b> farmland.<br><b>Restricted distribution:</b> Mainly S & E England.                                                                               | <b>Breeding:</b><br>A1 Woodland (open)<br>A2 Scrub<br>A3 Parkland/scattered trees<br>A4 Recently-felled woodland<br>B Grassland<br>D Heathland<br><b>Wintering:</b><br>J1.1 Arable                                                                                                                                   | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)       |
| <b>Skylark</b><br><i>Alauda arvensis</i>       | UK BAP<br>Red List <sup>2</sup>                                    | <b>Resident.</b><br><b>Summer migrant:</b><br>March to October.<br><b>Breeding:</b> open grassland in uplands, heaths, coastal marshes, set-aside, large arable fields & un-grazed grassland, often without hedgerows. Also sand dunes, golf courses & playing fields.<br><b>Wintering:</b> arable fields, unploughed stubble & saltmarshes.<br><b>Distribution:</b><br>Widespread in UK.             | <b>Breeding:</b><br>B Grassland<br>D Heathland<br>H2 Saltmarsh<br>H6 Sand dune<br>J1.1 Arable<br>J1.2 Amenity grassland<br><b>Wintering:</b><br>J1.1 Arable<br>H2 Saltmarsh                                                                                                                                          | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)       |

| SPECIES                                                 | CONSERVATION STATUS                                              | HABITAT NICHE                                                                                                                                                                                                                                                          | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                         | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                               |
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| <b>Shorelark</b><br><i>Eremophila alpestris</i>         | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Winter migrant:</b><br>October to April.<br>Coastal grazing marsh, dune systems, saltmarshes & beaches or stubble fields near the sea.<br><b>Restricted distribution:</b><br>Mainly E coast of UK.                                                                  | <b>Wintering:</b><br>H Coastland<br>J1.1 Arable (coastal)                                                                                                                                                                                                                                           | Distribution:<br>No<br>Habitat Present:<br>N/A                               |
| <b>Cetti's warbler</b><br><i>Cettia cetti</i>           | <b>Schedule 1<sup>1</sup></b>                                    | <b>Resident.</b><br><b>Breeding:</b> dense willow/bramble scrub in damp, low-lying places, near to reedbeds.<br><b>Wintering:</b> reedbeds.<br><b>Restricted distribution:</b><br>Mainly S half England.                                                               | <b>Breeding:</b><br>A2.1 Dense scrub<br><b>in association with</b><br>G Open water &<br>F1 Swamp<br><b>Wintering:</b><br>F1 Swamp                                                                                                                                                                   | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No                    |
| <b>Wood warbler</b><br><i>Phylloscopus sibilatrix</i>   | UK BAP<br>Red List <sup>2</sup>                                  | <b>Summer migrant:</b><br>April to August.<br>Mature upland oak woods with high canopy & limited ground vegetation. Also beech & birch woodlands.<br><b>Restricted distribution:</b><br>Mainly N & W parts of UK.                                                      | <b>Breeding:</b><br>A1.1.1 Broadleaved woodland (mainly upland)<br><b>with Quercus &amp; Betula sp. &amp; Fagus sylvatica</b>                                                                                                                                                                       | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No                    |
| <b>Dartford warbler</b><br><i>Sylvia undata</i>         | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>         | <b>Resident.</b><br>Dry lowland heath dominated by gorse or heathers.<br><b>Restricted distribution:</b><br>Mainly S England & S Wales.                                                                                                                                | <b>Breeding &amp; wintering:</b><br>D1 Dry heathland<br><b>with Ulex, Calluna &amp; Erica sp.</b>                                                                                                                                                                                                   | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No                    |
| <b>Grasshopper warbler</b><br><i>Locustella naevia</i>  | UK BAP<br>Red List <sup>2</sup>                                  | <b>Summer migrant:</b><br>Mid-April to September.<br>Lowland areas - thick scrub, thickets, rough grass, marshes, fens, heathland, young conifer plantations and overgrown gravel pits.<br><b>Distribution:</b><br>Widespread but local in UK.                         | <b>Breeding:</b><br>A1.2.2 Coniferous plantation woodland<br>A2.1 Dense scrub<br>B Grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br>E3 Fen<br>I2.1 Quarry (gravel pit)                                                                                                                      | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>Yes (breeding)        |
| <b>Marsh warbler</b><br><i>Acrocephalus palustris</i>   | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup> | <b>Summer migrant:</b><br>Late-May to August.<br>Typically close to water in dense lush plants such as willowherb, meadowsweet & nettle with willows & scrub nearby. Gardens, alongside streams & fields.<br><b>Restricted distribution:</b><br>Mainly E coasts of UK. | <b>Breeding &amp; non-breeding passage:</b><br>A2 Scrub<br>B Grassland<br>C3.1 Tall ruderal<br>F2.1 Marginal vegetation<br><b>in association with</b><br>G1 Standing water<br><b>&amp;/or</b><br>G2 Running water<br><b>with Epilobium &amp; Salix sp., Filipendula ulmaria &amp; Urtica dioica</b> | Distribution:<br>Yes (summer non-breeding passage)<br>Habitat Present:<br>No |
| <b>Savi's warbler</b><br><i>Locustella luscinioides</i> | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup> | <b>Summer migrant:</b><br>Late-April to August.<br>Extensive dense reedbeds & lush marsh vegetation.<br><b>Restricted distribution:</b><br>Mainly S & E England.                                                                                                       | <b>Breeding:</b><br>B5 Marsh/marshy grassland<br>F Swamp, marginal & inundation                                                                                                                                                                                                                     | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>No                    |

| SPECIES                                                                            | CONSERVATION STATUS                                      | HABITAT NICHE                                                                                                                                                                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                               | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
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| <b>Aquatic warbler</b><br><i>Acrocephalus paludicola</i>                           | UK BAP<br>Red List <sup>2</sup>                          | <b>Rare passage migrant:</b><br>Late-July to October.<br>Coastal reedbeds, in low vegetation, stands of sedges or rushes near river margins, estuaries & lagoons.<br><b>Restricted distribution:</b><br>Mainly S & SE coasts England.                                                                                            | <b>Non-breeding passage:</b><br>F1 Swamp<br>F2.1 Marginal vegetation<br>G1 Standing water (lagoons)<br>G2 Running water (rivers/estuaries)<br><b>with</b> <i>Carex</i> & <i>Juncus</i> sp.                                                                                                                                | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>No             |
| <b>Short-toed treecreeper</b><br><i>Certhia brachydactyla</i>                      | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Rare vagrant (in England). Resident (in Channel Islands).</b><br>Groups of tall trees with rugged bark in woods, avenues, parks, large gardens, orchards & copses.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b> S & E coasts England.<br><b>Breeding:</b> Channel Islands.                              | <b>Non-breeding passage &amp; breeding:</b><br>A1.1 Broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A3 Parkland/scattered trees<br><b>often in association with</b><br>J3.6 Buildings (towns)                                                                                                | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| <b>Fair Isle wren</b><br><i>Troglodytes troglodytes</i> subsp. <i>fridariensis</i> | UK BAP                                                   | <b>Resident.</b><br>Cliffs & gully systems, sheltered inlets & cultivated habitats. Feeds amongst boulder beaches.<br><b>Restricted distribution:</b><br>Fair Isle, Shetland.                                                                                                                                                    | <b>Breeding &amp; wintering:</b><br>B Grassland<br>H8 Maritime cliff & slope<br>I1.1 Inland cliff                                                                                                                                                                                                                         | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| <b>St Kilda wren</b><br><i>Troglodytes troglodytes</i> subsp. <i>hirtensis</i>     | UK BAP                                                   | <b>Resident.</b><br>Cliffs, slopes, buildings, grassy hillside & moorland. Feeds in intertidal zone.<br><b>Restricted distribution:</b><br>St Kilda, Scotland.                                                                                                                                                                   | <b>Breeding &amp; wintering:</b><br>B Grassland<br>H1 Intertidal<br>H8 Maritime cliff & slope<br>I1.1 Inland cliff                                                                                                                                                                                                        | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| <b>Starling</b><br><i>Sturnus vulgaris</i>                                         | UK BAP<br>Red List <sup>2</sup>                          | <b>Resident.</b><br>Open grasslands - gardens, lawns, arable fields, playing fields & parks in urban & rural areas. Also open forests, near woodland margins, grazed hill pastures, saltmarshes, heaths, rocky shorelines, orchards, reedbeds, floodlands, airfields & refuse tips.<br><b>Distribution:</b><br>Widespread in UK. | <b>Breeding &amp; wintering:</b><br>A1 Woodland<br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A3 Parkland/scattered trees<br>B Grassland<br>B5 Marsh/marshy grassland<br>D Heathland<br>F1 Swamp<br>H Coastland<br>I2.4 Refuse-tip<br>J1.1 Arable<br>J1.2 Amenity grassland<br>J3.6 Buildings<br>J4 Bare ground | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |

| SPECIES                                        | CONSERVATION STATUS                                    | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                              | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                      |
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| <b>Ring ouzel</b><br><i>Turdus torquatus</i>   | UK BAP<br>Red List <sup>2</sup>                        | <p><b>Summer migrant:</b><br/>April to August.</p> <p><b>Passage migrant:</b><br/>April to May &amp; September.</p> <p><b>Breeding:</b> steep gullies &amp; crags on moorland &amp; in mountains, hill farms, fringes of forestry plantations &amp; old quarries, often near water.</p> <p><b>Non-breeding passage:</b> short grass near coast &amp; steep chalk hillsides close to dense cover.</p> <p><b>Restricted distribution:</b><br/><b>Breeding:</b> mainly N England, N Wales &amp; Scotland.</p> <p><b>Non-breeding passage:</b> mainly S &amp; E coasts of UK &amp; central England.</p> | <p><b>Breeding:</b><br/>A1.2.1 Coniferous plantation woodland<br/>B Grassland<br/>C2 Upland species-rich ledges<br/>D Heathland<br/>G1 Standing water<br/><b>in association with</b><br/>I2.1 Quarry (disused)<br/>I1 Natural rock exposure &amp; waste<br/><b>Non-breeding passage:</b><br/>A2.1 Dense scrub<br/>B3 Calcareous grassland<br/>H8.4 Coastal grassland</p> | <p>Distribution:<br/>Yes (non-breeding passage)<br/>Habitat Present:<br/>No</p>                     |
| <b>Fieldfare</b><br><i>Turdus pilaris</i>      | <b>Schedule 1<sup>1</sup></b><br>Red List <sup>2</sup> | <p><b>Winter migrant (has been known to breed in UK):</b><br/>October to May.</p> <p><b>Wintering:</b> hedgerows, orchards, pastures, arable &amp; woodland edge, rarely gardens.</p> <p><b>Breeding:</b> moorland valleys, birch woods &amp; plantation edge.</p> <p><b>Distribution:</b><br/><b>Wintering:</b> widespread in UK.</p> <p><b>Breeding:</b> N England &amp; Scotland.</p>                                                                                                                                                                                                            | <p><b>Wintering:</b><br/>A1 Woodland (edge)<br/>A1.1.2 Broadleaved plantation woodland (orchards)<br/>A3 Parkland/scattered trees<br/>B Grassland<br/>J1.1 Arable<br/>J2 Hedgerows<br/><b>Breeding:</b><br/>A1.1 Broadleaved woodland<br/><b>with Betula sp.</b><br/>A1.1.2 Broadleaved plantation woodland (edge)<br/>D Heathland (moorland valleys)</p>                | <p>Distribution:<br/>Yes (wintering)<br/>Habitat Present:<br/>Yes (wintering)</p>                   |
| <b>Song thrush</b><br><i>Turdus philomelos</i> | UK BAP<br>Red List <sup>2</sup>                        | <p><b>Resident.</b><br/>Deciduous &amp; coniferous woodland, parks, hedgerows &amp; gardens.</p> <p><b>Distribution:</b><br/>Widespread in UK.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b>Breeding &amp; wintering:</b><br/>A1 Woodland (all types)<br/>A3 Parkland/scattered trees<br/>J1.2 Amenity grassland<br/>J2 Hedgerows</p>                                                                                                                                                                                                                          | <p>Distribution:<br/>Yes (resident)<br/>Habitat Present:<br/>Yes (breeding &amp; wintering)</p>     |
| <b>Redwing</b><br><i>Turdus iliacus</i>        | <b>Schedule 1<sup>1</sup></b><br>Red List <sup>2</sup> | <p><b>Winter migrant:</b><br/>September to April.</p> <p><b>Summer migrant (in Scotland):</b><br/>March to August.</p> <p><b>Wintering:</b> hedgerows, orchards, open short grassland, farmland, parks, large gardens &amp; scrub.</p> <p><b>Breeding:</b> scrubby areas near water &amp; plantations.</p> <p><b>Distribution:</b><br/><b>Wintering:</b> widespread in UK.</p> <p><b>Breeding:</b> Scotland.</p>                                                                                                                                                                                    | <p><b>Wintering:</b><br/>A1.1.2 Broadleaved plantation woodland<br/>A2 Scrub<br/>A3 Parkland/scattered trees<br/>B Grassland<br/>J1 Cultivated/disturbed land (gardens)<br/>J1.1 Arable<br/>J2 Hedgerows<br/><b>Breeding:</b><br/>A2 Scrub<br/><b>in association with</b><br/>G1 Standing water<br/><b>&amp;/or</b> G2 Running water<br/>A1 Woodland (plantations)</p>   | <p>Distribution:<br/>Yes (wintering)<br/>Habitat Present:<br/>Yes (wintering)<br/>No (breeding)</p> |

| SPECIES                                               | CONSERVATION STATUS                                      | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                             | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                               |
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| <b>Spotted flycatcher</b><br><i>Muscicapa striata</i> | UK BAP Red List <sup>2</sup>                             | <b>Summer migrant:</b><br>Late-April to September.<br>Woodland glades & edges, mature gardens, parks, cemeteries & orchards.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                                                                                                                                                                         | <b>Breeding:</b><br>A1 Woodland (glades/edges)<br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A3 Parkland/scattered trees<br>J1.2 Amenity grassland                                                                                                                            | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>Yes (breeding)                        |
| <b>Bluethroat</b><br><i>Luscinia svecica</i>          | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Passage migrant (has been known to breed in UK):</b><br>May to early-June & August to October.<br>Scrub, gardens & grassy areas, usually near coast.<br><b>Restricted distribution:</b><br>Mainly S & E coasts of UK.                                                                                                                                                                                                                                                                                          | <b>Non-breeding passage &amp; breeding:</b><br>A2 Scrub<br>B Grassland<br><b>in association with</b><br>H Coastland                                                                                                                                                                     | Distribution<br>Yes (non-breeding passage)<br>Habitat Present:<br>Yes (non-breeding passage) |
| <b>Black redstart</b><br><i>Phoenicurus ochruros</i>  | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Resident (on SE coast &amp; Lancashire).</b><br><b>Summer migrant (in central England):</b><br>March to September.<br><b>Winter migrant (on coasts):</b><br>September to March.<br><b>Breeding:</b> cliffs, industrial buildings, power stations, railway stations, disused factories/warehouses, quarries & rural buildings.<br><b>Wintering:</b> rocky shores or below cliffs.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly S & E England.<br><b>Wintering:</b> mainly coastal parts of UK. | <b>Breeding:</b><br>I1 Inland cliff<br>I2.1 Quarry<br>J2.6 Buildings (industrial/rural)<br><b>Wintering:</b><br>H Coastland                                                                                                                                                             | Distribution:<br>Yes (breeding & wintering)<br>Habitat Present:<br>No                        |
| <b>Dunnock</b><br><i>Prunella modularis</i>           | UK BAP Amber List <sup>3</sup>                           | <b>Resident.</b><br>Low thick scrub, extensive bramble patches, gardens, parks, farmland with hedgerows, bracken on moorland, conifer plantation, deciduous & coppice woodland, railway embankments & cuttings.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                                                                                      | <b>Breeding &amp; wintering:</b><br>A1.1 Broadleaved woodland<br>A1.2.2 Coniferous plantation<br>A2.1 Dense scrub<br>A3 Parkland/scattered trees<br>B Grassland<br>C1 Bracken<br><b>in association with</b><br>D Heathland<br>J1.1 Arable<br><b>in association with</b><br>J2 Hedgerows | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)            |
| <b>House sparrow</b><br><i>Passer domesticus</i>      | UK BAP Red List <sup>2</sup>                             | <b>Resident.</b><br>Buildings (often in towns or on cultivated land), parks, gardens, farmyards & industrial areas with open ground.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                                                                                                                                                                 | <b>Breeding &amp; wintering:</b><br>A2 Scrub<br>A3 Parkland/scattered trees<br>J1 Cultivated/disturbed land<br>J3.6 Buildings<br>J4 Bare ground                                                                                                                                         | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)            |

| SPECIES                                             | CONSERVATION STATUS             | HABITAT NICHE                                                                                                                                                                                                                                                                                               | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                   | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
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| <b>Tree sparrow</b><br><i>Passer montanus</i>       | UK BAP<br>Red List <sup>2</sup> | <b>Resident.</b><br><b>Breeding:</b> open woodland, woodland edges, farmland with hedgerows, hedgerow trees, parks, orchards & quarries.<br><b>Wintering:</b> agricultural land especially stubble or unploughed fields.<br><b>Restricted distribution:</b> Mainly central & N parts of UK.                 | <b>Breeding:</b><br>A1.1 Broadleaved woodland (open/edge)<br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A3 Parkland/scattered trees<br>J1.1 Arable<br><b>in association with</b><br>J2 Hedgerows<br>I2.1 Quarry<br><b>Wintering:</b><br>J1.1 Arable | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                        |
| <b>Yellow wagtail</b><br><i>Motacilla flava</i>     | UK BAP<br>Red List <sup>2</sup> | <b>Summer migrant:</b><br>Late-March to September. Lowland pastures, water meadows, marshes, riversides & arable fields, often near water.<br><b>Restricted distribution:</b> Mainly central & E parts of UK.                                                                                               | <b>Breeding &amp; non-breeding passage:</b><br>B Grassland<br>B5 Marsh/marshy grassland<br>F2.1 Marginal vegetation<br>J1.1 Arable<br><b>in association with</b><br>G1 Standing water &/or<br>G2 Running water                                                | Distribution:<br>Yes (summer non-breeding passage)<br>Habitat Present:<br>No      |
| <b>Tree pipit</b><br><i>Anthus trivialis</i>        | UK BAP<br>Red List <sup>2</sup> | <b>Summer migrant:</b><br>April to September. Heathland, open woodland & edges, young conifer plantations & recently felled trees, parkland with scattered trees, mature hedgerows, open grassland with scrub & scattered trees.<br><b>Restricted distribution:</b> Mainly S & N England, Wales & Scotland. | <b>Breeding:</b><br>A1 Woodland (open/edge)<br>A1.2.2 Coniferous plantation woodland (young)<br>A2 Scrub<br>A3 Parkland/scattered trees<br>A4 Recently-felled woodland<br>B Grassland<br>D Heathland<br>J2 Hedgerows                                          | Distribution:<br>Yes (breeding)<br>Habitat Present:<br>Yes (breeding)             |
| <b>Brambling</b><br><i>Fringilla montifringilla</i> | <b>Schedule 1<sup>1</sup></b>   | <b>Winter migrant (has been known to breed in UK):</b><br>Mid-September to April. Beech woods, farmland, parks & sometimes gardens.<br><b>Distribution:</b> Widespread in UK.                                                                                                                               | <b>Wintering:</b><br>A1.1 Broadleaved woodland<br>A3 Parkland/scattered trees<br><b>with <i>Fagus sylvatica</i></b><br>J1 Cultivated/disturbed land                                                                                                           | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>No                        |
| <b>Linnet</b><br><i>Carduelis cannabina</i>         | UK BAP<br>Red List <sup>2</sup> | <b>Resident.</b><br><b>Breeding:</b> gorse-covered commons, rough ground with scrub, unmanaged farmland, hedgerows, young plantations, fen woodlands, rural gardens & orchards.<br><b>Wintering:</b> farmland, wasteland & coastal marshes.<br><b>Distribution:</b> Widespread in most of UK.               | <b>Breeding:</b><br>A1.1.1 Broadleaved semi-natural woodland<br>A1.2.2.2 Plantation woodland<br>A2 Scrub<br>B Grassland<br>D Heathland<br><b>with <i>Ulex</i> sp.</b><br>J1.1 Arable<br>J2 Hedgerows<br><b>Wintering:</b><br>H2 Saltmarsh<br>J1.1 Arable      | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |

| SPECIES                                             | CONSERVATION STATUS                                                | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                            | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                              | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                            |
|-----------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Twite</b><br><i>Carduelis flavirostris</i>       | UK BAP<br>Red List <sup>2</sup>                                    | <b>Resident (in N Scotland &amp; N Wales).</b><br><b>Summer migrant:</b><br>April to September.<br><b>Winter migrant:</b><br>October to March.<br><b>Breeding:</b> Upland moorlands, open country & hay meadows.<br><b>Wintering:</b> coastal lowland stubble fields & saltmarshes.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly N England & Scotland.<br><b>Wintering:</b> mainly coastal parts of UK. | <b>Breeding:</b><br>B Grassland<br>D Heathland<br><b>Wintering:</b><br>B Grassland<br>J1.1 Arable<br><b>in association with</b><br>H Coastland<br>H2 Saltmarsh                                                                                                                                                                           | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering)                   |
| <b>Lesser redpoll</b><br><i>Carduelis cabaret</i>   | UK BAP<br>Red List <sup>2</sup>                                    | <b>Resident.</b><br><b>Winter migrant:</b><br>September to March.<br>Birch woodland, young conifer plantations, alder carr, sallow & hawthorn thickets, tall hedgerows, field hedgerows, gardens & heath with scattered trees.<br><b>Restricted distribution:</b><br><b>Breeding:</b> mainly N England, Wales & Scotland.<br><b>Wintering:</b> widespread in UK.                                                         | <b>Breeding &amp; wintering:</b><br>A1.1.1 Broadleaved semi-natural woodland (also carr)<br><b>with Betula &amp; Alnus sp.</b><br>A1.2.2 Coniferous plantation woodland (young)<br>A2.1 Dense scrub<br><b>with Salix &amp; Crataegus sp.</b><br>A3 Parkland/scattered trees<br><b>in association with</b><br>D Heathland<br>J2 Hedgerows | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)         |
| <b>Serin</b><br><i>Serinus serinus</i>              | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup>           | <b>Rare passage migrant (has been known to breed in UK):</b><br>March to April & September to November.<br><b>Summer migrant (in E Anglia):</b><br>March to May.<br>Gardens, parks, orchards & churchyards in suburban or rural areas.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b> S & E coasts of England.<br><b>Breeding:</b> mainly S coast of England.                                        | <b>Non-breeding passage &amp; breeding:</b><br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A3 Parkland/scattered trees<br>J1.2 Amenity grassland (gardens)                                                                                                                                                                      | Distribution:<br>Yes (non-breeding passage & probable breeding)<br>Habitat Present:<br>No |
| <b>Common crossbill</b><br><i>Loxia curvirostra</i> | <b>Schedule 1<sup>1</sup></b>                                      | <b>Resident.</b><br>Coniferous woodland particularly spruce, pine & larch, mixed woodland & parkland.<br><b>Restricted distribution:</b><br>Mainly N England, Wales & Scotland.                                                                                                                                                                                                                                          | <b>Breeding &amp; wintering:</b><br>A1.2 Coniferous woodland<br>A1.3 Mixed woodland<br>A3 Parkland/scattered trees<br><b>with Pinus, Larix &amp; Picea sp.</b>                                                                                                                                                                           | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No                                 |
| <b>Scottish crossbill</b><br><i>Loxia scotica</i>   | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Amber List <sup>3</sup> | <b>Resident.</b><br>Remnant native Scots pine forests & conifer plantations particularly Norway spruce & larch but also other conifers. Sites usually near water.<br><b>Restricted distribution:</b><br>NE Scottish Highlands.                                                                                                                                                                                           | <b>Breeding &amp; wintering:</b><br>A1.2. Coniferous woodland<br><b>with Picea abies &amp; Larix sp.</b><br><b>in association with</b><br>G1 Standing water<br><b>&amp;/or</b><br>G2 Running water                                                                                                                                       | Distribution:<br>No<br>Habitat Present:<br>N/A                                            |

| SPECIES                                                  | CONSERVATION STATUS                                      | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                           | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                          | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                                |
|----------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Scarlet rosefinch</b><br><i>Carpodacus erythrinus</i> | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Rare passage migrant (has been known to breed in UK):</b><br>May to September.<br>Coastal areas in low scrub, thick hedgerows, swampy areas & damp woodland.<br><b>Restricted distribution:</b><br><b>Non-breeding passage:</b> mainly E coast of UK.<br><b>Breeding:</b> mainly Scotland & Cumbria.                                                                                                                 | <b>Non-breeding passage &amp; breeding:</b><br>A1.1.1 Broadleaved semi-natural woodland (damp)<br>A2 Scrub<br>F1 Swamp<br>H Coastland<br>J2 Hedgerows                                                                                                                                                | Distribution:<br>Yes (non-breeding passage)<br>Habitat Present:<br>Yes (non-breeding passage) |
| <b>Bullfinch</b><br><i>Pyrrhula pyrrhula</i>             | UK BAP<br>Amber List <sup>3</sup>                        | <b>Resident.</b><br>Mature broadleaved, mixed or coniferous woodland, thickets, scrub, large hedgerows, lowland farmland, orchards, large gardens, yews in churchyards & gorse on heaths.<br><b>Distribution:</b><br>Widespread in UK.                                                                                                                                                                                  | <b>Breeding &amp; wintering:</b><br>A1 Woodland (all types)<br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A2 Scrub<br>A3 Parkland/scattered trees<br>D Heathland with <i>Ulex</i> sp.<br>J1.1 Arable<br>J1.2 Amenity grassland (gardens/churchyards) with <i>Taxus</i> sp.<br>J2 Hedgerows | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering)             |
| <b>Hawfinch</b><br><i>Coccothraustes coccothraustes</i>  | UK BAP<br>Red List <sup>2</sup>                          | <b>Resident.</b><br>Mature deciduous & mixed woodlands, large gardens, cemeteries, parklands, orchards, hedgerows & shrubby places with scattered trees. Likes hornbeam especially.<br><b>Restricted distribution:</b><br>Scattered mainly in S half England & Wales.                                                                                                                                                   | <b>Breeding &amp; wintering:</b><br>A1.1 Broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland (orchards)<br>A1.3 Mixed woodland<br>A3 Parkland/scattered trees<br>J1.2 Amenity grassland (gardens/churchyards)<br>J2 Hedgerows<br>with <i>Carpinus betulus</i>                             | Distribution:<br>Yes (resident)<br>Habitat Present:<br>No                                     |
| <b>Snow bunting</b><br><i>Plectrophenax nivalis</i>      | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Resident (in N Scotland).</b><br><b>Winter migrant:</b><br>Late-September to March.<br><b>Breeding:</b> scree & boulder fields on high mountain tops.<br><b>Wintering:</b> upland moors, mountains, arable fields, rough grassland near coast, saltmarshes & sand/shingle beaches.<br><b>Restricted distribution:</b><br><b>Breeding:</b> Scottish Highlands<br><b>Wintering:</b> mainly N Scotland & E coast of UK. | <b>Breeding:</b><br>C2 Upland species-rich ledges<br>I1 Natural rock exposure<br>I1.2 Scree<br><b>Wintering:</b><br>D Heathland (upland)<br>H1.1.1 Intertidal mud/sand<br>H1.1.2 Intertidal shingle<br>H2 Saltmarsh<br>H8.4 Coastal grassland<br>I1 Natural rock exposure<br>J1.1 Arable             | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering)                       |
| <b>Lapland bunting</b><br><i>Calcarius lapponicus</i>    | <b>Schedule 1<sup>1</sup></b><br>Amber List <sup>3</sup> | <b>Winter migrant:</b><br>September to May.<br>Coastal heaths, stubble fields & rough grass, usually near coast.<br><b>Restricted distribution:</b><br>Mainly S & E coasts of UK.                                                                                                                                                                                                                                       | <b>Wintering:</b><br>B Grassland<br>H8.4 Coastal grassland<br>H8.5 Coastal heathland<br>J1.1 Arable                                                                                                                                                                                                  | Distribution:<br>Yes (wintering)<br>Habitat Present:<br>Yes (wintering)                       |

| SPECIES                                            | CONSERVATION STATUS                                              | HABITAT NICHE                                                                                                                                                                                                                                                                                                                                                                                                    | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                           | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                                    |
|----------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Yellowhammer</b><br><i>Emberiza citrinella</i>  | UK BAP<br>Red List <sup>2</sup>                                  | <b>Resident.</b><br><b>Breeding:</b> dry sunny habitats with varied vegetation - arable fields with hedgerows, grassland, road/railway embankments, commons & heaths. Also sea cliffs with shrubby vegetation such as bracken & heath, coastal sand dunes & young plantations.<br><b>Wintering:</b> large fields, especially stubble fields & winter crops.<br><b>Distribution:</b><br>Widespread in most of UK. | <b>Breeding:</b><br>A1 Woodland (young plantations)<br>A2 Scrub<br>B Grassland<br>C1 Bracken<br>D Heathland<br>H6 Sand dune<br>H8 Maritime cliff & slope<br>J1.1 Arable<br><b>in association with</b><br>J2 Hedgerows<br><b>Wintering:</b><br>J1.1 Arable                                                                                             | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |
| <b>Cirl bunting</b><br><i>Emberiza cirlus</i>      | <b>Schedule 1<sup>1</sup></b><br>UK BAP<br>Red List <sup>2</sup> | <b>Resident.</b><br><b>Breeding:</b> Agricultural pasture surrounded by hedgerows & trees, scrubby slopes near coast, heaths with scattered gorse, often close to salt & freshwater.<br><b>Wintering:</b> arable fields, especially stubble & set-aside.<br><b>Restricted distribution:</b><br>S Devon & Cornwall.                                                                                               | <b>Breeding:</b><br>A1 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B Grassland<br>D Heathland<br><b>with</b> <i>Ulex</i> sp.<br>J2 Hedgerows<br>J1.1 Arable<br><b>in association with</b><br>G1 Standing water<br><b>&amp;/or</b><br>G2 Running water<br><b>Wintering:</b><br>J1.1 Arable                                                  | Distribution:<br>No<br>Habitat Present:<br>N/A                                    |
| <b>Reed bunting</b><br><i>Emberiza schoeniclus</i> | UK BAP<br>Amber List <sup>3</sup>                                | <b>Resident.</b><br><b>Breeding:</b> reedbeds, riverbanks, fens, marshes, coastal grazing marshes, grasslands, ditches, woodlands with water, clearings, young conifer plantations & farm crops particularly oilseed rape. Also hawthorn scrub on chalk downlands, dune slacks & gravel pits.<br><b>Wintering:</b> agricultural land.<br><b>Distribution:</b><br>Widespread in most of UK.                       | <b>Breeding:</b><br>A1 Woodland<br>A1.2.2 Coniferous plantation woodland (young)<br>A2 Scrub<br>B Grassland<br>B5 Marsh/marshy grassland<br>E3 Fen<br>F1 Swamp<br>F2.1 Marginal vegetation<br>G1 Standing water<br>G2 Running water<br>H2 Saltmarsh<br>H6.4 Dune slack<br>I2.1 Quarry (gravel pit)<br>J1.1 Arable<br><b>Wintering:</b><br>J1.1 Arable | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |
| <b>Corn bunting</b><br><i>Emberiza calandra</i>    | UK BAP<br>Red List <sup>2</sup>                                  | <b>Resident.</b><br><b>Breeding:</b> dry open countryside, heaths & reedbed.<br><b>Wintering:</b> tilled farmland, winter stubbles & rough grasslands.<br><b>Restricted distribution:</b><br>Mainly central & E parts of UK.                                                                                                                                                                                     | <b>Breeding:</b><br>B Grassland<br>D1 Dry heathland<br>F1 Swamp<br><b>Wintering:</b><br>B Grassland<br>J1.1 Arable                                                                                                                                                                                                                                    | Distribution:<br>Yes (resident)<br>Habitat Present:<br>Yes (breeding & wintering) |

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- <sup>1</sup> In addition to the standard protection afforded to all wild birds, bird species listed on Schedule 1 of the *Wildlife & Countryside Act 1981 (& as amended)* receive additional protection that makes it an offence to intentionally or recklessly disturb the adults or their dependent young while they are at or near to an active nest site.
- <sup>2</sup> For a species to be included within the Red List it must satisfy at least one of the following criteria:-
- Globally threatened;
  - Historical population decline in UK during 1800–1995;
  - Severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969);
  - Severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period.
- <sup>3</sup> For a species to be included within the Amber List it must satisfy at least one of the following criteria:-
- Species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern);
  - Historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years;
  - Moderate (25-49%) decline in UK breeding population over last 25 years, or the longer-term period;
  - Moderate (25-49%) contraction of UK breeding range over last 25 years, or the longer-term period;
  - Moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period;
  - Rare breeder; 1–300 breeding pairs in UK;
  - Rare non-breeders; less than 900 individuals;
  - Localised; at least 50% of UK breeding or non-breeding population in 10 or fewer sites, but not applied to rare breeders or non-breeders;
  - Internationally important; at least 20% of European breeding or non-breeding population in UK (NW European and East Atlantic Flyway populations used for non-breeding wildfowl and waders respectively).

## References

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**APPENDIX H. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF LEGALLY PROTECTED AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF TERRESTRIAL MAMMALS (EXCLUDING BATS) WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.****Red squirrel *Sciurus vulgaris***Conservation status

Red squirrels are listed as Priority Species within the UK Biodiversity Action Plan and receive full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* which makes it an offence to:-

- Intentionally kill, injure or take a red squirrel;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a red squirrel for shelter or protection; or
- Intentionally or recklessly disturb a red squirrel when occupying a structure or place which it uses for that purpose.

Habitat niche and equivalent Phase 1 habitats

Red squirrels are mainly a diurnal and arboreal species, now predominantly found in coniferous forests dominated by Scots pine *Pinus sylvestris* or Norway spruce *Picea abies*, but less often in those dominated by Sitka spruce *Picea sitchensis* (Harris & Yalden 2008, Burton 1968). Red squirrels are also found in broadleaved woods, smaller woods or copses, heather moors and even gardens (Harris & Yalden 2008, Barrett-Hamilton *et al.* 1883). Red squirrels readily utilise roads, walls, hedgerows or even railway bridges to move between habitats, and will also cross small streams (Barrett-Hamilton *et al.* 1883). Habitats vary according to the time of year and amount of food available, but woodlands with many tree species generally provide a greater supply of food than those dominated by a single species. Red squirrels are opportunistic, with a varied diet comprising pine cones, beech mast, acorns, hazelnuts, fruits, berries and fungi, as well as buds, shoots, flowers of trees, bark, tree sap, lichens, caterpillars and less commonly, birds eggs and nestlings (Harris & Yalden 2008, Burton 1968, Street 1961).

Red squirrels build dreys for both breeding and resting in trees, near the trunk, or in branch forks, usually above 6 m in height, but dreys can be as low 2.5 m high (Harris & Yalden 2008, Burton 1968). Drey sites are generally in spruce trees, but hollow trees may also be used for dens, particularly in broadleaved woodlands (Harris & Yalden 2008, Burton 1968). Nests are frequently constructed using climbing plants such as ivy *Hedera helix*, with the outer part made of leaves or needles both loose and on twigs, and the inner is lined with a mixture of soft material, usually moss, leaves, needles, dry grass, stripped bark, feathers and even rabbit fur (Harris & Yalden 2008, Street 1961).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland / all types;
- D – Heathland;
- J2.1 – Miscellaneous / Boundaries / Intact hedge (commuting only); and

- 
- J2.3 – Miscellaneous / Boundaries / Hedge and trees (commuting only).

#### Assessment of site location against species distribution

Red squirrels are known to occur in Dorset (Brownsea Island only).

#### Assessment of species habitat preference against site Phase 1 survey

N/A (Brownsea Island only).

### **Common dormouse *Muscardinus avellanarius***

#### Conservation status

Common dormice are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a common dormouse;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a common dormouse for shelter or protection; or
- Intentionally or recklessly disturb a common dormouse when occupying a structure or place which it uses for that purpose.

#### Habitat niche and equivalent Phase 1 habitats

Dormice are an arboreal woodland species (Bright & Morris 1990, 1991 & 1992) yet whilst most commonly found in broadleaved woodlands and species-rich hedgerows, occasional records of dormice have been made in heathland, culm grassland, coastal scrub and coniferous plantations (Chanin & Woods 2003). In addition, studies in the south-west of England have demonstrated that scrub often represents dormouse habitat (Eden & Eden 1999, Chanin & Woods 2003), and the species has been recorded in mono-species goat willow *Salix caprea* scrub in Surrey in spring (White C & Murkin K 2013 *Pers. comm.*).

For populations to persist within a given site they require a succession of fruiting trees and shrubs to provide food (Richards *et al.* 1984, Bright & Morris 1993), including flowers (nectar and pollen), fruits (berries and nuts) with the presence of bramble *Rubus fruticosus* agg. of overwhelming importance (Hurrell & McIntosh 1984), and some insects (especially aphids and caterpillars). There is a common misconception that dormice are dependent upon honeysuckle *Lonicera periclymenum* and hazel *Corylus avellana*, however, whilst the presence of both honeysuckle for the provision of nest material and hazel for a ready source of food prior to hibernation are of benefit to dormice, they are not essential (Hurrell & McIntosh 1984) and dormouse presence (from nest evidence) has been found in a low-cut hedge over 1 km from any area with fruiting hazel (Eden & Eden 1999).

As the animals are typically arboreal, only coming to the ground to move between areas of favoured arboreal habitat, and in the winter to hibernate, they are most often found in

habitat with good canopy and/or shrub-layer connectivity and favour thick tangles of vegetation. As a general rule, if eye-level visibility is summer is more than 20 m then the shrub layer is sub-optimal dormouse habitat (Bright *et al.* 2006). Although they may weave nests within bushes and shrubs, cavities in hollow branches, squirrel dreys and old birds' nests are favoured (Bright *et al.* 2006). During the winter dormice hibernate on the ground in tightly woven nests under logs, moss and leaves or among the dead leaves at the base of coppice stools and thick hedges (Bright *et al.* 2006).

Hedgerows in which dormice are present typically comprise a wide diversity of shrub species (with abundant bramble) (Bright & MacPherson 2002, Chanin & Woods 2003) and significantly high productivity in terms of overall food resource. Radio-tracking also demonstrated that dormice in hedgerows feed principally on bramble, dog-rose *Rosa canina* and hazel, but avoid hawthorn (Bright & MacPherson 2002). The seeds of hornbeam *Carpinus betulus* and blackthorn *Prunus spinosa* are also favoured, particularly in areas where hazel is absent (Eden & Eden 1999).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B5 – Grassland and marsh / Marsh/marshy grassland (culm grassland only);
- J2.1 – Miscellaneous / Boundaries / Intact hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

#### Assessment of site location against species distribution

Dormice are known to occur in Dorset.

#### Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

### **Water vole *Arvicola amphibius***

#### Conservation status

Water voles are listed as Priority Species within the UK Biodiversity Action Plan and receive full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* which makes it an offence to:-

- Intentionally kill, injure or take a water vole;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a water vole for shelter or protection; or
- Intentionally or recklessly disturb a water vole when occupying a structure or place which it uses for that purpose.

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### Habitat niche and equivalent Phase 1 habitats

Water voles are typically found in linear riparian habitat, alongside rivers, ponds and canals, where there is dense waterside vegetation to provide food and shelter. Water voles favour slow-flowing water courses (Strachan 1998, Moorhouse *et al.* 2009), with high banks for burrowing and refuge areas above winter flood levels, and a year-round availability of feeding material (Stoddart 1970, Lawton & Woodroffe 1991, Barreto *et al.* 1998, Strachan 1998, Moorhouse & Macdonald 2005, Strachan & Moorhouse 2006). Shore type is predominately earth or clay with a stepped or step bank, where they can burrow and create a dry nest above the water table (Strachan 1998). Bank-side and emergent vegetation is important, with optimal habitat containing a continuous and tall amount of cover comprising tussocks of grass, rush, sedge or reed (Strachan 1998, Moorhouse *et al.* 2009). Excessive shading by shrubs and trees is less favoured (Strachan 1998).

Equivalent Phase 1 habitats comprise:-

- F – Swamp, marginal and inundation;
- G1 – Open water / Standing water; and
- G2 – Open water / Running water.

### Assessment of site location against species distribution

Water voles are known to occur in Dorset.

### Assessment of species habitat preference against site Phase 1 survey

No suitable habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

## **Harvest mouse *Micromys minutus***

### Conservation status

Harvest mice are listed as Priority Species within the UK Biodiversity Action Plan.

### Habitat niche and equivalent Phase 1 habitats

Harvest mice have a distribution bias to the south of England where the species is typically found in tall, dense grassy habitats including tall grass and rushes (particularly in large ditches), reedbeds, grassy hedgerows, bramble patches (Harris & Yalden 2008). In areas of modern agriculture cereal crops may be used with field headlands and rough grass banks act as refuges during the winter (*Op. cit.*). Young plantation woodlands may also be colonised (Harris & Yalden 2008).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- B5 – Grassland and marsh / Marsh/marshy grassland (culm grassland only);
- F1 – Swamp, marginal and inundation / Swamp (reedbed);

- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;
- J2.1 – Miscellaneous / Boundaries / Intact hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

#### Assessment of site location against species distribution

Harvest mice are known to occur in Dorset.

#### Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

### **Brown hare *Lepus europaeus***

#### Conservation status

Brown hares are listed as Priority Species within the UK Biodiversity Action Plan.

#### Habitat niche and equivalent Phase 1 habitats

Brown hares are most common in cereal-dominant arable fields, showing a marked preference for cultivated areas with crops, over non-cultivated areas, such as pasture, set-aside or woodland (Harris & Yalden 2008). There is a requirement for permanent cover, with survival of young generally higher in areas of mixed agriculture than those with cereal monocrops (Harris & Yalden 2008). Smaller fields providing year-round food and shelter are therefore preferred over a 'prairie' landscape (Harris & Yalden 2008). In areas of mixed agriculture, cattle-grazed pasture and fallow land, as well as strips of uncultivated land in arable fields are used (Harris & Yalden 2008). Brown hares are also known to use woods, shelter-belts and hedgerows, especially during the winter months (Harris & Yalden 2008).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.2 – Miscellaneous / Boundaries / Defunct hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

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Assessment of site location against species distribution

Brown hares are known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

**Mountain hare *Lepus timidus***Conservation status

Mountain hares are listed as Priority Species within the UK Biodiversity Action Plan.

Habitat niche and equivalent Phase 1 habitats

In Scotland mountain hares most often occur on open heather moorland, using rock crevices and stones for shelter (Harris & Yalden 2008, Burton 1968). Areas with a mosaic of heather moorland (sometimes recently planted with native trees), upland pastures and woodlands, preferably with a diverse herb-layer, are also used, as well as grass mires during the summer (Harris & Yalden 2008). Mountain hares in England typically occupy areas 130 m above sea level, selecting moors and hillsides dominated by heather and cotton-sedges, sometimes descending to lower altitudes during hard winters (Harris & Yalden 2008, Barrett-Hamilton *et al.* 1883). In Ireland (where they are known as the Irish hare) the species occupies a wide range of habitats, including lowland bogs, upland areas, coastal grasslands and agricultural grassland, but avoids intensively farmed areas (Harris & Yalden 2008, Barrett-Hamilton *et al.* 1883). Mountain hares have a varied diet, depending on the habitat occupied, feeding on heather, grasses, sedges, rushes, the bark or twigs of scrub and small trees, as well as lichens in winter (Harris & Yalden 2008, Burton 1968).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland / all types;
- A2 – Woodland and scrub / Scrub;
- A3 – Woodland and scrub / Parkland/scattered trees;
- B – Grassland and marsh;
- C2 – Tall herb and fern / Upland species-rich ledges;
- D – Heathland;
- E – Mire;
- H8 – Coastland / Maritime cliff and slope;
- I1 – Rock exposure and waste / Natural; and
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable (grasslands only).

Assessment of site location against species distribution

Mountain hares are not known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

N/A

**Hedgehog *Erinaceus europaeus***Conservation status

Hedgehogs are listed as Priority Species within the UK Biodiversity Action Plan.

Habitat niche and equivalent Phase 1 habitats

Hedgehogs occur in lowland habitats where grassland is present in adjacent to woodland, scrub or hedgerows, however, one study recorded them in only three of a total 82 pasture fields (Harris & Yalden 2008). They are generally scarce in coniferous woodland, marshy areas and moorland, but may be abundant in suburban areas particularly in proximity to amenity grassland (*Op. cit.*).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- J1.2 – Miscellaneous / Cultivated/disturbed land / Amenity grassland;
- J2.1 – Miscellaneous / Boundaries / Intact hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

Assessment of site location against species distribution

Hedgehogs are known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

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**Wildcat *Felis sylvestris***Conservation status

Wildcats are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

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

Habitat niche and equivalent Phase 1 habitats

Wildcats are found mainly on rocky mountainsides and moorland, usually less than 500 m above sea level (Harris & Yalden 2008, Burton 1968). Suitable habitat typically includes upland areas of rough grassland, grazed pasture, forests (especially conifer plantations), woodlands and agricultural areas, but the species generally avoids high mountainous areas, exposed coasts, areas of intensive agriculture and industrial or urban areas (Harris & Yalden 2008). Harsh winters can often cause them to descend from exposed areas to those with more woodland and scrub. Dens are often within large rocks, boulders, amongst tree roots, within hollow trees or even within old fox *Vulpes vulpes* earths or badger *Meles meles* setts (Harris & Yalden 2008, Burton 1968).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- C2 – Tall herb and fern / Upland species-rich ledges;
- D – Heathland;
- I1 – Rock exposure and waste / Natural; and
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable.

Assessment of site location against species distribution

Wildcats are not known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

N/A

## **Badger *Meles meles***

### Conservation status

Badgers and their occupied setts are protected under the *Protection of Badgers Act 1992*. It is an offence to kill a badger, to disturb a badger when in its sett or to damage or destroy an occupied sett. The Act defines an occupied sett as “any structure or place which displays signs indicating current use by a badger.” Natural England (2009) have provided guidance on the definition of ‘current use,’ stating that “for a sett to fall within the definition of the Act, a badger need not be in current occupation, and may not have been for some time. As long as there are signs present indicating “current use” the sett is defined as such in the Act and is therefore protected. The maximum lapse of time between last occupation by badgers and the inspection of a sett for it to be considered in “current use” is how long it takes the signs to disappear, or more precisely, to appear so old as to not indicate “current use” ... A sett is therefore protected as long as such signs remain present. In practice, this could potentially be for a period of several weeks after the last actual occupation of the sett by a badger or badgers.”

### Habitat niche and equivalent Phase 1 habitats

In the UK 50% of setts are located within deciduous woodland (Delahay *et al.* 2008) with coniferous woodland less favoured. This figure rises to 75% if woodland, hedgerow and scrub are combined (*op cit*). The Mammal Society’s 1963 survey found 92% of setts were dug into slopes and hedgerow setts are only common where the hedges typically occur on earth banks.

Vegetation cover near a sett is also important for entry and exit, and for young to play under shelter from potential predators (Neal & Cheeseman 1996). The loss of this cover may, particularly in cases of large scale landscape change such as tree felling, result in the abandonment of the main sett, with the clan relocating to an annex or subsidiary, making regular visits to the main sett but not returning until the vegetation has again built up to provide sufficient cover (*ibid*). The cover may itself also be an indicator of badger presence; badgers are very partial to elder *Sambucus nigra* berries and will eat them during nightly activity, depositing the seeds within spoil in a latrine close to the sett upon their return, and thereby providing a pre-manured substrate from which the seeds readily germinate and a thicket of elder springs up around the sett. This provides the cover the badgers favour and a ready food source. As such, the presence of an elder thicket in an area where the species is otherwise absent is often a conspicuous giveaway to the location of a badger sett.

**Note:** the above text describes optimum and ideal habitat location but may reflect encounters at a time when badger populations were below carrying capacity, indeed, absent entirely from many areas. More recently badgers have been recorded in open ground under tillage in Hampshire (Andrews H. *Pers. obs.*), and under open flat ground in Somerset and in the Fens (Andrews J. *Pers. obs.*). As such, a habitat assessment can only give a gauge of the quality of the habitat, not the probability of sett presence.

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;

- B – Grassland and marsh;
- J2.1 – Miscellaneous / Boundaries / Intact hedge;
- J2.3 – Miscellaneous / Boundaries / Hedge and trees; and
- J2.8 – Miscellaneous / Boundaries / Earth bank.

#### Assessment of site location against species distribution

Badgers are known to occur in Dorset.

#### Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland;
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

### **Otter *Lutra lutra***

#### Conservation status

Otters are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take an otter;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by an otter for shelter or protection; or
- Intentionally or recklessly disturb an otter when occupying a structure or place which it uses for that purpose.

#### Habitat niche and equivalent Phase 1 habitats

The main constituent of the otter’s diet is fish, although amphibians (mainly frogs) and crayfish may also make up a substantial proportion of the diet and mammals, birds and reptiles are also taken in some cases (Chanin 2003). Typically otters favour lowland streams, over 2 m wide (Chanin 1993) favouring those with dense aquatic vegetation in the channel margins (Bailey & Rochford 2006). However, otters are also found in a wide variety of other aquatic habitats including slow-flowing coarse fish rivers, faster salmon and trout waters, lakes, gravel-pits, tarns, fresh and salt-marshes, ditches, and in some areas along the seashore (Wayre 1979, Jefferies & Woodroffe 2008). Otters may also occasionally frequent very small streams (in winter months when lakes freeze over, and hunting becomes restricted to flowing water (Chanin 1993)) and even dry watercourses (Jefferies *et al.* 1986, Chanin 2001) but more often the latter are merely used as commuting routes between larger water-bodies, and these regularly used routes may develop well-worn trails which can be easily recognised (Chanin 1993).

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Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland (in association with G1 and/or G2);
- F – Swamp, marginal and inundation;
- G1 – Open water / Standing water;
- G2 – Open water / Running water; and
- H – Coastland.

#### Assessment of site location against species distribution

Otters are known to occur in Dorset.

#### Assessment of species habitat preference against site Phase 1 survey

No suitable habitat exists within the Swanworth Quarry Extension Phase 1 survey site.

### **Pine marten *Martes martes***

#### Conservation status

Pine martens are listed as Priority Species within the UK Biodiversity Action Plan. In addition, the species receives full legal protection under the *Wildlife & Countryside Act 1981 (& as amended)* and *The Conservation of Habitats and Species Regulations 2010*, which implements the provisions of EC Directive 92/43 (“the Habitats Directive”), which make it an offence to:-

- Intentionally kill, injure or take a pine marten;
- Intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a pine marten for shelter or protection; or
- Intentionally or recklessly disturb a pine marten when occupying a structure or place which it uses for that purpose.

#### Habitat niche and equivalent Phase 1 habitats

Pine martens are mostly arboreal, with woodland and scrub as favoured habitat, generally avoiding habitats lacking in tree and shrub cover (such as pasture), but sometimes occupying more open and rocky ground where there are pockets of tree or scrub cover (Harris & Yalden 2008, Burton 1968). It has been suggested that in Ireland such open habitats include limestone pavement (Mahony *et al.* 2006). Dens are associated with old growth woodland features and associated tree cavities or hollows, and it has been suggested that a scarcity of suitable features for use as natal dens may limit breeding success (Harris & Yalden 2008, Burton 1968). However, in Scotland pine martens are cited as occupying disused buildings, bird-boxes, under tree-roots, rabbit burrows, grassy rock piles and even relining old crow’s nests (*op. cit.*), and this may also be true of Ireland where woodland is moderately scarce (Burton 1968).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland; and
- A2 – Woodland and scrub / Scrub.

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Assessment of site location against species distribution

Pine martens are not known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

N/A

**Polecat *Mustela putorius***Conservation status

Polecats are listed as Priority Species within the UK Biodiversity Action Plan.

Habitat niche and equivalent Phase 1 habitats

Polecats have a distribution bias toward Wales and the Midlands. The species is associated with wetland and riparian vegetation, but also occurs on woodland edge habitat, woodland copse, on field boundaries and near disused farm buildings (during winter), generally avoiding open fields and suburban areas (Harris & Yalden 2008, Burton 1968). Dens are made of dry grass, and are often located in any suitable holes including fox earths, rabbit burrows or natural rock crevices (Burton 1968).

Equivalent Phase 1 habitats comprise:-

- A1 – Woodland and scrub / Woodland (edge/copse);
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- F – Swamp, marginal and inundation;
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable;
- J2.1 – Miscellaneous / Boundaries / Intact hedge; and
- J2.3 – Miscellaneous / Boundaries / Hedge and trees.

Assessment of site location against species distribution

Polecats are known to occur in Dorset.

Assessment of species habitat preference against site Phase 1 survey

Suitable habitats exist within the Swanworth Quarry Extension Phase 1 survey site comprising:-

- A1 – Woodland and scrub / Woodland (edge/copse);
- A2 – Woodland and scrub / Scrub;
- B – Grassland and marsh;
- J1.1 – Miscellaneous / Cultivated/disturbed land / Arable; and
- J2.1 – Miscellaneous / Boundaries / Intact hedge.

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**APPENDIX I. A REVIEW OF THE DISTRIBUTION, HABITAT REQUIREMENTS AND POTENTIAL FOR OCCURRENCE OF LEGALLY PROTECTED AND/OR UK BIODIVERSITY ACTION PLAN PRIORITY SPECIES OF BATS WITHIN THE SWANWORTH QUARRY EXTENSION PHASE 1 SURVEY SITE.**

Of the 17 bat species currently recognised as native to the British Isles 16 have been recorded in Dorset, comprising:-

- Serotine *Eptesicus serotinus*;
- Bechstein's bat *Myotis bechsteinii*;
- Brandt's bat *Myotis brandtii*;
- Daubenton's bat *Myotis daubentonii*;
- Whiskered bat *Myotis mystacinus*;
- Natterer's bat *Myotis nattereri*;
- Leisler's bat *Nyctalus leisleri*;
- Noctule *Nyctalus noctula*;
- Nathusius' pipistrelle *Pipistrellus nathusii*;
- Common pipistrelle *Pipistrellus pipistrellus*;
- Soprano pipistrelle *Pipistrellus pygmaeus*;
- Brown long-eared bat *Plecotus auritus*;
- Grey long-eared bat *Plecotus austriacus*;
- Greater horseshoe bat *Rhinolophus ferrumequinum*; and
- Lesser horseshoe bat *Rhinolophus hipposideros*.

In order to provide a predictive assessment of the bat species most likely to be present within the Swanworth Quarry Extension Phase 1 survey site, the habitats present were assessed against the known foraging habitat and roost preferences of the 16 bat species known to occur in Dorset as set out in Harris & Yalden (2008), Dietz *et al.* (2011) and individual accounts. Table I1 sets out the foraging habitat preferences. Table I2 sets out the summer roost preferences and Table I3 sets out the winter roost preferences. The results of the predictive assessment are provided at Table I4.

**Table I1. The typical foraging habitat preference of Dorset's 16 bat species.**

| SPECIES                                               | HABITAT NICHE                                                   | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                  | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Barbastelle</b><br><i>Barbastella barbastellus</i> | Broadleaved semi-natural and riparian woodland.                 | A1.1.1 Semi-natural broadleaved woodland                                                                                                                                                                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Serotine</b><br><i>Eptesicus serotinus</i>         | Woodland edge, orchards, parkland, pasture, meadows and hedges. | A1.1.1 Semi-natural broadleaved woodland (edge)<br>A1.1.2 Broadleaved plantation woodland (orchard)<br>A3 Parkland/scattered trees<br>B Grassland and marsh (grazed)<br>B2.1 Unimproved neutral grassland<br>J2.1 Intact hedge<br>J2.2 Defunct hedge<br>J2.3 Hedge and trees | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Bechstein's bat</b><br><i>Myotis bechsteinii</i>   | Deciduous woodland and orchards.                                | A1.1.1 Semi-natural broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland (orchard)                                                                                                                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                       | HABITAT NICHE                                                                                                                             | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                     | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Brandt's bat</b><br><i>Myotis brandtii</i>                 | Broadleaved, coniferous and mixed woodland, moorland and hedges.                                                                          | A1 Woodland<br>B1 Acid grassland<br>B5 Marshy grassland<br>D Heathland<br>E Mire<br>J2.1 Intact hedge<br>J2.2 Defunct hedge<br>J2.3 Hedge and trees                                                                                                                                                                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Alcathoe's bat</b><br><i>Myotis alcathoe</i>               | Streams in dense deciduous woodland.                                                                                                      | G2 Running water<br><b>in association with</b><br>A1.1 Broadleaved woodland                                                                                                                                                                                                                                                     | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Daubenton's bat</b><br><i>Myotis daubentonii</i>           | Woodland close to water, still or slow-moving fresh water, meadows and orchards.                                                          | G1 Standing water<br>G2 Running water (slow-moving)<br><b>in association with</b><br>A1 Woodland<br>A1.1.2 Broadleaved plantation woodland (orchard)<br>B2.1 Unimproved neutral grassland                                                                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>              | Woodland, glades, coppice, meadows, waterbodies, flowing water and hedgerows.                                                             | A1 Woodland<br>A3 Parkland/scattered trees<br>B2.1 Unimproved neutral grassland<br>G1 Standing water<br>G2 Running water<br>J2.1 Intact hedge<br>J2.2 Defunct hedge<br>J2.3 Hedge and trees                                                                                                                                     | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Natterer's bat</b><br><i>Myotis nattereri</i>              | Broadleaved, coniferous and riparian woodland, orchards, parkland, open arable fields, improved grassland and tree-lined river corridors. | A1.1 Broadleaved woodland<br>A1.1.2 Broadleaved plantation woodland (orchard)<br>A1.2 Coniferous woodland<br>A3 Parkland/scattered trees<br>B4 Improved grassland<br><b>AND COMBINATIONS OF</b><br>G2 Running water (river)<br><b>in association with</b><br>A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Leisler's bat</b><br><i>Nyctalus leisleri</i>              | Woodland, scrub, parkland, pasture (cattle grazed), improved grassland, lakes, canals, rivers and amenity grassland.                      | A1 Woodland<br>A2 Scrub<br>A3 Parkland/scattered trees<br>B Grassland and marsh (grazed)<br>B4 Improved grassland<br>G1 Standing water (lake or canal)<br>G2 Running water (river)<br>J1.2 Amenity grassland                                                                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Noctule</b><br><i>Nyctalus noctula</i>                     | Woodland, riparian woodland, pasture, meadows, and still or slow-moving water.                                                            | A1 Woodland<br>A1.1 Broadleaved woodland<br>B Grassland and marsh (grazed)<br>B2.1 Unimproved neutral grassland<br>G1 Standing water<br>G2 Running water (slow-moving)                                                                                                                                                          | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i> | Broadleaved and mixed woodland, tree lines or parkland near water, wet woodland, lakes and rivers.                                        | A1.1.1 Broadleaved semi-natural woodland (wet)<br><b>AND COMBINATIONS OF</b><br>A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees<br><b>in association with</b><br>G1 Standing water<br>G2 Running water<br>G1 Standing water (lake)<br>G2 Running water (river)          | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                          | HABITAT NICHE                                                                                                              | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                                                                                                                                                                                                           | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i>    | Deciduous woodland, coniferous and mixed plantation, tree lines, unimproved grassland, improved pasture, lakes and rivers. | A1.1 Broadleaved woodland<br>A2.2 Coniferous plantation woodland<br>A1.3.2 Mixed plantation woodland<br>A3 Parkland/scattered trees<br>B1.1 Unimproved acid grassland<br>B2.1 Unimproved neutral grassland<br>B3.1 Unimproved calcareous grassland<br>B4 Improved grassland (pasture)<br>G1 Standing water (lake)<br>G2 Running water (river)<br>J2.3 Hedge and trees | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>       | Broadleaved semi-natural woodland, riparian woodland, parkland, tree lines, lakes and rivers.                              | A1.1.1 Semi-natural broadleaved woodland<br>A3 Parkland/scattered trees<br>G1 Standing water (lake)<br>G2 Running water (river)<br>J2.3 Hedge and trees                                                                                                                                                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Brown long-eared bat</b><br><i>Plecotus auritus</i>           | Deciduous and mixed woodland, scots pine plantation, non-native coniferous woodland edge.                                  | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>A1.3 Mixed woodland (edge)                                                                                                                                                                                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Grey long-eared bat</b><br><i>Plecotus austriacus</i>         | Broadleaved and mixed woodland, orchards, meadows, pasture.                                                                | A1.1 Broadleaved woodland<br>A1.3 Mixed woodland<br>B Grassland (grazed)<br>B2.1 Unimproved neutral grassland                                                                                                                                                                                                                                                         | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | Deciduous woodland and hedgerows.                                                                                          | A1.1.1 Semi-natural broadleaved woodland<br>J2.1 Intact hedge<br>J2.2 Defunct hedge<br>J2.3 Hedge and trees                                                                                                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Lesser horseshoe bat</b><br><i>Rhinolophus hipposideros</i>   | Deciduous woodland.                                                                                                        | A1.1.1 Semi-natural broadleaved woodland                                                                                                                                                                                                                                                                                                                              | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

**Table I2. The typical summer roost preferences exhibited by Dorset's 16 bat species.**

| SPECIES                                               | HABITAT NICHE                                                          | EQUIVALENT PHASE 1 HABITATS                                                                                                    | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Barbastelle</b><br><i>Barbastella barbastellus</i> | Trees in woodland.                                                     | A1.1.1 Semi-natural broadleaved woodland                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Serotine</b><br><i>Eptesicus serotinus</i>         | Cliffs (Sam Dyer 2013 pers. comm. 1 <sup>st</sup> June) and buildings. | I1.1 Inland cliff<br>I2.1 Quarry (hard-stone)<br>J3.6 Buildings                                                                | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Bechstein's bat</b><br><i>Myotis bechsteinii</i>   | Trees.                                                                 | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees                                                             | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Brandt's bat</b><br><i>Myotis brandtii</i>         | Trees, buildings and bridges.                                          | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees<br>J3.6 Buildings<br>J5 Other habitat (bridge)              | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Alcathoe's bat</b><br><i>Myotis alcathoe</i>       | Trees.                                                                 | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees                                                             | Distribution:<br>No<br>Habitat Present:<br>N/A  |
| <b>Daubenton's bat</b><br><i>Myotis daubentonii</i>   | Trees, caves, buildings and bridges.                                   | A1 Woodland<br>A3 Parkland/scattered trees<br>I1.5 Cave<br>J2.3 Hedge and trees<br>J3.6 Buildings<br>J5 Other habitat (bridge) | Distribution:<br>Yes<br>Habitat Present:<br>Yes |

| SPECIES                                                          | HABITAT NICHE                                                 | EQUIVALENT PHASE 1 HABITATS                                                                                                           | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>                 | Buildings.                                                    | J3.6 Buildings                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Natterer's bat</b><br><i>Myotis nattereri</i>                 | Trees, cliffs and buildings.                                  | A1 Woodland<br>A3 Parkland/scattered trees<br>I1.1 Inland cliff<br>I2.1 Quarry (hard-stone)<br>J2.3 Hedge and trees<br>J3.6 Buildings | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Leisler's bat</b><br><i>Nyctalus leisleri</i>                 | Trees and buildings.                                          | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees<br>J3.6 Buildings                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Noctule</b><br><i>Nyctalus noctula</i>                        | Trees.                                                        | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees                                                                    | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i>    | Trees and buildings.                                          | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees<br>J3.6 Buildings                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i>    | Chapels, churches and houses.                                 | J3.6 Buildings                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>       | Chapels, churches and houses (including modern).              | J3.6 Buildings                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Brown long-eared bat</b><br><i>Plecotus auritus</i>           | Trees and buildings.                                          | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees<br>J3.6 Buildings                                                  | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Grey long-eared bat</b><br><i>Plecotus austriacus</i>         | Old buildings and churches.                                   | J3.6 Buildings                                                                                                                        | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | Natural cave systems, mines, large old buildings and cellars. | I1.5 Cave<br>I2.3 Mine<br>J3.6 Buildings<br>J3.6 Buildings (cellar)                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Lesser horseshoe bat</b><br><i>Rhinolophus hipposideros</i>   | Natural cave systems, mines, large old buildings and cellars. | I1.5 Cave<br>I2.3 Mine<br>J3.6 Buildings<br>J3.6 Buildings (cellar)                                                                   | Distribution:<br>Yes<br>Habitat Present:<br>No  |

**Table I3. The typical winter roost preferences exhibited by Dorset's 16 bat species.**

| SPECIES                                               | HABITAT NICHE                                              | EQUIVALENT PHASE 1 HABITATS                                                                             | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE  |
|-------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Barbastelle</b><br><i>Barbastella barbastellus</i> | Trees in woodland and cliffs (latter ref. Stebbings 1988). | A1.1.1 Semi-natural broadleaved woodland<br>I1.1 Inland cliff<br>I2.1 Quarry (hard-stone)               | Distribution:<br>Yes<br>Habitat Present:<br>Yes |
| <b>Serotine</b><br><i>Eptesicus serotinus</i>         | Cliffs (Stebbing 1988), caves, buildings and cellars.      | I1.1 Inland cliff<br>I1.5 Cave<br>I2.1 Quarry (hard-stone)<br>J3.6 Buildings<br>J3.6 Buildings (cellar) | Distribution:<br>Yes<br>Habitat Present:<br>No  |
| <b>Bechstein's bat</b><br><i>Myotis bechsteinii</i>   | Caves.                                                     | I1.5 Cave                                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No  |

| SPECIES                                                          | HABITAT NICHE                                                                                               | EQUIVALENT PHASE 1 HABITATS                                                                                                                                                        | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE                |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| <b>Brandt's bat</b><br><i>Myotis brandtii</i>                    | Caves, mines and cellars.                                                                                   | I1.5 Cave<br>I2.3 Mine<br>J3.6 Buildings (cellar)                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No                |
| <b>Alcathoe's bat</b><br><i>Myotis alcathoe</i>                  | Caves.                                                                                                      | I1.5 Cave                                                                                                                                                                          | Distribution:<br>No<br>Habitat Present:<br>N/A                |
| <b>Daubenton's bat</b><br><i>Myotis daubentonii</i>              | Cliffs (Altringham 2003), scree (BCT 2010), caves, mines, cellars and bridges.                              | I1.1 Inland cliff<br>I1.2 Scree<br>I1.5 Cave<br>I2.1 Quarry (hard-stone)<br>I2.2 Quarry spoil<br>I2.3 Mine<br>J3.6 Buildings (cellar)<br>J5 Other habitat (bridge)                 | Distribution:<br>Yes<br>Habitat Present:<br>No                |
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>                 | Caves, mines and cellars.                                                                                   | I1.5 Cave<br>I2.3 Mine<br>J3.6 Buildings (cellar)                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No                |
| <b>Natterer's bat</b><br><i>Myotis nattereri</i>                 | Scree, caves and quarry spoil.                                                                              | I1.2 Scree<br>I1.5 Cave<br>I2.2 Quarry spoil                                                                                                                                       | Distribution:<br>Yes<br>Habitat Present:<br>No                |
| <b>Leisler's bat</b><br><i>Nyctalus leisleri</i>                 | Trees.                                                                                                      | A1 Woodland<br>A3 Parkland/scattered trees<br>J2.3 Hedge and trees                                                                                                                 | Distribution:<br>Yes<br>Habitat Present:<br>Yes               |
| <b>Noctule</b><br><i>Nyctalus noctula</i>                        | Trees and cliffs (latter ref. Stebbings 1988).                                                              | A1 Woodland<br>A3 Parkland/scattered trees<br>I1.1 Inland cliff<br>I2.1 Quarry (hard-stone)<br>J2.3 Hedge and trees                                                                | Distribution:<br>Yes<br>Habitat Present:<br>Yes               |
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i>    | No data.                                                                                                    | No data.                                                                                                                                                                           | Distribution:<br>Yes<br>Habitat Present:<br>Unknown (No data) |
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i>    | Trees, cliffs (Schober & Grimmberger 1997), caves, stone walls (Stebbing <i>et al.</i> 2007) and buildings. | A1 Woodland<br>A3 Parkland/scattered trees<br>I1.1 Inland cliff<br>I1.5 Cave<br>I2.1 Quarry (hard-stone)<br>J2.3 Hedge and trees<br>J2.5 Wall (rough stone only)<br>J3.6 Buildings | Distribution:<br>Yes<br>Habitat Present:<br>Yes               |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>       | Trees, cliffs (Schober & Grimmberger 1997), caves, stone walls (Stebbing <i>et al.</i> 2007) and buildings. | A1 Woodland<br>A3 Parkland/scattered trees<br>I1.1 Inland cliff<br>I1.5 Cave<br>I2.1 Quarry (hard-stone)<br>J2.3 Hedge and trees<br>J2.5 Wall (rough stone only)<br>J3.6 Buildings | Distribution:<br>Yes<br>Habitat Present:<br>Yes               |
| <b>Brown long-eared bat</b><br><i>Plecotus auritus</i>           | Trees, cliffs (Gerrell 1981, Stebbings 1988), caves, mines and buildings.                                   | A1 Woodland<br>A3 Parkland/scattered trees<br>I1.1 Inland cliff<br>I1.5 Cave<br>I2.1 Quarry (hard-stone)<br>I2.3 Mine<br>J2.3 Hedge and trees<br>J3.6 Buildings                    | Distribution:<br>Yes<br>Habitat Present:<br>Yes               |
| <b>Grey long-eared bat</b><br><i>Plecotus austriacus</i>         | Caves and cellars.                                                                                          | I1.5 Cave<br>J3.6 Buildings (cellar)                                                                                                                                               | Distribution:<br>Yes<br>Habitat Present:<br>No                |
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | Natural cave systems, mines and cellars.                                                                    | I1.5 Cave<br>I2.3 Mine<br>J3.6 Buildings (cellar)                                                                                                                                  | Distribution:<br>Yes<br>Habitat Present:<br>No                |

| SPECIES                                                 | HABITAT NICHE                            | EQUIVALENT PHASE 1 HABITATS                       | DISTRIBUTION & HABITAT PRESENT IN PHASE 1 SITE |
|---------------------------------------------------------|------------------------------------------|---------------------------------------------------|------------------------------------------------|
| Lesser horseshoe bat<br><i>Rhinolophus hipposideros</i> | Natural cave systems, mines and cellars. | I1.5 Cave<br>I2.3 Mine<br>J3.6 Buildings (cellar) | Distribution:<br>Yes<br>Habitat Present:<br>No |

**Table I4. Summary of the potential suitability of roosting and foraging habitat within the Swanworth Quarry Extension Phase 1 survey site.**

| SPECIES                                               | SUITABILITY OF FORAGING HABITAT WITHIN SWANWORTH QUARRY EXTENSION                                                                                                                       | SUITABILITY OF POTENTIAL ROOST SITES WITHIN SWANWORTH QUARRY EXTENSION                                                                                                     |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Barbastelle</b><br><i>Barbastella barbastellus</i> | A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.                                                                                                                    | <b>Summer:</b> A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.<br><b>Winter:</b> A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural. |
| <b>Serotine</b><br><i>Eptesicus serotinus</i>         | A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural (edge);<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge. | <b>Summer:</b> None Present.<br><b>Winter:</b> None Present.                                                                                                               |
| <b>Bechstein's bat</b><br><i>Myotis bechsteinii</i>   | A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.                                                                                                                    | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b> None Present.                               |
| <b>Brandt's bat</b><br><i>Myotis brandtii</i>         | A1 – Woodland and scrub / Woodland;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                                                                                                | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b> None Present.                               |
| <b>Daubenton's bat</b><br><i>Myotis daubentonii</i>   | None Present.                                                                                                                                                                           | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b> None Present.                               |
| <b>Whiskered bat</b><br><i>Myotis mystacinus</i>      | A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge.                                         | <b>Summer:</b> None Present.<br><b>Winter:</b> None Present.                                                                                                               |
| <b>Natterer's bat</b><br><i>Myotis nattereri</i>      | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A3 – Woodland and scrub / Parkland/scattered trees.                                                                              | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b> None Present.                               |

| SPECIES                                                       | SUITABILITY OF FORAGING HABITAT WITHIN SWANWORTH QUARRY EXTENSION                                                              | SUITABILITY OF POTENTIAL ROOST SITES WITHIN SWANWORTH QUARRY EXTENSION                                                                                                                                                       |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Leisler's bat</b><br><i>Nyctalus leisleri</i>              | A1 – Woodland and scrub / Woodland;<br>A2 – Woodland and scrub / Scrub;<br>A3 – Woodland and scrub / Parkland/scattered trees. | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees. |
| <b>Noctule</b><br><i>Nyctalus noctula</i>                     | A1 – Woodland and scrub / Woodland;<br>A1.1 – Woodland and scrub / Woodland / Broadleaved.                                     | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees. |
| <b>Nathusius' pipistrelle</b><br><i>Pipistrellus nathusii</i> | None Present.                                                                                                                  | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b> Unknown (No data).                                                                            |
| <b>Common pipistrelle</b><br><i>Pipistrellus pipistrellus</i> | A1.1 – Woodland and scrub / Woodland / Broadleaved;<br>A3 – Woodland and scrub / Parkland/scattered trees.                     | <b>Summer:</b> None Present.<br><b>Winter:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.5 – Miscellaneous / Boundaries / Wall (rough stone only).                 |
| <b>Soprano pipistrelle</b><br><i>Pipistrellus pygmaeus</i>    | A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural;<br>A3 – Woodland and scrub / Parkland/scattered trees.    | <b>Summer:</b> None Present.<br><b>Winter:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees;<br>J2.5 – Miscellaneous / Boundaries / Wall (rough stone only).                 |
| <b>Brown long-eared bat</b><br><i>Plecotus auritus</i>        | A1.1 – Woodland and scrub / Woodland / Broadleaved.                                                                            | <b>Summer:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees.<br><b>Winter:</b><br>A1 – Woodland and scrub / Woodland;<br>A3 – Woodland and scrub / Parkland/scattered trees. |
| <b>Grey long-eared bat</b><br><i>Plecotus austriacus</i>      | A1.1 – Woodland and scrub / Woodland / Broadleaved.                                                                            | <b>Summer:</b> None Present.<br><b>Winter:</b> None Present.                                                                                                                                                                 |

| SPECIES                                                          | SUITABILITY OF FORAGING HABITAT WITHIN SWANWORTH QUARRY EXTENSION                                                         | SUITABILITY OF POTENTIAL ROOST SITES WITHIN SWANWORTH QUARRY EXTENSION |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Greater horseshoe bat</b><br><i>Rhinolophus ferrumequinum</i> | A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural;<br>J2.1 – Miscellaneous / Boundaries / Intact hedge. | <b>Summer:</b> None Present.<br><b>Winter:</b> None Present.           |
| <b>Lesser horseshoe bat</b><br><i>Rhinolophus hipposideros</i>   | A1.1.1 – Woodland and scrub / Woodland / Broadleaved / Semi-natural.                                                      | <b>Summer:</b> None Present.<br><b>Winter:</b> None Present.           |

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