

**SRC RECYCLING CENTRE,  
EASTERGATE, WEST SUSSEX**

**Ecological Impact Assessment**

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|--------------------------|--------------------------------|
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| <b>Client name</b>       | SRC Recycling Ltd              |
| <b>Corylus reference</b> | 20142                          |

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## 1.0 INTRODUCTION

- 1.1 Corylus Ecology has been commissioned to prepare documents in relation to a planning application at SRC Recycling Centre in Eastergate, Chichester, Sussex, hereinafter referred to as 'the Site'. The Site is located on the northern edge of Eastergate village, at OS grid reference SU 944 058. The proposals are for the development of 80 residential units and one 'co-working hub' with associated landscaping.
- 1.2 Corylus Ecology has undertaken botanical and protected species surveys to inform this ecological impact assessment (EclA) for the proposed scheme. The protected species surveys include species-specific surveys for great crested newt (GCN) *Triturus cristatus*, bats, reptiles and hazel dormouse *Muscardinus avellanarius*, to determine their use of habitats within the Site, as recommended in the 'Preliminary Ecological Appraisal Report' (Corylus Ecology, January 2021).
- 1.3 The results of the botanical and protected species surveys have been used to inform this EclA, including commensurate mitigation strategies designed to minimise those impacts. Further details relating to ecological enhancements have also been recommended in this report.
- 1.4 The objectives of the surveys and report are to:
- Determine the status and condition of the grassland and hedgerows within the Site;
  - Determine the presence/absence of protected species within the Site;
  - Evaluate the conservation significance of each surveyed assemblage of grassland, hedgerow and species;
  - Identify potential impacts arising from the construction and operation of the proposed development;
  - Identify measures to mitigate the impacts of the scheme on habitats and protected species; and,
  - Provide recommendations for additional mitigation and enhancements.
- 1.5 This report has been prepared for the exclusive use of SRC Recycling Ltd. No part of this report should be considered as legal advice.

## 2.0 METHODOLOGY

### 2.1 Habitat Assessment

- 2.1.2 A grassland survey, undertaken in order to characterise the grassland types within the Site, and a Hedgerow Regulations assessment to classify the importance of the hedgerows that are within/adjacent to the Site, were completed on 14<sup>th</sup> July 2021. The grassland survey followed the methodology described in the Farm Environment Plan (FEP) Manual (Natural England, March 2010) and the hedgerow survey followed guidelines published by Defra (2007). Further details of the methodologies of both surveys are provided in Appendix 2. In addition, an update of the condition of all habitat types within the Site was completed during the July 2021 visit.

### 2.2 Great Crested Newt Presence/likely absence

#### *Habitat Suitability Index (HSI) Survey Methodology*

- 2.2.1 All ponds within 250m of the Site, and for which access was granted, were subject to a HSI assessment on 31<sup>st</sup> March 2021. Only two ponds (P2 and P9) to the north of the Site were surveyed under this criteria. Landowner permission was not granted to the surveyors to assess pond P1 to the east of the Site (see Figure 2).
- 2.2.2 The HSI Assessment of P2 and P9 followed guidance published by the Amphibian and Reptile Groups (ARG) in 2010, see Appendix 3 for further details.
- 2.2.3 There are six ponds between 360m and 500m of the Site (P3 – P8) however these ponds have not been assessed for their suitability to support GCN due to significant barriers for GCN being present between these ponds and the Site.

### 2.3 Bat presence/likely absence

#### *Bat Presence/likely Absence Survey – T1*

- 2.3.1 One bat presence/likely absence survey of the tree mounted bat box on tree T1 (see Figure 1) was undertaken on 14<sup>th</sup> July 2021. This included an internal visual inspection of the box, for evidence of bats or bats themselves, by the surveyor. The survey was completed by Louise Ryan (licence number 2018-37694-CLS-CLS) of Corylus Ecology with assistance from Alex Clayton of Clayton Ecology.

### 2.4 Reptile presence/likely absence

- 2.4.1 The reptile presence/likely absence survey of the Site was undertaken by Corylus Ecology between 29<sup>th</sup> April and 28<sup>th</sup> September 2021.
- 2.4.2 The surveys followed guidance set out from Froglife (1999 and 2015) and the Herpetofauna Groups of Britain and Ireland (HGBI, 2004). The guidance is described in further detail in Appendix 4.

2.4.3 The evaluation of the reptile survey results follows guidance set out by Froglife and is also described in further detail in Appendix 4

2.4.4 The survey involved the placement of 46 heat traps (comprising 0.7m x 1.0m pieces of heavy gauge mineral roofing felt) in suitable habitat throughout the Site; the suitable habitat is mainly in the west of the Site and along the boundaries including the area of grassland, vegetated earth bunds, scrub/tall ruderal and multiple spoil piles and mammal holes (see Figure 3). The use of 46 heat traps within the c.2ha of the Site considered to be suitable reptile habitat, provided a density greater than the ten felts per ha recommended in Froglife guidance (1999). Seven survey visits were undertaken, between April and September 2021, during suitable weather conditions.

## **2.5 Dormouse presence/likely absence**

2.5.1 The surveys followed the guidance from Natural England in the Dormouse Conservation Handbook 2<sup>nd</sup> edition, and this is set out in Appendix 5 (English Nature, 2006). A total of 15 tubes and two boxes were installed across the Site considered to be suitable dormouse habitat, at approximately 10-20 metre intervals on 31<sup>st</sup> March 2021 (see Figure 3). They were installed along two hedgerows and an area of scrub within the Site. The tubes and boxes were located in the areas with the best structure to maximise the probability of detecting any population which may be present. Only one tube and one box were set in habitats in the east of the Site due to this area being an active car recycling centre with machines and buildings preventing the surveyors accessing the hedgerow along the northern boundary, as well as the high risk of the tubes/boxes being damaged by the activity and health and safety risks for the surveyors.

2.5.2 Surveys of the tubes and boxes were undertaken on 29<sup>th</sup> April, 20<sup>th</sup> May, 30<sup>th</sup> June, 14<sup>th</sup> July, 24<sup>th</sup> August and 28<sup>th</sup> September 2021. The licenced dormouse surveyor was Alex Clayton CL10A 2016-21364-CLS-CLS.

2.5.3 The evaluation of the dormouse survey results follows guidance set out by the Dormouse Conservation Handbook (Natural England, 2006) and this and is described in further detail in Appendix 5.

2.5.4 With regards to this Site, the size of the survey area, quality and amount of the habitats did not permit 50 tubes/boxes. A total of 15 tubes and two boxes were installed at a relatively high density where suitable habitat was present. On the basis of the area of suitable habitat present, it is considered that a suitable number of tubes/boxes were installed to provide robust and reliable survey results.

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## **2.6 Ecological Impact Assessment**

- 2.6.1 The general approach to the assessment of potential impacts of the proposed development on features of specific ecological and broader biodiversity interest, as well as the identification of appropriate mitigation measures to ameliorate those impacts, follows the Guidelines for Ecological Impact Assessment in the UK and Ireland ("EclA") produced by the Chartered Institute of Ecology and Environmental Management ("CIEEM"). These guidelines are web based and subject to review and updating. A summary is provided in Appendix 1.

### 3.0 RESULTS

#### 3.1 Habitat Assessment

- 3.1.1 The most dominant vegetated habitat within the Site is grassland, however large areas of the Site are bare earth or heavily disturbed and support ruderal and ephemeral species. There are also areas of isolated bramble *Rubus fruticosus* sp., agg scrub around the edges of the grassland and two hedgerows within the Site.

##### *Grassland Assessment*

- 3.1.2 The grassland assessment found the sward is dominated by grasses and the cover of perennial rye grass *Lolium perenne* and white clover *Trifolium repens* amounts to 51.6% of the total area. Other grasses recorded to be frequent include rough meadow-grass *Poa trivialis*, false oat-grass *Arrhenatherum elatius* and creeping bent *Agrostis stoloniferous*. Cock's-foot *Dactylis glomerata* is also present occasionally. The total cover of herbaceous species is 17.6%; the majority of herb species occur rarely in the grassland. The total cover of undesirable species, including common nettle *Urtica dioica*, common ragwort *Senecio jacobaea* and creeping thistle *Cirsium arvense*, is 18.5%. Appendix 6 shows the species recorded per quadrat.

- 3.1.3 Other herbs noted to occur infrequently in the grassland but not within the quadrats include hop trefoil *Trifolium campestre*, broad-leaved willowherb *Epilobium montanum*, common milkwort *Polygala vulgaris* and weld *Reseda luteola*. During the PEA in November 2020, heath bedstraw *Galium aparine* and autumn hawkbit *Scorzoneroideis autumnnalis* were also recorded infrequently in the north-west of the Site.

##### *Hedgerow Assessment*

- 3.1.4 The results of the hedgerows assessment are described in Table 1 below. Neither of the hedgerows are important hedgerows under the Hedgerows Regulations 1997.

Table 1 - Hedgerows Regulations Assessment Criteria

| Hedgerow | Length (approx.) | Average No. of woody species present in 30m | At least one standard tree/50m | Connectivity | Additional criteria   | Status                                           |
|----------|------------------|---------------------------------------------|--------------------------------|--------------|-----------------------|--------------------------------------------------|
| TN1      | 200m             | 4.5                                         | Yes                            | 3            | -                     | Species-poor hedgerow with trees that is defunct |
| TN11     | 94m              | 3                                           | Yes                            | 0            | Gaps <10% of hedgerow | Intact species-poor hedgerow with trees          |

### 3.2 GCN presence/likely absence surveys

#### HSI Assessments

##### Pond P2

- 3.2.1 This pond is a large, rectangle pond that is lined and used to breed wildfowl (Figure 4). There is no emergent vegetation in the pond and as a result the banks of the ponds have been very compacted and eroded by the birds. The water quality is assessed as being poor. The immediate habitat surrounding the pond includes bare earth, short grassland and hardstanding, which is not suitable terrestrial habitat for GCN or any other amphibians. Overall, this pond P2 received a HSI score of '0.42' indicating 'Poor' suitability for GCN. Table 2 below shows the results of the assessment.

*Table 2 - Habitat suitability Index Assessment Result, P2*

|                |       |      |
|----------------|-------|------|
| Location       | 1     | 1    |
| Pond area      | 175   | 0.4  |
| Pond drying    | never | 0.9  |
| Water quality  | poor  | 0.33 |
| Shade          | 0%    | 1    |
| Fowl           | Major | 0.01 |
| Fish           | minor | 1    |
| Ponds          | 5     | 1    |
| Terr'l habitat | poor  | 0.33 |
| Macrophytes    | 0%    |      |
| HSI            | Poor  | 0.42 |

##### Pond P9

- 3.2.2 Pond P9 is a small garden pond that is lined. It is steep sided with limited emergent vegetation and supports a dense population of carp. The immediate surrounding habitat includes a residential garden with ornamental planting and trees; these habitats are suitable for GCN foraging, commuting and provide features to be used for refuge. P9 received a score of '0.38', indicating poor suitability for GCN. The results are shown in Table 3 below:

Table 3 - Habitat Suitability Index Assessment Result P9

|                |          |      |
|----------------|----------|------|
| Location       | 1        | 1    |
| Pond area      | 15       | 0.05 |
| Pond drying    | never    | 0.9  |
| Water quality  | moderate | 0.67 |
| Shade          | 0%       | 1    |
| Fowl           | absent   | 1    |
| Fish (carp)    | major    | 0.01 |
| Ponds          | 5        | 1    |
| Terr'l habitat | moderate | 0.67 |
| Macrophytes    | 0%       | 0.3  |
| HSI            | Poor     | 0.38 |

### 3.3 Bat presence/likely absence surveys

3.3.1 No evidence of bats was found in the tree mounted bat box on T1 during the inspection.

### 3.4 Reptiles Presence/Likely absence surveys

3.4.1 No reptiles were recorded within the Site during the seven survey visits.

3.4.2 Full results and weather conditions of the reptile surveys are included in Appendix 7.

### 3.5 Dormice Presence/Likely absence surveys

3.5.1 No dormouse, or evidence of dormouse, has been found during any of the surveys.

3.5.2 Full results and weather conditions of the dormouse surveys are included in Appendix 8.

## 4.0 EVALUATION

### 4.1 Habitat Assessment

- 4.1.1 The phase 1 habitat survey undertaken during the PEA in late 2020 found the Site supported a limited diversity of habitats, being dominated by hardstanding/buildings in the east and grassland in the west. During the PEA in November 2020, two plant species included on the indicator lists for unimproved grassland in Kent were recorded infrequently: heath bedstraw *Galium aparine*, an indicator of unimproved acid grassland and autumn hawkbit *Scorzoneroidea autumnalis*, an indicator of unimproved neutral grassland (KWT, 2015). There were also areas of scattered scrub with spoil, ruderal vegetation and heavily disturbed ground (bare or supporting ephemeral species) in the west. One hedgerow is present along the northern boundary and one is present in the south-west.

#### *Grassland Assessment*

- 4.1.2 Following the key for the FEP survey completed in July 2021, the grassland species assemblage is found to be dominated by grass species (82%) with a moderate cover of wildflower and sedges (>10% but <30%). It has also been found to be species-poor with an average of 8 species/m<sup>2</sup>. Regarding heath bedstraw and autumn hawkbit, neither of these indicator species were recorded in any of the quadrats during the FEP survey, demonstrating that the abundance and distribution of the two species within the grassland is restricted. No other indicator species were recorded in the grassland during the 2021 survey.
- 4.1.3 The FEP survey has also found the total cover of perennial rye grass and white clover within the grassland to be greater than 30% and the total cover of undesirable species to be 18.5%. Other species associated with improvement and disturbance recorded in the grassland include common nettle, common thistle *Cirsium arvense* and hogweed *Heracleum sphondylium*. Regarding other grass species, creeping bent, false oat-grass and Yorkshire-fog *Holcus lanatus* are frequent throughout the grassland.
- 4.1.4 Taking all factors into account, the grassland should not be assessed as unimproved grassland of any type and should be assessed as being species-poor, semi-improved grassland. Due to total cover of perennial rye-grass and the assemblage and abundance of other species in the sward the grassland has been identified to have similarities to National Vegetation Classification (NVC) community MG7 *Lolium perenne* leys (JNCC, 2006 and Rodwell 1991-2000).

#### *Hedgerow Assessment Regulations*

- 4.1.5 The hedgerows within the Site (TN1 and TN11) have been assessed under the wildlife and landscape criteria of the Hedgerows Regulations 1997. Neither of these hedgerows meet the criteria for Important Hedgerows. However both comprise native species and the hedgerow along the northern boundary TN1

supports a good diversity of fruiting and flowering plants therefore these hedgerows provide good value for biodiversity.

4.1.6 Overall, the habitats within the Site are considered to be of Site Importance.

## **4.2 Great Crested Newt**

4.2.1 HSI assessments of two ponds (P2 and P9) within 250m of the Site have indicated that they are of 'Poor' suitability for GCN and as a result no further presence/likely absence surveys of P2 and P9 for GCN were completed. Pond P1 is the only other pond within 250m of the Site and access was not granted to the surveyors by the landowner to assess this pond. Although this pond was not assessed, there are significant barriers to newts between it and the Site. There are also significant barriers to newt dispersal situated between P3 – P8 over 360m to the west of the Site.

4.2.2 Overall it is considered that GCN will not be using habitats within the Site and therefore the Site is not of any Importance for GCN.

## **4.3 Bats**

4.3.1 The PEA identified the presence of a single bat box on tree T1. Additionally, trees T2 – T4 were identified as having moderate potential to support bat roosts in November 2020. However, trees T2 – T4 were lost during a storm and therefore currently the only habitat suitable for supporting roosting bats on Site, is the bat box on T1. When surveyed, no evidence for the presence of roosting bats was recorded in the box. Nevertheless, the presence of a potential roost site is being assessed as being of Site Importance for bats.

## **4.4 Reptiles**

4.4.1 The results of the surveys did not confirm the presence of any reptiles within the Site. The Site is not of any Importance for reptiles.

## **4.5 Dormouse**

4.5.1 The results of the surveys did not confirm the presence of a dormouse population within the Site.

4.5.2 However, as detailed in the PEA report (Corylus Ecology, January 2021), it is acknowledged that a population of hazel dormouse is present in habitats within the residential development adjacent to the Site's western boundary and an active European Protected Species Mitigation (EPSM) licence for dormice is in place (EPSM 2017 2017-32235-EPS-MIT) to permit this adjacent development (full planning permission reference APP/C3810/A/14/2217385). There is connectivity between the Site and adjacent development for dormice along the northern boundary. In addition, the newly created/enhanced

hedgerows that are to be provided under the mitigation strategy for dormice within the development to the west will be adjacent to the Site's western boundary. The Site is therefore considered to be of Neighbourhood Importance to the local dormouse population.

## 5.0 IMPACT ASSESSMENT

### 5.1 Construction Impacts and Operational/Existence Effects

5.1.1 During the construction phase the proposed development will involve a variety of construction activities that have the potential to give rise to:

- excessive dust generation when works are undertaken during periods of prolonged dry weather;
- accumulations of surface water during heavy rainfall events;
- potential pollution events arising from the inappropriate management of fuels or other chemicals;
- increases in noise disturbance;

5.1.2 The existence effects of the proposed development will result in the loss of an approximately 2ha mosaic of grassland, bare ground and heavily disturbed ruderal, scrub and hedgerow habitats.

#### *Habitats*

5.1.3 The grassland is classified as species-poor semi-improved. The species-poor hedgerows are not classified as 'Important' under the Hedgerows Regulations criteria. The proposed development will result in the loss of approximately 1.8ha of grassland and 40m of the hedgerow in the south-west. This hedgerow does not connect to any other hedgerows, scrub or woodland in the wider landscape therefore its loss will not result in any habitat fragmentation. Therefore, without mitigation, the loss of grassland and hedgerows is considered to be a Minor Adverse effect at the Site Level.

5.1.4 The hedgerow along the northern boundary will be retained in its entire. Potential indirect impacts of the development on the retained hedgerows will be during the construction phase, as outlined above.

5.1.5 Mitigation proposals in relation to construction activities will be addressed through a Construction and Environmental Management Plan (CEMP) and mitigation associated with operational/existence effects will include the creation of new habitat i.e. new planting (see Section 6.0 below and Figure 5 for further detail). With mitigation, the residual impacts will be of a probable Minor Beneficial effect significant at Site Level.

### 5.2 Bats

5.2.1 No bat roosts have been confirmed present within the Site and the tree which supports the bat box will be retained through the development.

5.2.2 Therefore the potential impacts of the development on bats within the vicinity of the Site would relate to increases in artificial lighting associated with the completed development. It is assessed that without

mitigation the increased lighting levels would result in a probable Minor Adverse indirect effect at the Neighbourhood level.

- 5.2.3 The delivery of a sensitive lighting strategy, in addition to the new habitat creation/enhancement, will limit any increases in lighting levels associated with the completed development whilst also providing new or additional foraging habitat for bats within the vicinity. Therefore, with mitigation, the residual impacts of the proposed development would result in an overall uncertain Minor Beneficial indirect effect at the Neighbourhood Level.

### 5.3 Dormouse

- 5.3.1 The Site does not support a population of dormice therefore there will be no direct impacts arising from the proposed development. However, this species is present in the development to the west and there is connectivity between areas of suitable dormouse habitat within the Site (hedgerow along the northern boundary) and the adjacent offsite dormouse habitat. The most optimal habitat within the Site for dormouse includes the hedgerow along the northern boundary and this will be retained through the development. The hedgerow in the south-west that will be partially lost is potentially suitable however it is already isolated at both ends and supports limited plant food species for dormice and therefore their occasional presence is considered to be highly unlikely.
- 5.3.2 Therefore any potential indirect impacts of the development on the local dormouse population include an increase in noise disturbance and dust accumulation on the retained vegetation during the construction phase, and anthropogenic disturbance post construction. Overall, therefore, without mitigation the proposals would result in an uncertain Minor Adverse indirect effect at the Neighbourhood Level.
- 5.3.3 A range of mitigation measures are proposed to ameliorate both potential construction and longer-term existence effects on the neighbouring dormouse population (see Section 6.0 and Figure 5). Implementation of the proposed mitigation measures would result in an overall uncertain Minor Beneficial direct effect at the Neighbourhood level through an increase in habitat connectivity through the landscape.

## 6.0 MITIGATION STRATEGY AND AVOIDANCE MEASURES

6.1 The mitigation strategy provides the framework for delivering a suite of interventions to minimise effects arising from the proposed development on species of nature conservation value occurring on the Site.

6.2 The overall objectives of the Mitigation Strategy, as proposed in Table 4, are to:

- 1) Provide adequate compensatory habitat to ensure retention and enhancement of the Site's ability to support existing diversity and abundance of habitats and species;
- 2) Avoid any increase in the fragmentation of habitats located within and adjacent to the Site and enhance connectivity in and around the Site through habitat creation;
- 3) Retain and enhance the suitability of existing habitats as commuting routes by dormice and bats and provide new areas of suitable habitat;
- 4) Limit dust, drainage and noise pollution during construction activities;
- 5) Limit the impacts of lighting on linear habitats on-site and adjacent to the development.

Table 4 –Outline Mitigation Strategy and Avoidance Measures

| Habitat Feature and Impact                                                                                                                                                                                                                                                                                                                         | Practical mitigation measures including working practices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Impact without mitigation                                                      | Impact with mitigation                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b><u>Ruderal, Scrub, Hedgerow, Trees and species-poor semi-improved grassland</u></b><br>Loss of plant species diversity and habitat corridor function; loss of connectivity for wildlife; reduction in breeding bird habitat and foraging habitat for birds and invertebrates.                                                                   | To compensate for loss of removed trees, a small section of hedgerow, scattered scrub, species-poor semi-improved grassland and ruderal vegetation there will be habitat enhancement and creation around the development including: <ul style="list-style-type: none"> <li>Enhancement and long-term management of retained hedgerows to make species-rich with a good structure;</li> <li>Creation of species-rich grassland using a suitable seed mix;</li> <li>New tree planting of native origin;</li> <li>Native, species-rich shrub planting; and,</li> <li>Native, species-rich hedgerow planting.</li> </ul><br>The retained hedgerows will be enhanced to create species-rich hedgerows through plug planting and will be protected to meet British Standard BS 5837:2012.<br>Long term management of these to be implemented to prevent the hedgerows becoming overgrown/defunct and maintain the grassland as a species-rich wildflower meadow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Minor Adverse effect significant at Site Level                                 | Probable Minor Beneficial effect significant at Site Level                        |
| <b><u>Bat habitat</u></b><br>Indirect impact on tree T1 with mounted bat box on retained tree through increased artificial lighting and noise in the area.<br>Increased artificial lighting represents a minor potential adverse impact on existing and newly created or enhanced habitats that provide habitat for foraging and commuting routes. | Design and implementation of a Sensitive Lighting Strategy; key points of this strategy will include: <ul style="list-style-type: none"> <li>i) Minimise light spill along the boundaries of the Site and on the newly created and retained habitats and trees and importantly on T1 and the western and northern boundaries;</li> <li>ii) Eliminate any bare bulbs and upward pointing lighting;</li> <li>iii) Minimise light spill, particularly on T1 and along the western and northern boundaries. The light spill should be kept near to or below the horizontal. Flat cut-off lanterns are best.</li> <li>iv) Consider the height of lighting columns. Light at a low level generally reduces impact.</li> <li>v) Use narrow spectrum bulbs to lower the range of species affected by lighting. Use light sources that emit minimal ultra-violet light and avoid the white and blue wavelengths of the light spectrum to avoid attracting lots of insects.</li> <li>v) Lights should peak higher than 550nm or use glass lantern covers to filter UV light. White LED lights do not emit UV but have still been shown to disturb slow-flying bat species.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Probable Minor Adverse indirect effect significant at the Neighbourhood Level  | Uncertain Minor Beneficial indirect effect significant at the Neighbourhood Level |
| <b><u>Dormice Habitat</u></b><br>Loss of small section of species-poor hedgerow and uncertain, indirect potential impacts through an increase in noise, lighting and anthropogenic disturbance on retained habitat, and off-site adjacent dormouse habitat.                                                                                        | Implementation of the following mitigation strategy to avoid disturbance to the local dormouse population, and to provide enhanced and new habitat to ensure the long term viability of the local population.<br><i>If any dormouse are found during the following measures then the development will need to be halted until an EPSM licence (issued by Natural England) is obtained. The small section of hedgerow to be removed will take place during the dormouse active season and post the main breeding season. The timings will also need to take into account the breeding bird period (March – August). This means vegetation clearance should take place during September and October.</i><br><u>Pre- and during development measures:</u> <ul style="list-style-type: none"> <li>Prior to the works commencing, a suitably experienced ecologist should deliver a dormouse toolbox talk to the construction team to explain the presence of dormouse in the local landscape and the vicinity of the Site.</li> <li>Prior to the works commencing, the installation of protective measures including fencing with dust/light protection screening along the edge of the retained hedgerows and along the western boundary of the Site.</li> <li>Prior to habitat removal, a precautionary search for any evidence of dormouse, such as nests, by a suitably experienced ecologist.</li> <li>Ecological supervision of habitat removal. The above ground vegetation habitat should be removed using brush cutters or a machine mounted flail.</li> </ul><br><u>Post-development measures:</u> <ul style="list-style-type: none"> <li>Long-term management of the hedgerows and shrub planting to prevent these habitats becoming overgrown and mature which would reduce their suitability for dormice. This will involve rotational management of the hedgerows, such as only one side and/or 1/3 of a hedgerow being cut at one time.</li> </ul> | Uncertain Minor Adverse indirect effect significant at the Neighbourhood Level | Uncertain Minor Beneficial direct effect significant at the Neighbourhood Level   |
| <b>AVOIDANCE MEASURES</b>                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                |                                                                                   |
| <b><u>Breeding Birds</u></b><br>Building and vegetation removal could cause damage or destruction of actively used bird nests.<br><br>Loss of potential nesting sites of birds and bird feeding areas, through the development of the Site.                                                                                                        | Sensitive timing of building demolition works and vegetation clearance works to be avoid the bird breeding season (March-August inclusive). The timings of the vegetation clearance will need to take into account the suitable timings to remove any dormouse habitat. Therefore, the vegetation clearance will be between September and October.<br><i>If any building demolition or vegetation clearance takes place during the core bird breeding season then it is recommended that buildings or vegetation are checked by a suitably experienced ecologist before works commence. If any breeding birds are noted, works in the vicinity of the nest(s) would have to cease until fledging has occurred.</i><br>The suitability of the Site will be maintained and enhanced for breeding birds through the creation and enhancement of the wildflower meadow and boundary features; planting will include native food plants for a range of bird species and invertebrates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                |                                                                                   |

## 7.0 ECOLOGICAL ENHANCEMENTS

### ***Biodiversity Net Gain***

- 7.1 A Biodiversity Net Gain assessment (BNG) is to be produced and this will provide further details on habitat enhancement and creation that is proposed to achieve a net gain in biodiversity. This will include details on long-term monitoring and management to ensure the habitats reach target condition and remain suitable to provide a benefit for biodiversity.
- 7.2 Other enhancements to increase the value of the Site for biodiversity have been detailed below.

#### *Hedgehog*

- If any close board fencing is to be installed around the new property, 13cm x 13cm holes should be cut into the base of the fences to allow hedgehogs to move through the landscape. It is also recommended that hedgehog boxes are installed along the base of the retained hedgerows or treelines.

#### *Insects*

- Insect boxes should be installed around the development to enhance it for invertebrates. Ready-made insect boxes are available from NHBS: [www.nhbs.com/browse/subject/926/insectboxes](http://www.nhbs.com/browse/subject/926/insectboxes).

#### *Log Piles*

- Log piles should be incorporated into suitable areas of the development, including the areas of scrub in the north and east of the Site and at the base of the hedgerows.

#### *Birds*

Bird Boxes will be positioned on trees around the boundaries of the Site. Boxes to be installed in vegetation include:

- A minimum of two Vivara Pro Woodstone Seville Bird Boxes, positioned at 3m on northern side of tree;
- A minimum of three Vivara Pro Barcelona WoodStone Open Nest Boxes, positioned at 3m on northern side of tree;
- A minimum of two Schwegler 1B tit bird boxes hung at a height of 2 – 4m, positioned south-west; and,
- A minimum of two 1ZA Schwegler Wren Roundhouses, installed in vegetation 2m from the ground.

Bird Boxes will be positioned on buildings within the Site. The boxes will be positioned at 3m on northern or south-western side of building. Boxes to be installed include:

- A minimum of five house sparrow Terrace FSC Nest boxes.

## 8.0 CONCLUSIONS

- 8.1 Surveys to inform an Ecological Impact Assessment (EclA) have been undertaken at the Site referred to as the SRC Recycling Centre. The impact assessment has been based on ecological surveys undertaken between March and October 2021. The assessment is in relation to plans to demolish the buildings and remove habitats to allow for residential development and a co-hub working centre with associated landscaping.
- 8.2 The grassland assessment has identified the grassland to be species-poor semi-improved and the hedgerow assessment did not find any of the on-site hedgerows to be 'Important' under the Hedgerows Regulations. The grassland and hedgerows have been assessed to be of Site Importance. Included in the scheme is the creation of wildflower meadows, native, species-rich shrub/hedgerow and tree planting and enhancement of existing habitat. This will result in a long-term probable Minor Beneficial effect significant at Site Level.
- 8.3 No bat roost has been identified in the mounted bat box on T1 during the 2021 inspection. Measures to reduce the indirect impacts of the development on bats have been provided in this report. A suite of mitigation measures are proposed that will result in an uncertain Minor Beneficial indirect effect significant at the Neighbourhood Level
- 8.4 No GCN or reptiles have been identified within habitats in the Site during the 2021 surveys for either species. The Site is not of any Importance for both species and as such there will be no impacts of the development on these species.
- 8.5 No dormouse have been confirmed present in the Site during the 2021 surveys, however a population of dormice is known to be present in the adjacent residential development and the on-site habitats connect directly to the dormouse habitat in the adjacent development therefore the Site is considered to be of Neighbourhood Importance to the local dormouse population. No EPSM licence is required to permit this project however a Mitigation Strategy will, if implemented, result in an uncertain Minor Beneficial direct effect significant at Neighbourhood Level.
- 8.6 Other ecological enhancements to enhance the development for biodiversity in general have also been detailed within this report including the production of a Biodiversity Net Gain assessment (to include a Biodiversity Metric) and installation of habitat features.

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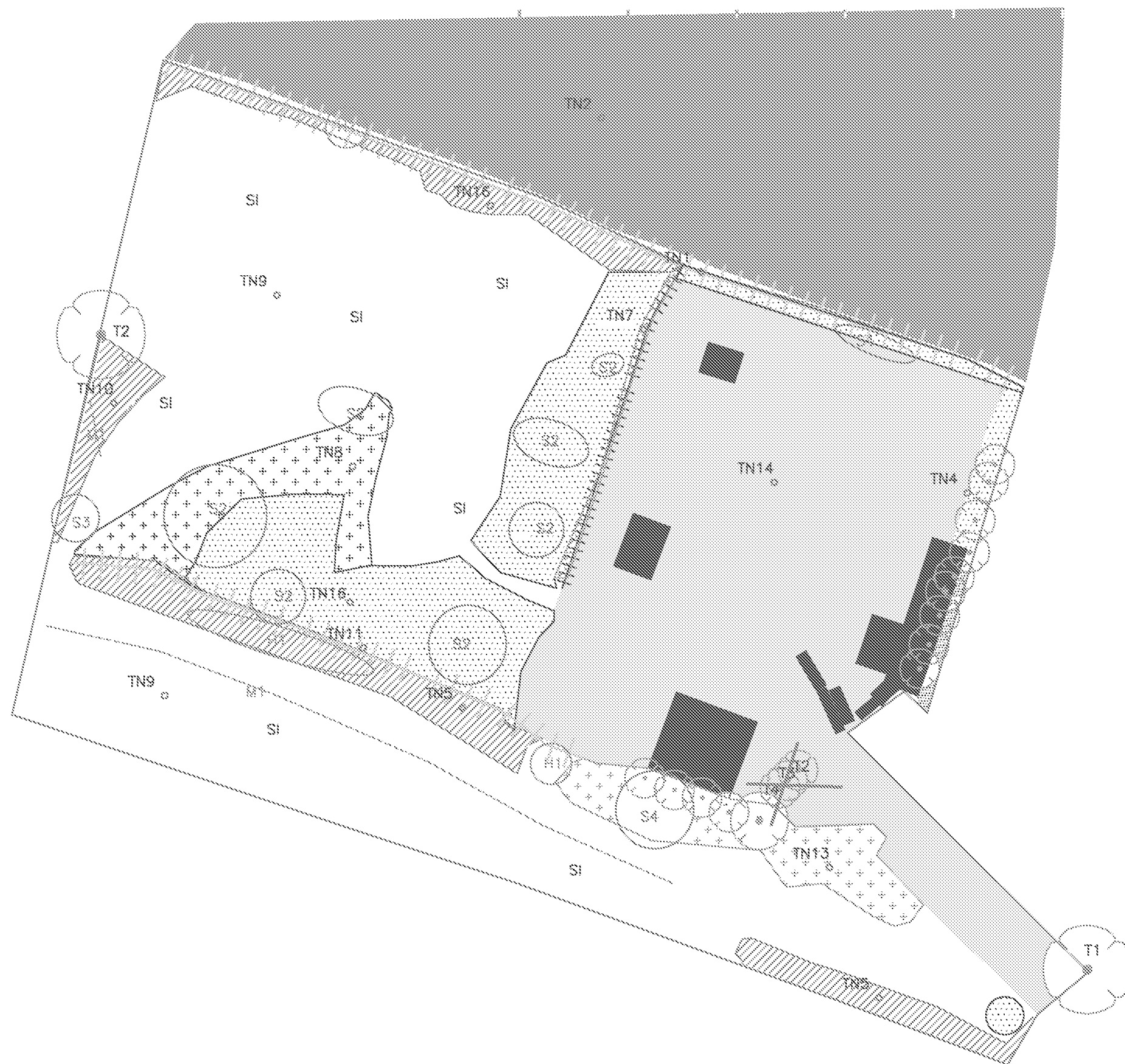
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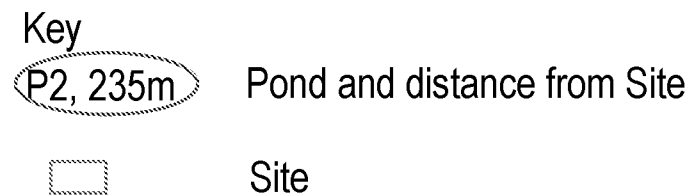
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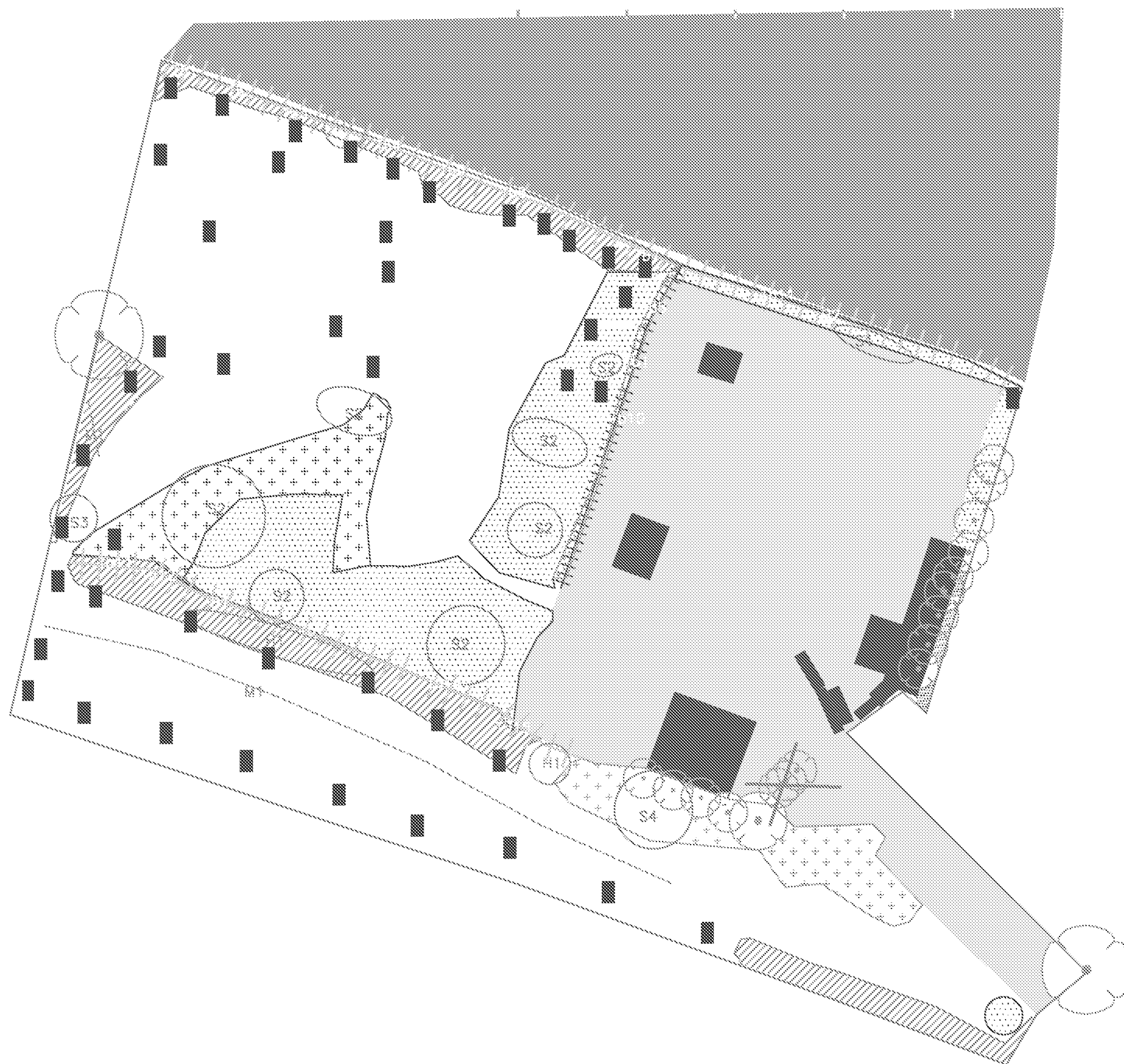
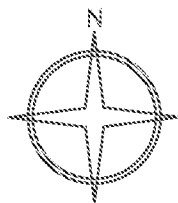


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| revision                                                                                                                                                                                                                                                                                | description |                      |                                                                                       | date    | checked |
| <p>Corylus Ecology Ltd, Unit A3, Speldhurst Business Park, Went Farm, Langton Road, Speldhurst, Kent TN3 0NR</p> <p>Corylus Ecology is the trading name of Corylus Ecology Ltd registered in England, No 800565, Registered Office: Hemwood House, Hemwood, Ashford, Kent. TN26 6PQ</p> |             |                      |  |         |         |
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| Project: 20142 SRC Recycling Centre                                                                                                                                                                                                                                                     |             |                      |                                                                                       |         |         |
| Title: Phase 1 Habitat Survey Plan                                                                                                                                                                                                                                                      |             |                      |                                                                                       |         |         |
| status                                                                                                                                                                                                                                                                                  |             | drawing no. Figure 1 |                                                                                       |         |         |
| scale                                                                                                                                                                                                                                                                                   | size        | date                 | drawn                                                                                 | checked | BW      |
| NTS                                                                                                                                                                                                                                                                                     | A3          | 13.12.2021           | LR                                                                                    |         |         |
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Figure 2. Pond Map



OS Licence Number: 100050443



#### Key

- Site Survey Area
- Tree
- Broad-leaved Woodland
- Scattered Scrub
- Semi-improved Grassland
- Tall Ruderal
- Spoil
- Ephemeral Grassland
- Species Poor Hedge with Trees
- Fence
- Building
- Hard Standing
- Bare Ground
- Mammal Hole
- Reptile Felt
- Dormouse Tube
- Dormouse Box

| revision | description | date | checked by |
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Project: 20142 SRC Recycling Centre

Title: Dormouse and Reptile Survey Plan

Status: drawing no: Figure 3

| scale | size | date       | drawn | checked |
|-------|------|------------|-------|---------|
| NTS   | A3   | 13.12.2021 | LR    | BW      |

CAD filename: Figure\_1.dwg

Figure 4. Pond P2 and P9 Photos



Pond P2



Pond P9

Figure 5. Landscape Strategy Plan



GENERAL NOTES:  
1. Do not scale from this drawing.  
2. Drawing is for the intended purpose as stated in the status box of the title block.  
3. HCUK accept no liability arising from any variation to this drawing without prior approval obtained.  
4. Check all dimensions on site.  
5. Report any discrepancies and omissions to HCUK Ltd.  
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7. To be read in conjunction with HCUK Landscape Specification dwg 6369-02.

Landscape Strategy

Design Principles and Objectives

- To reinforce existing trees and hedges to the site boundaries with native vegetation, to integrate the site with the wider rural setting and landscape character and reinforce the screening to neighbouring properties
- To create a network of multifunctional green space through the development that provides for sustainable drainage, play and informal recreation
- To create well-defined character areas within the development through the creation of shared streets, enhancing views onto POS and using hedges and signature tree species to create a strong green framework to streets
- To create POS and public realm of varying character
- To include wildlife attracting plant species within ornamental plant mixes to contribute to biodiversity.

Proposals

Planted SUDs waterbody enhances the main access into the Site. A natural play area is created within the setting of existing retained trees and a newly created meadow. The edge of the waterbody is clearly defined by planting and is designed with gentle gradients and shallow edges.

Central green space with a formal LEAP play area (layout is indicative and subject to detailed design). Grass safety surface to retain the green setting. Picnic benches and litter bins to be provided. Existing retained native hedge on the southern side to be managed to remove deadwood and pruned and to be supplemented with a new dense native hedgerow to provide a tidy easily maintained edge. Planting will clearly define the edge of the swale on the north side and the gradients will be gently sloping to provide a safe margin. Large native parkland trees enhance vistas into the green space.

Green corridor through the shared street enhancing the vista towards the large retained oak tree on the western boundary. A quite reflective space for informal recreation, with carved log seating and shadey meadow/ woodland perennial planting under the tree and to the margins.

Easement - no tree planting. Grass, meadow, bulbs and low ornamental planting.

North Boundary - adjacent hedge H12  
To be supplemented with native shrub planting on the south side and reinforce by gapping up within the hedgeline where necessary.

North boundary - adjacent H15  
To be supplemented with native shrub planting on the south side and reinforce by gapping up within the hedgeline where necessary.

East boundary - along retained hedgeline H16  
Cypress hedge retained and supplemented with native shrub planting, including holly to provide evergreen screening.

North boundary (east section)  
Existing poor quality heavily pruned trees and gappy cypress hedges (Hedges H6 and H4 and tree group G5) to be removed and replaced with a hedgerow and small native hedgerow trees of edible species, to provide informal foraging opportunities for residents (nuts, berrying and fruiting species). To provide a good quality boundary treatment appropriate to the wider rural setting.

Southern boundary - native hedgerow and tree planting for softening of views and to enhance landscape character and biodiversity.

Western boundary - existing large oak and hawthorn group retained. Native hedgerow planting, supplemented with native shrubs and native tree planting for the softening/ screening of views, to enhance landscape character and biodiversity.

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

| Revision | Description          | Date     | By | Chk. |
|----------|----------------------|----------|----|------|
| -        | First issue          | 23/9/21  | CB | SH   |
| A        | Update site plan     | 14/10/21 | CB | SH   |
| B        | Updated baseplan     | 21/11/21 | CB | SH   |
| C        | Meadow areas updated | 2/12/21  | CB | SH   |



Client:  
**SRC Recycling Limited**  
Project:  
**Land at SRC Recycling, Eastergate**  
Description:  
**Landscape Strategy**

Status:  
**FOR PLANNING**  
Scale:  
**1:500 @A1**  
Job Number:  
**6369**  
Drawn I Checked  
**CB SH**  
Drawing Number:  
**01**  
Date:  
**02/12/2021**  
Revision:  
**C**

W: [www.hcukgroup.co.uk](http://www.hcukgroup.co.uk)

## Appendix 1 – Ecological Impact Assessment Criteria

The general approach follows the Guidelines for Ecological Impact Assessment in the UK and Ireland ("EclA") produced by the Chartered Institute of Ecology and Environmental Management ("CIEEM"). These guidelines are web based and subject to review and updating. This ES is based on the guidelines available in February 2021. The guidance covers all stages of EclA, including both evaluation and impact criteria. The criteria followed is summarised below:

### Significance Criteria

The CIEEM EclA guidance covers all stages of EclA, including both evaluation and impact criteria. These guidelines set out that the emphasis in EclA is on significant effects rather than all ecological effects. A significant effect being an effect that

- *"Either supports or undermines biodiversity objectives for important ecological features or for biodiversity in general.*
- *"Effects can be considered significant at a wide range of scales from international to local".*
- *"A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project."*

The main criteria used to assess the ecological value of habitats and communities are those described by Ratcliffe (1977) and the selection criteria for SSSIs produced by the Nature Conservancy Council (1989). The primary criteria include rarity, typicalness, size, diversity, naturalness and fragility. Subsidiary criteria include ecological position, intrinsic appeal, potential value, and recorded history. The designation of SSSIs is not an all-inclusive list of sites which fall within the set criteria, rather the SSSI are designated as good examples of the better habitats within the region or nationally. Therefore, certain undesignated areas may fall within the criteria for being designated. Within individual counties there are often criteria for the selection of sites of County Importance within that specific County.

Further criteria used for assessing the ecological importance of a site may be based upon their value for particular species or assemblages of species. In addition to the individual species and groups the overall species and habitat assemblage or biodiversity is evaluated. Examples of valuation criteria related to a range of spatial scales are set out in Table A1.

Biodiversity has been given a number of definitions but, insofar as it relates to EIA, it is generally considered as including both structural relationships (spatial linkage, fragmentation, aspect, dispersion etc.) and functional relationships (nutrient cycling rates, energy flow rates, metapopulation dynamics, etc.).

Table A1: Assessment of the Value of Ecological Resource

| Value                                                  | Examples of Valuation Criteria                                                                                                                                                                                                                                                  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>International</i>                                   | An internationally designated site or candidate site (SPA, SAC, etc);                                                                                                                                                                                                           |
| <i>National</i>                                        | A nationally designated site (SSSIs, National Nature Reserves (NNRs);<br>Species or habitats which fulfil the JNCC SSSI selection criteria,                                                                                                                                     |
| <i>Regional</i>                                        | Viable areas of key habitat identified in the regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole;<br>Sites which exceed the County-level designations but fall short of SSSI selection guidelines where these occur; |
| <i>County</i>                                          | County sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation including Local Nature Reserves (LNR) selected on County criteria;                                                                 |
| <i>Local (including District)</i>                      | Areas of habitat identified as being of Local Value in the relevant Natural Area profile;<br>LNR not selected on County criteria;                                                                                                                                               |
| <i>Parish/ Neighbourhood</i>                           | Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or Neighbourhood e.g. species-rich hedgerows;                                                                                                                           |
| <i>Within the zone of influence or Site Importance</i> | This may be the project site or a larger area;                                                                                                                                                                                                                                  |
| <i>Negligible</i>                                      | Sites or areas which support few or no habitats, communities or species populations of nature conservation interest. Typical of such areas are most intensively managed silage fields and arable crops.                                                                         |

### Assessment of Effects

Activities which may affect the ecological resource need to be identified first. The associated changes and the implications for the ecological resource then need to be assessed. The following factors must be considered when assessing the effects:

- Confidence in predictions;
- Magnitude of effect;
- Extent of effect;
- Duration;
- Reversibility; and
- Timing and frequency.

A level of confidence is required in assessing effects, the standard for which is given below. The requirement for the lowest confidence level, given below as “extremely unlikely”, is for those effects which, although considered as extremely unlikely to occur, would have very serious consequences and would merit contingency planning.

- Certain/near certain;
- Probable;
- Unlikely; and
- Extremely unlikely.

Table A2 lists the broad categories used to assist in identifying the nature and types of different ecological effects. In addition to individual effects on the ecological resource being identified and evaluated, the cumulative effect of two or more effects on the resource is also evaluated using the same terminology.

Table A2: Categories of Ecological Effects (based on Treweek 1999)

| Category           | Example                                                                                                                                                                                            |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Direct Effects     | <ul style="list-style-type: none"> <li>• habitat loss or destruction (for example, through construction work);</li> <li>• habitat fragmentation / severance; and</li> <li>• disturbance</li> </ul> |
| Indirect Effects   | <ul style="list-style-type: none"> <li>• reduced population viability (for example, due to decrease in habitat area etc.); and</li> <li>• habitat isolation</li> </ul>                             |
| Associated Effects | <ul style="list-style-type: none"> <li>• ecological effects caused by actions linked with the Proposed Development</li> </ul>                                                                      |
| Cumulative Effects | <ul style="list-style-type: none"> <li>• overall reduction in habitat diversity; and</li> <li>• ongoing habitat loss or fragmentation</li> </ul>                                                   |

The magnitude or physical extent of predicted effects upon an ecological feature is presented, wherever possible, in quantifiable terms. For example, the area of land taken, percentage of habitat lost or the number of communities, species or individuals affected. Magnitude also considers the context of the feature affected within the categories of relative importance described above. For example, if there is an internationally designated site, the significance of predicted effects are assessed within an international context with reference to the relevant legislation.

The potential effects of development schemes on nature conservation can be either beneficial or adverse. Negligible effects are also recognised.

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In the CIEEM guidance an ecologically significant effect is defined as an effect on the integrity of a defined site or ecosystem and/or conservation status of habitats or species within a given geographical area. The value of any feature that will be significantly affected is then used to identify the geographical scale at which the effect is significant. This value therefore relates directly to the consequences in terms of legislation, policy or development control at the appropriate level. Significant effects on features of ecological importance should be mitigated (or compensated for) in accordance with guidance derived from policies applied at the scale relevant to the value of the feature or resource. Any significant effects remaining after mitigation (the residual effects), together with an assessment of the likelihood of success in mitigation are the factors to be considered against legislation, policy and development control in determining the application.

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## **Appendix 2 – Farmland Manual Survey Methodology and Hedgerow Survey Guidelines**

### *Grassland Survey Methodology - Farmland Environmental Plan*

The Farmland Environmental Plan (FEP) manual method involves carrying out a series of ten 1m x 1m quadrats across the grassland recording the presence of all species within each quadrat. The key provided within the FEP was then used to determine the grassland type (see appendix 6) (Natural England, March 2010).

### *Hedgerows Regulations Assessment*

A hedgerow is defined as a row of bushes that may or may not contain trees. Some hedgerows ('Important Hedgerows') are protected by law under the Hedgerows Regulations 1997 and it is illegal to remove them without permission. The protection system applies to all hedgerows that are 20m or more in length, or which meet another hedgerow at each end, other than garden hedgerows which are exempt from the Hedgerows Regulations 1997. A further exemption is applied where a former hedgerow has ceased to be actively managed and has grown into a line of trees, and so would no longer be covered by the Regulations. Only the ecological criteria for the Hedgerows Regulations have been assessed Defra (2007).

### Appendix 3 – Habitat Suitability Index Assessment Methodology

A Habitat Suitability Index (HSI) assessment is a simple field and desk based assessment of water bodies for their potential to support GCN (Arg 2010). It involves examining ten factors which are thought to affect GCN and include:

- Location (in Britain);
- Pond area;
- Desiccation rate (years out of ten that pond dries);
- Water quality (subjective assessment);
- Percentage of pond shaded;
- Number of waterfowl;
- Fish population (subjective assessment);
- Number of ponds within 1km;
- Terrestrial habitat quality; and
- Percentage macrophyte cover.

Each factor is given a numerical score and is entered into a weighted calculation to ascertain a single value, the HSI, which is a value between 0.00 and 1. The resulting value is then compared to a categorical scale, to establish the potential for encountering great crested newts:

| HSI Score  |               |
|------------|---------------|
| <0.5       | Poor          |
| 0.5 – 0.59 | Below Average |
| 0.6 – 0.69 | Average       |
| 0.7 – 0.79 | Good          |
| >0.8       | Excellent     |

## Appendix 4 – Reptile Methodology and Evaluation Criteria

The Herpetofauna Groups of Britain and Ireland (HGBI) guidance suggests that optimum conditions are in temperatures between 9°C and 18°C, in absence of wind and rain, and, depending on conditions, between the hours of 08:30 and 11:00 hours or 16:00 and 18:30. Peak counts of reptiles can often occur outside those times mentioned above, in particular immediately after rain. The surveys were therefore timed to utilise the best available weather conditions.

Guidance from Froglife, advises that in relation to time of year, *“Reptiles are generally active from March to October, but the most profitable months for surveying tend to be April, May and September. The exact timing however will depend on temperature, rainfall and other climatic patterns.”* Froglife advise further in relation to time of day: *“For the best months indicated above, the best times to search are generally between 8.30am and 11.00am, and between 4.00pm and 6.30pm.”* Other productive times to check are overcast conditions with hazy sunshine, especially when weather conditions are warmer and during sunny conditions after rain. In this regard, further information regarding the time and conditions of each visit to check the heat traps were recorded.

### *Reptile Evaluation Methodology*

The criteria for designating Local Wildlife sites, these consisting of sites of importance on a county level, (previously known as SINCs), include criteria for their selection on the basis of their reptile populations. These criteria follow the guidelines established by Froglife in identifying Key Reptile Sites, a scoring system provided in Table A4.

The scoring system is based upon the maximum number of adult animals, that is all animals recorded excluding hatchlings / juveniles, seen under artificial refugia (placed at a density of a minimum of 10 per hectare) or by general observation by one person, in one day.

Table A4 – Evaluation of Reptile Population Status Based on Counts and Score Given

| Species       | Low Population Score 1 | Good Population Score 2 | Exceptional Population Score 3 |
|---------------|------------------------|-------------------------|--------------------------------|
| Adder         | <5                     | 5-10                    | >10                            |
| Grass Snake   | <5                     | 5-10                    | >10                            |
| Common Lizard | <5                     | 5-20                    | >20                            |
| Slow Worm     | <5                     | 5-20                    | >20                            |

A Key Reptile Site is identified when a site meets any of the following thresholds:

- Supports three or more reptile species; or
- Supports two snake species; or
- Supports an exceptional population of any one species; or

- Supports an assemblage of species scoring  $\geq 4$  points using the above system; or,
- Supports a population of adder scoring  $>1$ .

Any other species noted under the refugia were also recorded, principally any amphibian species in terrestrial phase.

## Appendix 5 – Dormouse Survey Methodology and Evaluation Criteria

### *Survey Methodology*

Where a tube could be seen to be empty, no further check was made. Where the inside of the tube could not be easily seen, a material 'stuffer' was used to block the entrance and the end of the tube was then pushed back to inspect it for evidence of nesting material or an animal. If nesting material or leaves were found inside, the tube was taken out of the vegetation and placed into a large plastic bag for a detailed check. The holes in the rear of the boxes were stuffed each time before sliding the lid slightly to the side to look inside. If nesting material was seen, the box was removed from the tree and placed in a large bag for inspection (English Nature, 2006).

Each survey was carried out in suitable, dry weather conditions and completed within one day to ensure no animals found were double counted. The biometric data of any captured dormice or other mammal species, such as wood mouse *Apodemus sylvaticus* and yellow-necked mouse *Apodemus flavicollis*, were taken; animals were weighed using small plastic bags and 50g pesola balances. Any birds' nests were also noted.

### *Index of probability*

The Dormouse Conservation Handbook provides an index of probability for the presence, or otherwise, of dormice based on a minimum level of survey effort. A scoring system has been devised in which each month during the active period is given a score; a minimum score of 20 points needs to be reached in order to show reasonable survey effort has been made. The scores for the index of probability are shown below in Table A5 (English Nature 2006):

Table A5 – Index of probability

| Month     | Index of probability |
|-----------|----------------------|
| April     | 1                    |
| May       | 4                    |
| June      | 2                    |
| July      | 2                    |
| August    | 5                    |
| September | 7                    |
| October   | 2                    |
| November  | 2                    |

Using fifty nest tubes or boxes as standard, and the index of probability table as a value for different months of surveying, a score can be devised as a guide to the thoroughness of a survey, with the aim of achieving 20 points (Chanin and Woods, 2003). Under this methodology, fifty tubes or boxes set out for a whole survey season would score 25 points (the sum of the indices for all 8 months), but 25 tubes left out during only April and May would score 2.5 (1+4, divided by 2 because only half as many tubes were installed). Although half of the total score is taken away when using half the standardised fifty tubes, the scoring cannot be 'doubled up' if 100 tubes are used.

# Appendix 6.

|                                                     |           |                                 |                 |
|-----------------------------------------------------|-----------|---------------------------------|-----------------|
| <b>Farm Environment Plan (FEP) grassland survey</b> |           | Site name: SRC Recycling Centre | Date: 14/7/2021 |
| Field parcel/s:                                     | Grassland | Other relevant info:            |                 |

This form is designed to help follow the FEP key 2a (overleaf) to identify species-rich, semi-improved and improved grassland. It is useful to identify grassland type on site, then use the biodiversity metric condition assessment (overleaf) to determine condition. For species-rich grassland a more detailed condition assessment may be needed (in the FEP handbook, different questions need answering depending on the grassland type, which may require collection of additional information per quadrat and overall).

| <b>Section 1 – Percentage cover of rye-grasses and white clover</b> (other undesirable species are recorded as presence only in section 2) |    |    |    |    |    |    |    |    |    |    |       |           |
|--------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|----|----|----|-------|-----------|
| Quadrat number                                                                                                                             | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | Total | Average % |
| e.g. White clover                                                                                                                          | 20 | 15 | 30 | 15 | 25 | 40 | 10 | 5  | 20 | 5  | 185   | 18.5      |
| Perennial rye-grass                                                                                                                        | 50 | 50 | 40 | 5  | 30 | 90 | 30 | 90 | 0  | 90 | 475   | 47.5      |
| Italian rye-grass                                                                                                                          |    |    |    |    |    |    |    |    |    |    |       |           |
| Other rye-grasses                                                                                                                          |    |    |    |    |    |    |    |    |    |    |       |           |
| White clover                                                                                                                               | 2  | 2  | 0  | 0  | 2  | 0  | 20 | 0  | 5  | 10 | 41    | 4.1       |
| Total % cover of rye-grasses and white clover (use answer for question 1 in summary table at bottom of page)                               |    |    |    |    |    |    |    |    |    |    | 516   | 51.6      |
| Undesirables*                                                                                                                              | 5  | 30 | 10 | 10 | 30 | 10 | 40 | 10 | 40 | 0  | 185   | 18.5      |

\* total % cover of creeping thistle, spear thistle, curled dock, broad-leaved dock, common ragwort and common nettle.

| <b>Section 2 – Presence of other species in each quadrat</b> (including grasses and other undesirable species/injurious weeds, recorded as presence only) |   |    |    |    |   |   |   |   |   |    |       |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|----|----|---|---|---|---|---|----|-------|-------------|
| Quadrat number                                                                                                                                            | 1 | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | Total | F, O or R** |
| Creeping thistle                                                                                                                                          |   |    |    |    |   |   | ✓ |   | ✓ |    | 2     | R           |
| Spear thistle                                                                                                                                             |   |    |    |    |   |   |   |   |   |    |       |             |
| Curled dock                                                                                                                                               |   |    |    |    |   |   |   |   |   |    |       |             |
| Broad-leaved dock                                                                                                                                         |   |    |    |    |   |   |   |   |   |    |       |             |
| Common nettle                                                                                                                                             |   |    |    |    |   |   |   |   |   |    |       |             |
| Creeping buttercup                                                                                                                                        |   | ✓  |    | ✓  | ✓ |   |   |   | ✓ |    | 4     | O           |
| Cock's foot                                                                                                                                               | ✓ |    | ✓  |    | ✓ |   | ✓ |   |   |    | 4     | O           |
| Creeping bent                                                                                                                                             | ✓ | ✓  | ✓  |    |   | ✓ |   | ✓ |   |    | 5     | F           |
| Rough meadow grass                                                                                                                                        | ✓ | ✓  | ✓  | ✓  |   | ✓ |   | ✓ |   | ✓  | 7     | F           |
| Greater plantain                                                                                                                                          | ✓ |    |    |    | ✓ | ✓ |   |   | ✓ |    | 4     | O           |
| Yorkshire-fog                                                                                                                                             | ✓ |    | ✓  | ✓  |   | ✓ | ✓ |   | ✓ |    | 6     | F           |
| Smooth hawk's beard                                                                                                                                       | ✓ |    |    | ✓  |   |   |   |   |   |    | 2     | R           |
| False-oat grass                                                                                                                                           |   | ✓  | ✓  | ✓  |   |   | ✓ |   | ✓ |    | 5     | F           |
| White campion                                                                                                                                             |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Prickly sow-thistle                                                                                                                                       |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Dove's-foot crane's-bill                                                                                                                                  |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Hoary willowherb                                                                                                                                          |   |    |    |    |   |   |   |   | ✓ |    | 1     | R           |
| Hairy bittercress                                                                                                                                         |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Forget-me-not                                                                                                                                             |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Lesser stitchwort                                                                                                                                         |   |    | ✓  | ✓  | ✓ |   |   |   |   |    | 3     | O           |
| Fumitory                                                                                                                                                  |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Bird's-foot trefoil                                                                                                                                       |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Black medick                                                                                                                                              |   | ✓  |    |    |   |   |   |   |   |    | 1     | R           |
| Hedge bedstraw                                                                                                                                            |   |    | ✓  |    |   |   |   |   |   |    | 1     | R           |
| Mouse-ear chickweed                                                                                                                                       |   | ✓  | ✓  |    |   |   |   |   |   |    | 2     | R           |
| Field bindweed                                                                                                                                            |   |    | ✓  |    |   |   |   | ✓ |   |    | 2     | R           |
| Hogweed                                                                                                                                                   |   |    |    | ✓  | ✓ |   | ✓ |   |   |    | 3     | O           |
| Common stork's-bill                                                                                                                                       |   |    | ✓  |    |   |   | ✓ |   |   |    | 2     | R           |
| Common vetch                                                                                                                                              |   |    |    | ✓  |   |   |   | ✓ |   |    | 2     | R           |
| Ground-ivy                                                                                                                                                |   |    |    | ✓  |   |   |   |   |   |    | 1     | R           |
| Scentless mayweed                                                                                                                                         |   |    |    |    | ✓ |   |   |   |   |    | 1     | R           |
| Total no. of species***                                                                                                                                   | 8 | 15 | 11 | 10 | 8 | 5 | 8 | 5 | 7 | 3  | Total | Average no. |
| Average number of species per m <sup>2</sup> including grasses (use answer for question 2 in summary table at bottom of page)                             |   |    |    |    |   |   |   |   |   |    | 80    | 8           |

\*\* frequent (F) = 5 or more; occasional (O) = 3 or 4; rare (R) = 1 or 2. \*\*\*Count total number of species per quadrat, including all species listed in Sections 1 & 2 above.

| <b>Section 3 – Total percentage cover of grasses vs herbs/sedges or bare ground per quadrat</b> |    |    |    |    |    |    |    |     |     |    |       |           |
|-------------------------------------------------------------------------------------------------|----|----|----|----|----|----|----|-----|-----|----|-------|-----------|
| Quadrat number                                                                                  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8   | 9   | 10 | Total | Average % |
| Total % cover of grasses                                                                        | 95 | 70 | 50 | 70 | 60 | 95 | 95 | 95  | 95  | 95 | 820   | 82        |
| Total % cover of herbs****                                                                      | 5  | 30 | 50 | 30 | 40 | 5  | 5  | <5% | <5% | 1  | 176   | 17.6      |
| Total % of bare ground                                                                          | 0  | 5  | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0  | 5     | 0.5       |

\*\*\*\* including sedges but excluding undesirable species (white clover, creeping buttercup, creeping thistle, spear thistle, curled dock, broad-leaved dock, common ragwort and common nettle). Use answer for question 3 in table below.

| Summary questions to identify grassland type |                                                 | Species-rich |  | Semi-improved |   | Improved |   |
|----------------------------------------------|-------------------------------------------------|--------------|--|---------------|---|----------|---|
| Tick one option for each question            | 1. Cover of rye-grasses and white clover        | < 10%        |  | < 30%         |   | > 30%    | ✓ |
|                                              | 2. Average number of species per m <sup>2</sup> | > 15         |  | 9-15          |   | ≤ 8      | ✓ |
|                                              | 3. Cover of broadleaved herbs and sedges        | > 30%        |  | ≥ 10%         | ✓ | ≤ 10%    |   |

**Grassland type (circle one, based on answering 2 questions for 1 grassland type above) =** species-rich   semi-improved   improved

# Appendix 7 – Complete Reptile Survey Results

| Visit no | Date       | Species       | Common lizard | Slow worm | Grass Snake | Adder | Weather conditions |       |
|----------|------------|---------------|---------------|-----------|-------------|-------|--------------------|-------|
| 1        | 29/04/2021 | Male          |               |           |             |       | Time               | 10:20 |
|          |            | Female        |               |           |             |       | Temperature °C     | 12    |
|          |            | Adult Unknown |               |           |             |       | Cloud cover %      | 50    |
|          |            | Sub           |               |           |             |       | Rain               | Dry   |
|          |            | Juv           |               |           |             |       | Wind               | BS2   |
|          |            | TOTAL         | 0             | 0         | 0           | 0     |                    |       |
|          |            | PEAK          | 0             | 0         | 0           | 0     |                    |       |
| 2        | 05/05/2021 | Male          |               |           |             |       | Time               | 10:30 |
|          |            | Female        |               |           |             |       | Temperature °C     | 11    |
|          |            | Adult Unknown |               |           |             |       | Cloud cover %      | 60    |
|          |            | Sub           |               |           |             |       | Rain               | Dry   |
|          |            | Juv           |               |           |             |       | Wind               | BS2   |
|          |            | TOTAL         | 0             | 0         | 0           | 0     |                    |       |
|          |            | PEAK          | 0             | 0         | 0           | 0     |                    |       |
| 3        | 20/05/2021 | Male          |               |           |             |       | Time               | 11:30 |
|          |            | Female        |               |           |             |       | Temperature °C     | 14    |
|          |            | Adult Unknown |               |           |             |       | Cloud cover %      | 100   |
|          |            | Sub           |               |           |             |       | Rain               | Dry   |
|          |            | Juv           |               |           |             |       | Wind               | BS3   |
|          |            | TOTAL         | 0             | 0         | 0           | 0     |                    |       |
|          |            | PEAK          | 0             | 0         | 0           | 0     |                    |       |
| 4        | 27/05/2021 | Male          |               |           |             |       | Time               | 09:45 |
|          |            | Female        |               |           |             |       | Temperature °C     | 16    |
|          |            | Adult Unknown |               |           |             |       | Cloud cover %      | 10    |
|          |            | Sub           |               |           |             |       | Rain               | Dry   |
|          |            | Juv           |               |           |             |       | Wind               | BS1   |
|          |            | TOTAL         | 0             | 0         | 0           | 0     |                    |       |
|          |            | PEAK          | 0             | 0         | 0           | 0     |                    |       |
| 5        |            | Male          |               |           |             |       | Time               | 11:15 |
|          |            | Female        |               |           |             |       | Temperature °C     | 18    |
|          |            | Adult         | 0             |           |             |       | Cloud cover        | 100%  |

|   |            |               |   |   |   |   |                |       |
|---|------------|---------------|---|---|---|---|----------------|-------|
|   | 13/09/2021 | Unknown       |   |   |   |   | %              |       |
|   |            | Sub           |   |   |   |   | Rain           | Dry   |
|   |            | Juv           |   |   |   |   | Wind           | BS1   |
|   |            | TOTAL         | 0 | 0 | 0 | 0 |                |       |
|   |            | PEAK          | 0 | 0 | 0 | 0 |                |       |
| 6 | 15/09/2021 | Male          |   |   |   |   | Time           | 09:45 |
|   |            | Female        |   |   |   |   | Temperature °C | 17    |
|   |            | Adult Unknown |   |   |   |   | Cloud cover %  | 90-25 |
|   |            | Sub           |   |   |   |   | Rain           | Dry   |
|   |            | Juv           |   |   |   |   | Wind           | BS2   |
|   |            | TOTAL         | 0 | 0 | 0 | 0 |                |       |
|   |            | PEAK          | 0 | 0 | 0 | 0 |                |       |
| 7 | 28/09/2021 | Male          |   |   |   |   | Time           | 11:15 |
|   |            | Female        |   |   |   |   | Temperature    | 16    |
|   |            | Adult Unknown |   |   |   |   | Cloud cover %  | 75    |
|   |            | Sub           |   |   |   |   | Rain           | Dry   |
|   |            | Juv           |   |   |   |   | Wind           | BS4   |
|   |            | TOTAL         | 0 | 0 | 0 | 0 |                |       |
|   |            | PEAK          | 0 | 0 | 0 | 0 |                |       |

## Appendix 8 – Complete Dormouse Survey Results

Table A6: Complete Dormouse Results, SRC Recycling 2021

| Tubes / Boxes | Date       |            |            |            |            |            |
|---------------|------------|------------|------------|------------|------------|------------|
|               | 29.04.2021 | 20.05.2021 | 30.06.2021 | 14.07.2021 | 24.08.2021 | 28.09.2021 |
| T1            |            |            |            |            |            |            |
| T2            |            |            |            |            |            |            |
| T3            |            |            |            |            |            |            |
| T4            |            |            |            |            |            |            |
| T5            |            |            |            |            |            | *          |
| T6            |            |            |            |            |            |            |
| T7            |            |            |            |            |            |            |
| T8            |            |            |            |            |            |            |
| T9            |            |            |            |            |            |            |
| T10           |            |            |            |            |            |            |
| T11           |            |            |            |            |            |            |
| T12           |            |            |            |            |            |            |
| T13           |            |            |            |            |            |            |
| T14           |            |            |            |            |            |            |
| T15           |            |            |            |            |            |            |
| B1            |            |            |            |            |            |            |
| B2            |            |            |            |            |            |            |

\* Beginnings of wood mouse nest recorded in T5 on last survey.

Table A7: Complete Dormouse Weather Results

| Date       | Temperature (°C) | Wind | Rain | Cloud |
|------------|------------------|------|------|-------|
| 29.04.2021 | 12               | BS2  | 0    | 50%   |
| 20.05.2021 | 14               | BS3  | 0    | 100%  |
| 30.06.2021 | 17               | BS2  | 0    | 80%   |
| 14.07.2021 | 17               | BS2  | 0    | 10%   |
| 24.08.2021 | 18               | BS2  | 0    | 5%    |
| 28.09.2021 | 16               | BS4  | 0    | 75%   |

## Appendix 9 – Bat Legislation

All British bat species receive legal protection in the United Kingdom. The Wildlife and Countryside Act 1981 (WCA) (as amended) transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The 1981 Act was recently amended by the Countryside and Rights of Way (CROW) Act 2000 and the more recent Habitats Regulations amendments (2017). All British bat species are listed under Schedule 5 of the 1981 Act, and is therefore subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure or take a bat [Section 9(1)];
- Possess or control any live or dead specimen or anything derived from a bat [Section 9(2)]
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection [Section 9(4)(b)];
- Intentionally or recklessly obstructs access to any structure or place which a bat uses for shelter or protection [Section 9(4)(c)]
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisements to buy or sell a bat [section 9(5)]

Bats are also included on Annex IV of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the Habitats Directive). As a result of the UK ratifying this directive, all British bats are protected under The Conservation of Habitats and Species Regulations 2017 (The Conservation Regulations). Annex IV of the Habitats Directive requires member states to construct a system of protection as outlined in Article 12, this is done through Part 3 of the Regulations whereby Regulation 41 makes it an offence to:

- Deliberately capture, kill or injure a bat [Regulation 41(1)(a)];
- Deliberately disturb bats in such a way as to be likely to significantly affect i) the ability of any significant group of animals of that species to survive, breed or rear or nurture their young, OR  
ii) the local distribution of that species. [Regulation 41(1)(b) and 41(2)];
- Damage or destroy a breeding site or resting place of a bat [Regulation 41(1)(d)].

Under the law, a roost is any structure or place used for shelter or protection. This could be any structure, for example, any building or mature tree. Bats use many roost sites and feeding areas throughout the year. These vary according to bat age, condition, gender and species, as well as season and weather. Since bats tend to re-use the same roosts for generations, the roost is protected whether the bats are present or not.

In addition, four species, the two horseshoes, barbastelle and Bechstein's are included within Annex II of the Habitats Directive for which Member States are required to designate Special Areas for Conservation (SAC's) for their protection.

The UK is a signatory to the Agreement on the Conservation of Bats in Europe, established under the Bonn Convention. The Fundamental Obligations of Article III of this Agreement require the protection of all bats and their habitats, including the identification and protection from damage or disturbance of important feeding areas for bats.

## Appendix 10 - Dormouse Legislation

Dormice receive the same level of protection as bats and great crested newts in the United Kingdom. The Wildlife and Countryside Act 1981 (WCA) (as amended) transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The 1981 Act was recently amended by the Countryside and Rights of Way (CROW) Act 2000 and the more recent Habitats Regulations amendments (2017). Dormice are listed under Schedule 5 of the 1981 Act, and is therefore subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure or take a dormouse [Section 9(1)];
- Possess or control any live or dead specimen or anything derived from a dormouse [Section 9(2)]
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for shelter or protection [Section 9(4)(b)];
- Intentionally or recklessly obstructs access to any structure or place which a dormouse uses for shelter or protection [Section 9(4)(c)]; and
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisements to buy or sell a dormouse [section 9(5)].

Dormice are also included on Annex IV of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the Habitats Directive). As a result of the UK ratifying this directive, dormice are protected under The Conservation of Habitats and Species Regulations 2017 (The Conservation Regulations). Annex IV of the Habitats Directive requires member states to construct a system of protection as outlined in Article 12, this is done through Part 3 of the Regulations whereby Regulation 41 makes it an offence to:

- Deliberately capture or kill a dormouse [Regulation 39(1)(a)];
- Deliberately disturb a dormouse in such a way as to be likely to significantly affect i) the ability of any significant group of animals of that species to survive, breed or rear or nurture their young, OR ii) the local distribution of that species. [Regulation 39(1)(b)]; and
- Damage or destroy a breeding site or resting place of a dormouse [Regulation 39(1)(d)].

Dormice are a UK BAP Priority Species and a Red Data Book species for UK and Kent (Waite, 2000). They are also on the UK Biodiversity Steering Group Short List of Globally Threatened/Declining Species. The population is suggested to be declining due to changes in woodland management (reduction of food sources and viable habitat) and fragmentation of woodland leaving unviable populations (Harris *et al*, 1995).

In 2001 the dormouse population in the United Kingdom was estimated in the region of 500,000 (Macdonald and Tattersall, 2001). More recently the latest data published by the JNCC (Battersby, 2005) indicates that the present UK population may be as low as 40,000. Although declining in the UK, dormice are believed to be widespread in southern counties (from Devon to Kent) but with only a patchy distribution. No specific information regarding the extent of dormice within Sussex is available, however, the Red Data Book for Kent describes neighbouring Kent as one of the strongholds for dormice and that they have been recorded from suitable woodland throughout the county (Waite, 2000). Population densities are generally thought to be a maximum of 10 adults per hectare, even in good habitats.