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Preliminary Ecological Appraisal

Elbridge Farm Recycling Centre

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Report Summary

1. The Ecology Co-op has been commissioned by Recycle Southern Ltd to undertake an Preliminary Ecological Appraisal at Elbridge Farm Recycling Centre. Site walkover survey visits were carried out by Rozel Hopkins, MSci (Hons), a Qualifying member of the Chartered Institute of Ecology and Environmental Management and accredited agent under Owen Crawshaw's Natural England Level 2 Survey Class Licence, and Kate Lewis, BSc (Hons), ACIEEM, on 5th October 2022 and 11th January 2023, to evaluate the habitat value of the site and its potential to support EU and UK protected/notable species. The purpose of this report is to record the findings of the survey and identify potential ecological constraints and opportunities in relation to a proposal, which will include the extension of the existing materials recycling faculty and waste transfer station to the east, along with the construction of a perimeter soil bund for screening purposes and modifications to the existing site, including the creation of a car park on existing hardstanding along the western boundary and internal conversion of a storage building to new offices.

2. The site measures approximately 1.54ha and is situated in a rural area between North Bersted and Collworth, West Sussex. The majority of the site comprises an active waste recycling centre which comprises of hardstanding and a number of buildings of various materials. The new extension zone comprises an agricultural field that is currently unsown set-aside, bordered by areas of scrub, nettle beds and longer grassy margins. A ditch forms the northern boundary which is designated as a Statutory Main River by the Environment Agency. The banks of the ditch along the boundary of the existing recycling centre are formed of native hedgerow and the area bordering the ditch in the new extension zone comprises shortly-mown grassland. An oak treeline is located on the other side of the bank, outside of the redline boundary. Agricultural and horticultural land dominates the wider area, with fields of glasshouses and arable land present within the wider landscape.

3. The proposal is small in scale and situated outside the zone of influence of all designated sites. As a result, there are no identified mechanisms of impact on designated sites from this proposed development.

4. As the works to create the extension zone will occur within 5m of the ditch, the proposed development would have an impact on water voles, should they be present in this area. It is recommended that water vole presence/likely absence surveys are carried out. This would involve two survey visits spaced at least two months apart between April and September. If water voles are found to be present within the ditch, a water vole mitigation strategy would need to be applied for from Natural England.

5. All works, including the creation of the soil bund and replacement of existing security fencing, must follow pollution prevention guidelines to protect the ditch from sedimentation and runoff. As the watercourse is designated as a Statutory Main River, the Environment Agency will need to be consulted to determine the requirement of a



environmental permit.

6. Precautionary mitigation will be required for:

- **bats during the installation of any new external lighting around the site**
- **breeding birds during site clearance and construction**
- **dormice during any scrub removal and fence replacement works**
- **hedgehogs, reptiles and amphibians during removal of longer vegetation, topsoil removal and the fence replacement works**

7. The installation of nest boxes, described in section 5 of this document will result in new opportunities for nesting birds, and likely beneficial effects for biodiversity at the site should they be implemented.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake an Preliminary Ecological Appraisal (PEA) of land at Elbridge Farm Recycling Centre by Recycle Southern Ltd. This report presents the findings of a walkover survey of a proposed extension site on 5th October 2022 and a second site walkover of the existing waste recycling centre and pond assessment carried out on 11th January 2023, both visits undertaken by Rozel Hopkins, MSci (Hons), a Qualifying member of the Chartered Institute of Ecology and Environmental Management and accredited agent under Owen Crawshaw's Natural England Level 2 Survey Class Licence, and Kate Lewis, BSc (Hons), ACIEEM. It provides details on the potential for any protected/notable species and/or habitats to be present at the site and a simple assessment of the potential ecological constraints and opportunities in relation to the modification and extension of the existing materials recycling facility and waste transfer station. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment (EclA) of the proposal are provided where necessary, and possible measures to avoid, mitigate and/or compensate for significant adverse effects are summarised. The potential to incorporate ecological enhancement measures as part of the scheme is discussed, in addition to any requirement to achieve biodiversity net gain.

This PEA report is designed to inform the client and their team (as appropriate) about the initial findings of the site walkover and desk study research in relation to the site proposals, highlighting the key ecological constraints and opportunities, and any further survey requirements. It is not intended for submission in support of a planning application but can be used to inform a future Ecological Impact Assessment (EclA).

1.2 Background

The site is located at Elbridge Farm Recycling Centre, Bognor Regis PO21 5EF, with the central grid reference being SU 91399 02137. The site measures approximately 1.54ha and is situated in a rural area between North Bersted and Collworth, West Sussex. Agricultural and horticultural land dominates the wider landscape, with fields of glasshouses and arable land present. Some low-density housing is present to the south. Figure 1 shows the boundary of the site.

The proposed project involves the extension of the existing materials recycling facility and waste transfer station to the east, along with the construction of a concrete wall and perimeter soil bund for screening purposes and modifications to the existing site, including the creation of a car park on existing hardstanding along the western boundary and the internal conversion of a storage building to new offices (Figure 2).



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red and the storage building to be converted into new offices which was subject to a bat scoping assessment is shown with a blue arrow. Image produced courtesy of Google maps (map data ©2023 Google).

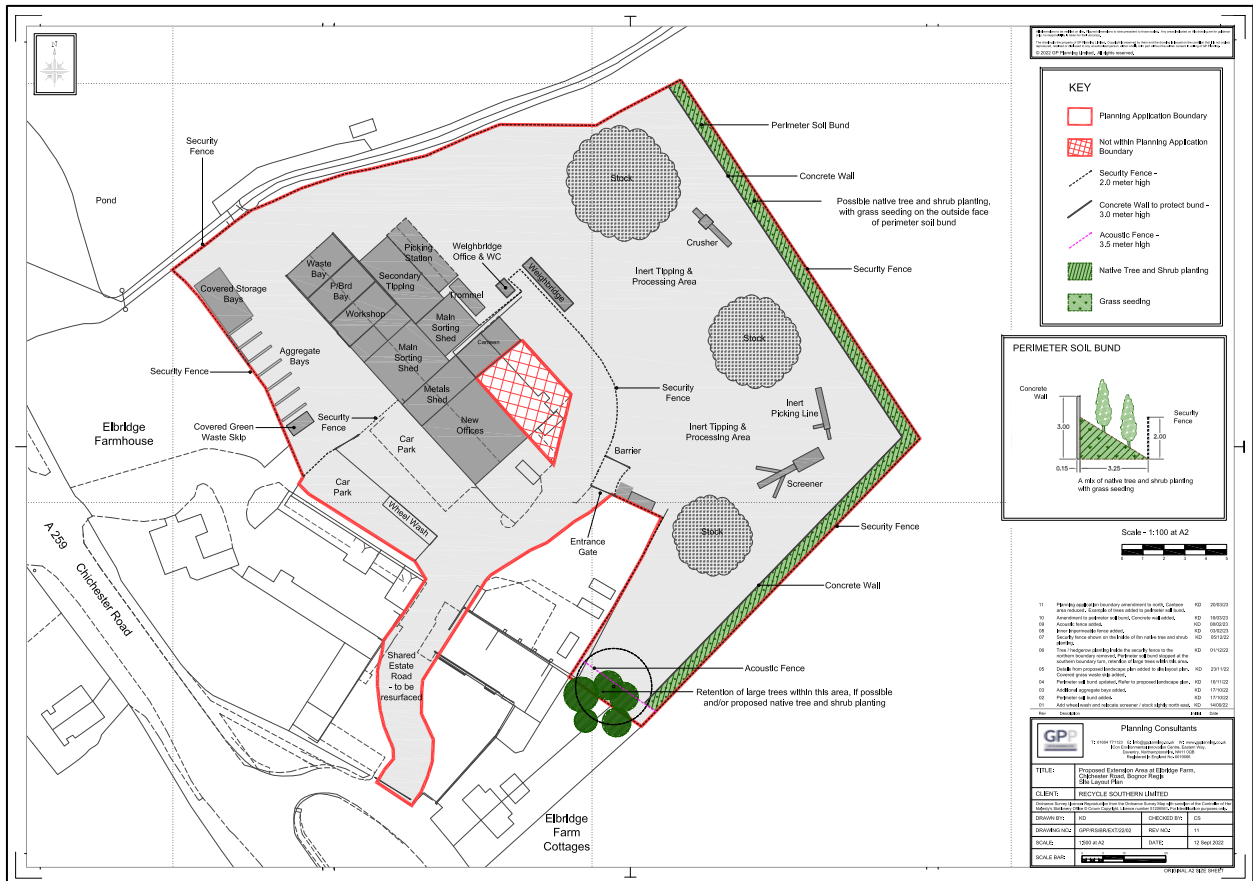


Figure 2. The proposed development layout plan for Elbridge Farm Recycling Centre. Plan courtesy of GP Planning Ltd; dated 20th March 2023 (drawing number GPP/RS/BR/EXT/22/02-11).

1.3 Policy and Legislation

Legal protection applying to relevant bird, mammal, herpetofauna, invertebrate species and flora, and current nature conservation planning policy is outlined in Appendix 1 of this report.

Where possible, this report provides guidance on how the proposal can be designed to meet the requirements of both local planning policy and the National Planning Policy Framework (NPPF). Details of the NPPF can be found in Appendix 1 and relevant local planning policy by Arun District Council is provided in Appendix 2.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal¹, but also consider the Guidelines for Ecological Report Writing, Second Edition².

¹ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

² CIEEM (2017). *Guidelines for Ecological Report Writing, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



2.1 Desk Study

A search for existing records of protected species, species of conservation concern and invasive non-native species was requested from the Sussex Biodiversity records centre (SxBRC) within a radius of 1km of the site.

A search of on-line mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (relevant to great crested newts *Triturus cristatus*), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats and dormice *Muscardinus avellanarius*) in the wider landscape around the site. The connectivity of the site to these features, buildings and other semi-natural habitats, such as grassland and heathland, are also relevant to great crested newts, reptiles and a wide variety of notable species of conservation concern.

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation and European Protected Species (EPS) licences granted in relation to the survey site.

2.2 Field Survey

Site walkover surveys were undertaken on 5th October 2022 and 11th January 2023 during which the habitats contained within the site were described and evaluated. Since this site is relatively small in scale and contains limited semi-natural habitat diversity, it was not considered necessary to undertake comprehensive UKHab mapping of the site. All habitat types contained within the site, together with the dominant botanical species and indicators of important habitat types, such as ancient woodland or unimproved grassland, have simply been listed and described where identified.

Habitats and features at the site were evaluated for their potential to support legally protected species and/or species of conservation interest. In addition, observations of any important plant communities, bird assemblages or other potentially valuable ecological features were recorded.

Details of the preliminary survey methods for each legally protected species are given below. Any site-specific limitations to the survey, e.g. access constraints or seasonal constraints, are set out in section 3.12.

2.3 Badgers

Badgers *Meles meles* exploit a range of habitats, including gardens, coniferous woodland, deciduous woodland, mixed woodland and arable land. They live in an underground system of tunnels and nesting chambers, known as a sett, with territories ranging from 30ha to 150ha or more.

Habitats within the site and surrounding area were broadly assessed for their potential to support badgers. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths and foraging marks, were recorded.



2.4 Bats

Bats can use a wide range of features for roosting purposes, including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy and loose bark.

Trees, buildings and other structures were broadly assessed for their potential to support roosting bats and further surveys are recommended as appropriate. The habitats surrounding the site and wider landscape were also broadly assessed for their potential to support foraging and commuting bats.

2.5 Breeding Birds

Birds can use a wide range of natural and artificial habitats when breeding, including trees, hedgerows, fields, houses and garden sheds. The habitats contained within the site and adjacent areas were broadly assessed for their potential to support important bird species/assemblages, and breeding birds. Any birds identified during the site visit were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern³ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981).

2.6 Dormice

Dormice are found in deciduous woodland and hedgerows, feeding on flowers, pollen, fruits, insects and nuts, favouring hazel *Corylus avellana* and honeysuckle *Lonicera periclymenum* for food and as bedding. The site was broadly assessed for its potential to support dormice. This included use of on-line mapping resources to assess the surrounding area for connectivity to large blocks of woodland, scrub and extensive hedgerow networks.

2.7 Great Crested Newt

Great crested newts breed in ponds during the spring and spend the rest of the year feeding on invertebrates primarily in semi-natural habitats including woodland, hedgerows, marshes and tussocky grassland. A desk study was undertaken to identify ponds and wet ditches within 500m of the site that might support breeding great crested newts. Where access permission was granted, or ponds could be viewed from public roads or footpaths, the ponds were assessed for their potential to support great crested newts using the Habitat Suitability Index (HSI) (Oldham et al 2000)⁴. The value of the site for terrestrially foraging great crested newts and any features that might be used by hibernating newts has also been assessed.

³ Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 114, pp 723-747.

⁴ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.



2.8 Reptiles

The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus* are widespread species that can be found in any of these habitats, whereas smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* have much more restricted and isolated populations on lowland heathland and sand dunes.

Habitats on the site were broadly assessed for their potential to support reptiles. Particular attention was paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub).

2.9 Riparian Wildlife

Any watercourses identified during the desk study or field survey were assessed for their suitability to support otter *Lutra lutra*, water vole *Arvicola amphibius* and American mink *Neovison vison*. Suitable habitat includes grassy banks along slow-moving rivers, ditches, streams, lakes, ponds, canals, as well as marshland and upland. Field signs include faeces, latrines, feeding stations, burrows, footprints and runs or pathways.

2.10 Other Notable Species

The site's habitats were broadly assessed for their potential to support species of principal importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse *Micromys minutus*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with particular attention paid to features such as standing dead-wood, wet flushes, bare earth banks and botanically rich areas.

3 BASELINE CONDITIONS

3.1 Designated Sites and Granted EPS Licences

There is one nationally designated site within 2km: The Brooks Local Nature Reserve (LNR), located 1.5km to the east of the site (Figure 3). This site is a mosaic of habitats including meadow, narrow reedbeds, ditches, permanent and temporary ponds and extensively newly planted floodplain woodland. The Brooks LNR floods in the winter, making it a good place for wildlife.

No other statutory or locally designated site is present within 2km; however, Pagham Harbour Special Protection Area (SPA), Ramsar and LNR is located 4.9km to the south-west. This site comprises an extensive area of salt-marsh and intertidal mudflat habitat including shingle, open water, swamp and wet permanent grassland. These habitats are important in their own right and the site is of national importance for over 120 species of birds as well as for waders and breeding birds that use the range of habitats present. The site qualifies for supports the following Annex I species: little tern *Sterna albifrons*,



ruff *Philomachus pugnax* and pintail *Anas acuta*. Notable invertebrates on the site include the sand dart *Aagrrotis ripae*, Matthew's wainscot moth *Mythimna favicolor* and the long-winged conehead grasshopper *Conocephalus discolor*. There are also no EPS licences granted within 1km of the site boundary.

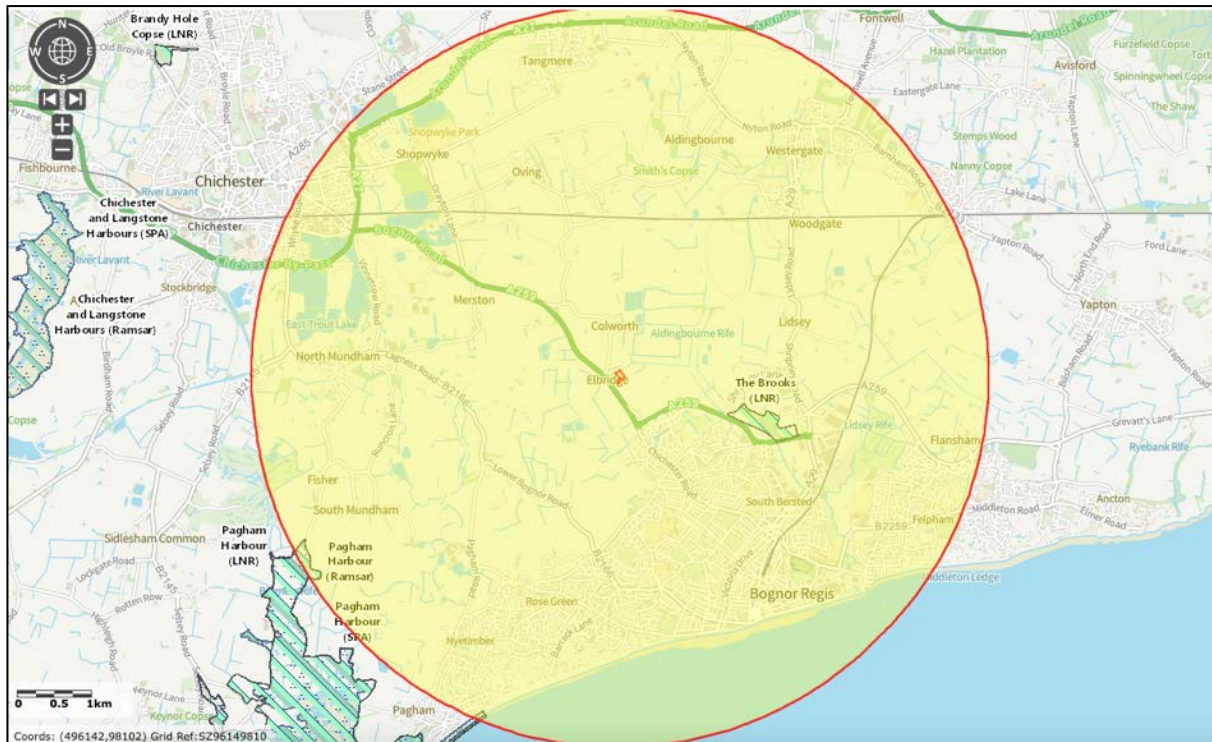


Figure 3. Designated sites within a radius of 5km of the application site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>), contains public sector information licensed under the Open Government Licence v3.0).

3.2 Habitats

The majority of the site comprises an active waste recycling centre. This area comprises hardstanding with a number of buildings and portacabins around the site. Most of the buildings were formed of corrugated iron and breezeblock walls with a mixture of metal and plastic gabled roofs. A small (approximately 6m²) section of bramble *Rubus fruticosus* agg. scrub is located south of the building to be modified into new offices. Within this bramble is a mature wild cherry *Prunus avium* tree. No other area of the existing waste management site contains any vegetation. However, the western boundary of the site is delineated by a timber fence with a native species-rich hedgerow with trees adjacent, east of the redline boundary. This hedgerow comprises elder *Sambucus nigra*, blackthorn *Prunus spinosa*, field maple *Acer campestre*, ash *Fraxinus excelsior*, dogwood *Cornus sanguinea*, lime *Tilia* species, buddleia *Buddleja davidii* and holm oak *Quercus ilex*.

Most of proposed extension zone comprises an agricultural field that is currently unsown set-aside. This is dominated with goosefoot *Chenopodium* spp. with a variety of other arable weeds and scattered grasses including Yorkshire fog *Holcus lanatus*, field bindweed *Convolvulus arvensis*, Canadian fleabane *Erigeron canadensis*, cleavers *Galium aparine*, an orache *Atriplex* species, hogweed *Heracleum sphondylium*, ragwort *Jacobaea vulgaris*, broad-leaved dock *Rumex obtusifolius*, common field speedwell *Veronica persica*, oxeye daisy *Leucanthemum vulgare*, swine-cress *Coronopus*



squamatus, greater willowherb *Epilobium hirsutum*, common dandelion *Taraxacum officinale* agg., creeping thistle *Cirsium arvense*, purple toad flax *Linaria purpurea*, bristly oxtongue *Helminthotheca echioides*, black nightshade *Solanum nigrum*, buddleia *Buddleja davidii*, dog's mercury *Mercurialis perennis*, prickly sow thistle *Sonchus asper*, common knotgrass *Polygonum aviculare*, chickweed *Stellaria media*, common nettle *Urtica dioica*, Michaelmas-daisy *Symphotrichum novae-angliae*, curled dock *Rumex crispus*, red dead nettle *Lamium purpureum*, scentless mayweed *Tripleurospermum inodorum*, round-leaved fluellen *Kickxia spuria*, a figwort *Scrophularia* species, a fumitory *Fumaria* species, greater plantain *Plantago major*, scarlet pimpernel *Anagallis arvensis*, travellers joy *Clematis vitalba* and spear thistle *Cirsium vulgare*.

A ditch forms the northern boundary which is designated as a Statutory Main River by the Environment Agency. This ditch, as it stands, has minimal aquatic vegetation within it, instead it is filled with high levels of silt and leaf litter. Approximately 84m of the ditch borders the existing waste recycling centre, separated from the works by a fence line of corrugated metal sheets, timber fence and chip boarding. There is evidence of abstraction from the ditch by the existing waste site, with pipes and gaps in the fence allowing access. The banks of the ditch in this area are formed of a native hedgerow of elder *Sambucus nigra*, pedunculate oak *Quercus robur*, ash and bramble. Approximately 45m of the ditch borders, or is within 10m of, the new extension area. Between the ditch and the extension area is a margin of shortly-mown grassland dominated by Yorkshire fog with hogweed, common nettle, creeping thistle, cow parsley *Anthriscus sylvestris*, curled dock and another dock species. A semi-mature oak *Quercus* sp. treeline is located on the other side of the bank, outside of the redline boundary. The trees are showing evidence of being subject to high levels of dust pollution.

An area of bramble *Rubus fruticosus* agg. and elder *Sambucus nigra* scrub is present in the southern corner of the site. The southern corner and western boundary of the proposed extension zone are bordered by nettle beds and longer grassy margins of Yorkshire fog and hogweed, approximately 2-3m in width. A strip of longer grassy margin is also present between the mown grass and set-aside field.



Photograph 1a (left) & b (right). View east along the northern boundary of the new extension zone, showing an area of shorter modified grass next to the banks of a ditch. An oak tree line is present on the far side of the ditch (outside of the extension zone) which has been subject to high levels of dust pollution (as evidenced by the sediment seen on the leaves).



Photograph 2a (left) & b (right). View west along the northern boundary of the new extension zone, showing an area of shorter modified grass next to the banks of a ditch and the north-eastern corner of the existing recycling centre.



Photograph 3a (left) & b (right). Left – View south-west over the proposed extension zone, showing agricultural set aside. Right – View north towards the northern site boundary and treeline on the far side of the ditch.



Photograph 4a (left) & b (right). Left – Close-up view of vegetation within the extension zone. Right - View south across the proposed extension zone.



Photograph 5a (left) & b (right). Left – View north-west across the dirt track on the proposed extension zone, close to the eastern boundary of the existing recycling site. Right – View south along the southern boundary, showing longer nettle bed.



Photograph 6a (left) & b (right). Views of the southern boundary of the site, showing mixed scrub with longer nettles and grass.



Photograph 7a (left) & b (right). Left – Nettle beds along the eastern boundary of the existing recycling centre boundary. Right – View south of the existing recycling centre site, showing hardstanding.



Photograph 8a (left) & b (right). The northern boundary of the existing recycling centre, showing the current corrugated metal, timber and chipboard fencing separating the site from the ditch.



Photograph 9a (left) & b (right). Views of the ditch along the northern boundary of the recycling centre through a gap in the fence line, showing evidence of abstraction from the ditch.



Photograph 10a (left) & b (right). Left – View of the western boundary of the existing recycling centre, showing aggregate bays and a timber fence. A hedgerow with mature trees is seen on the far side of the fence, outside of the red line boundary.



Photograph 11a (left) & b (right). Left – The western elevations of some of the buildings in the recycling centre. Right – The wild cherry tree and small area of scrub within the recycling centre site.

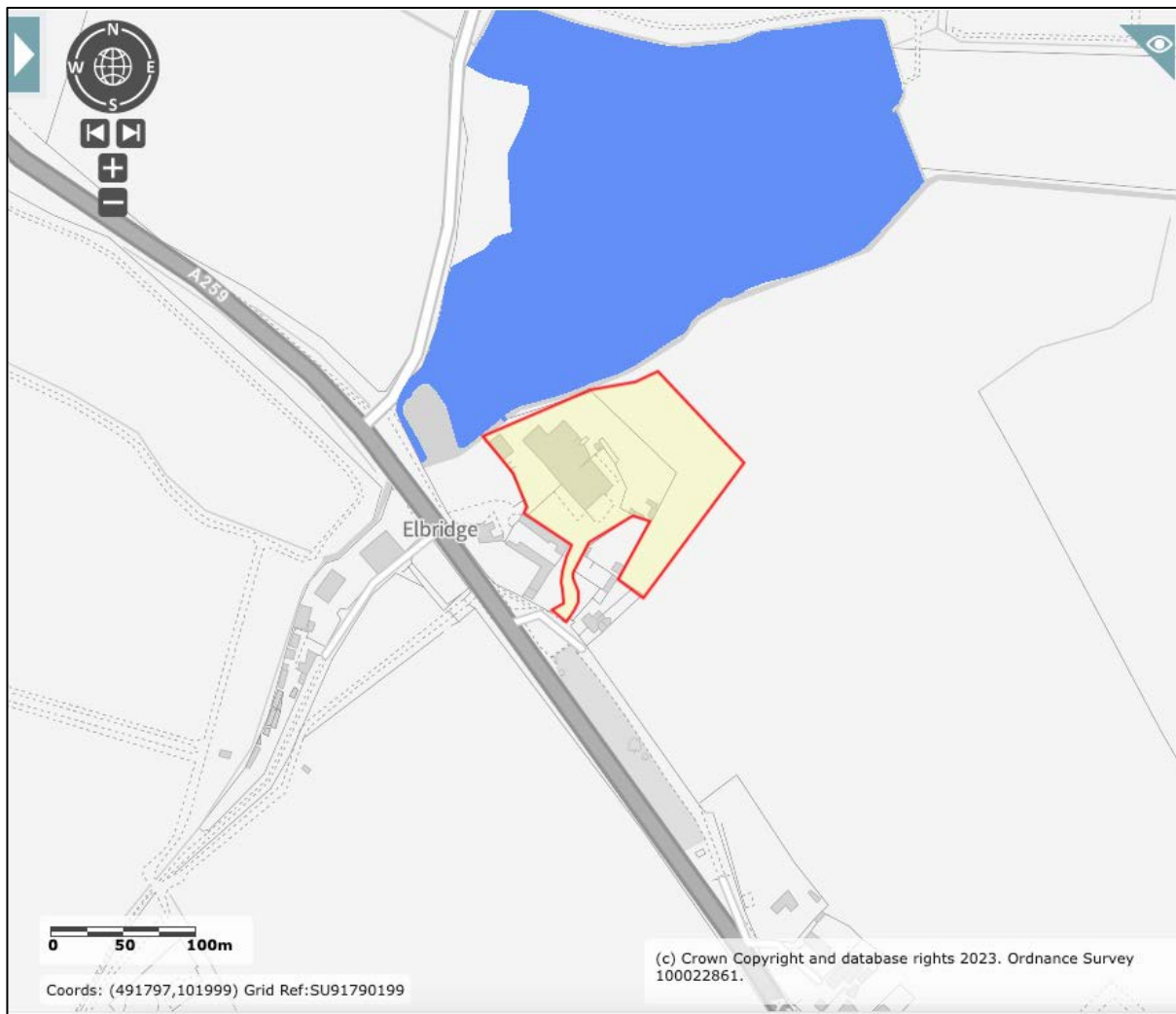


Figure 4. Priority coastal and floodplain grazing marsh relative to Elbridge Farm Recycling Centre (outlined in red). Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).



3.3 Badgers

No signs of any badger activity were seen during the survey assessment, although there are habitats of some limited value for this species within the arable field and surrounding landscape. It is likely that if any setts were situated within 30m of the site boundary, then evidence of badger activity would have been observed.

Records of badgers are not provided by the records centre, due to the sensitive nature of this information.

3.4 Bats

No trees are anticipated to be removed as a result of the proposals, and no trees within the site boundaries were identified as supporting any suitable bat roosting features. Therefore, tree roosting bats are not considered to be a constraint to development.

No bats or evidence of bats were recorded in association with the storage building, which is to be converted into new offices (Photographs 12 & 13). The building measures approximately 20m (l) x 15m (w) x 6m (h) and is formed of single-skinned corrugated metal and plastic with a metal supporting frame. These materials are unsuitable for roosting bats due to their thermal capability causing large fluctuations in temperature from day to night. Internally, the building is lit by translucent plastic rooflights and no separate loft void is present. No cracks or crevices were identified within the building of a suitable size for roosting bats. Therefore, this building is rated as having 'negligible' suitability for roosting bats.

Adjacent to the site, a barn was identified to the west, located outside of the redline boundary, that has features potentially suitable for roosting bats (Photograph 14). These features included gaps in the roof due to cracked and lifted roof tiles and gaps under lifted weatherboarding. The gaps could provide roosting spaces for crevice-dwelling bats such as pipistrelles *Pipistrellus* spp. As this barn is located outside of the redline boundary, a full inspection of the building was not carried out and therefore its overall roosting potential cannot be rated.



Photograph 12a (left) & b (right). Left - the southern elevation of the storage building. Right – The western elevation of the storage building.



Photograph 13. Interior view of the storage building.



Photograph 14a (left) & b (right). Views of the barn adjacent to the western boundary of the site, with suitable features for roosting bats.

Hardstanding and buildings cover the majority of the existing recycling centre, which both have very limited value for foraging and commuting bats. The majority of the proposed zone of impact for the new extension comprises of agricultural set-aside which, although having a diversity of arable flora due to its lack of management within the last couple of years, would likely still provide low quality habitat due to the intensive nature of its prior management. This would particularly be the case if the field has been subject to high levels of pesticide use, reducing invertebrate prey diversity. The scrub and nettle habitats to the south may offer suitable foraging habitat for bats; however, they are very small in their extent. The most important feature for bats on the site is the ditch running along the northern boundary, which



would attract bats that frequently forage near water such as soprano pipistrelle *Pipistrellus pygmaeus* and Daubenton's bats *Myotis daubentonii*. This waterbody connects to a vast number of further streams and ditches within the wider landscape, however other commuting habitat is limited in the area, with only a few hedgerows and treelines further afield. Overall, the majority of the site is considered to have low value for foraging and commuting bats, with the ditch at the northern boundary having moderate value for bats.

The Sussex biodiversity record centre provided six bat records in the search area comprising five records of western barbastelle *Barbastella barbastellus* and one unidentified species bat record. The closest of these was a western barbastelle bat recorded foraging and commuting within the parish of Oving.

3.5 Breeding and Wintering Birds

The set-aside field has some suitability for nesting skylark *Alauda arvensis*, a species which is red listed on the Birds of Conservation Concern. However, the availability of suitable vegetation cover and plant species composition of the field makes the site sub-optimal for this species. The composition of arable weeds forming the majority of the field also has some value to overwintering passerines such as finches and buntings, some of which are red and orange listed birds.

The mixed scrub along the southern boundary, and the bramble scrub and wild cherry tree have the potential to support a variety of common nesting birds, but these habitats are small in extent. In addition, the bramble scrub and wild cherry tree are susceptible to regular disturbance from the active waste management site, reducing their value as breeding sites for many species of birds.

The metal storage building to be converted into new offices has suitability for nesting birds, such as blackbird *Turdus merula* and pigeon *Columba palumbus*. Frequent disturbance of the building due to the nature of the recycling works reduces its suitability to support rarer species.

SxBRC provided numerous bird records for the search area concerning a total of 119 species. Most of these species are relatively common and widespread, but the list includes 16 species of principal importance for conservation (S41 NERC Act 2007), and 15 species listed on Schedule 1 of the Wildlife and Countryside Act. In addition, 24 species are red listed on the Birds of Conservation Concern.

3.6 Dormice

The majority of the site has no value for dormice but there is a small amount of mixed bramble and elder scrub in the southern corner of the site and a mature tree line along the northern boundary of the waste management site, both of which may have suitability for this species. The lack of species diversity of both habitats, however, means that there is a poor provision of suitable food resources for dormice overall on site. In addition, these habitats have limited connectivity to other suitable habitats within the wider landscape, with the closest pocket of mature woodland located 1km south of the site and partly fragmented by the A259 road.

While no records of this species were provided by Sussex Biodiversity Records Centre, this species is



known to be under-recorded and could occur in any suitable habitat in West Sussex.

3.7 Great Crested Newts and other Amphibians

The existing waste management site and majority of the extension zone both have limited suitability for great crested newts. However, the longer grassland, nettles and scrub along the western and southern boundaries of the extension zone, albeit limited in its extent, could act as suitable refuge and foraging habitat for these species. In addition, the hedgerow along the banks of the ditch could also offer refuge and foraging opportunities, although this is expected to be retained during the works.

The ditch along the northern boundary is fast-flowing and therefore unsuitable for great crested newts. However, a pond (Pond 1) measuring approximately 1,165m² is located 15m north-west of the existing waste recycling centre and 100m west of the proposed extension area (Photograph 15). This is the only known pond located within 250m of the development site, which is the most utilised radius of land by a great crested newt population from a breeding pond⁵. The pond was accessed during the site visit in January and was found to be an offshoot of the ditch, reducing its suitability significantly due to its fast-flowing inputs. The pond is also heavily shaded by a number of mature willow trees and no vegetation was recorded within the water. The pond was rated as having 'below average' suitability for great crested newts with a Habitat Suitability Index score of 0.56 (full results are shown in Appendix 3).

No amphibian records were returned within 1km of the site by SxBRC.



Photograph 15a (left) & b (right). Left - View of Pond 1. Right – View east of the ditch feeding into Pond 1 which runs along the north boundary of the site.

⁵ Froglife (2001) *Great Crested Newt Conservation Handbook*, page 10 - https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

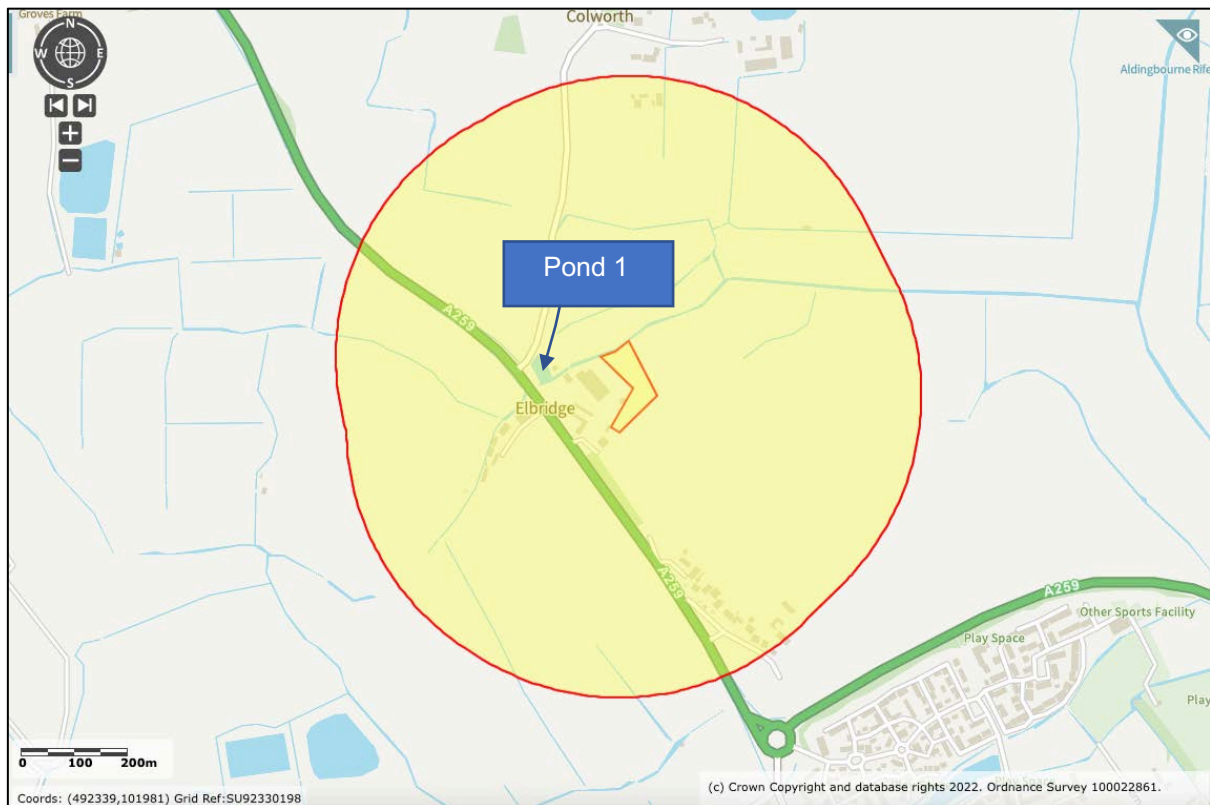


Figure 5. Ponds within 500m of the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.8 Reptiles

The majority of the site is unsuitable for common reptiles, with hardstanding comprising the existing waste recycling centre and large areas of bare ground in amongst arable weeds in the proposed extension zone providing limited refuge and foraging suitability. However, the longer grassy, nettle borders and mixed scrub along the southern corner and western boundary of the proposed extension zone are potentially suitable for common reptile species, particularly common lizard and slow worm. However, these habitats are small in their extent.

The SxBRC search returned one grass snake *Natrix helvetica* record, located approximately 950m south-west of the site. No other reptiles were recorded as present within 1km of the site.

3.9 Riparian Wildlife

The ditch along the northern boundary has suitability for water voles, however the shortly-mown nature of the grass next to the banks of the ditch in the north-eastern section of the site and lack of vegetation within the channel does reduce this section of the watercourse's value.

Two burrow entrances were identified on the grassy verge of the north-eastern section of the ditch, although it was not possible to determine if these belonged to water voles or another small mammal such as a rat. No feeding remains, latrines or other evidence of use by water voles were identified, although it must be noted that the site visit was carried outside of the optimal water vole survey season.



The ditch is not suitable for otters as it lacks suitable cover and is unlikely to have any foraging value. White clawed crayfish generally prefer good quality calcareous and rocky substrates within flowing waterbodies, which were not found at the site.

The Sussex biodiversity records search indicates the presence of water vole *Arvicola amphibius* within 1km of the site. The closest of these records was 280m north-east of the site, where evidence was found adjacent to a ditch that has direct connectivity to the one bordering the site at the north.

3.10 Invasive Non-native Species

No evidence of invasive non-native species was found during the walkover survey.

The SxBRC records search indicates the presence of Japanese knotweed *Fallopia japonica*, wall cotoneaster *Cotoneaster horizontalis*, New Zealand pigmyweed *Crassula helmsii*, giant hogweed *Heracleum magntegazzianum*, Himalayan balsam *Impatiens glandulifera* and parrot's-feather *Myriophyllum aquaticum* within 1km of the site.

3.11 Other Notable Species

The agricultural nature of the extension zone, which sits within a mosaic of arable fields bounded by hedgerows and treelines at the east, could potentially support brown hare *Lepus europeus*, although none were observed during the site walkover. No hare records were returned from SxBRC within 1km.

The scrub and longer grassland bordering the proposed extension zone at the south and west, and the mature treeline along the northern boundary have suitability for nesting, foraging and commuting hedgehogs *Erinaceus europaeus*. SxBRC provided two records for hedgehogs, the closest located approximately 800m north of the site.

3.12 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey, but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

4 IMPACT APPRAISAL

4.1 Designated Sites

The Brooks LNR is located approximately 1.5km east of the site and Pagham Harbour SPA, Ramsar and LNR is located 4.9km south-west. However, due to the distance between all designated sites and



the scale of works, construction and operation phase impacts of this extension such as dust, lighting, physical damage and noise are considered unlikely to negatively impact these sites.

4.2 Habitats

The majority of the site comprises of hardstanding and arable set-aside – habitats with limited ecological value. However, the areas of mixed scrub in the southern corner of the site and mature wild cherry tree in the centre of the existing recycling facility are of higher value and should be retained and protected from root compaction through the installation of barrier fencing outside the Root Protection Areas (RPAs), and permanent and temporary ground protection as required, in accordance with specialist arboricultural advice. The installation any fencing within the roof protection zones of the larger shrubs and trees along the north and southern boundaries should be carried out sensitivity, with holes dug by hand and damage to roots avoided where possible. The areas of longer grassland and bramble scrub along the boundaries of the extension zone do also have some value but are small in extent. These habitats will be lost as a result of the proposed work and will not be compensated for under the current plans.

The ditch along the northern boundary is one of the most ecologically valuable features within the site and is designated as a Statutory Main River. As works to extend the recycling centre will occur within 8m of this watercourse, the Environment Agency will need to be contacted to determine if the development will require an environmental permit in accordance with relevant byelaws. In addition, without the adoption of careful works practices, the proposed development has the potential to result in the degradation of the ditch either through direct pollution from sedimentation and run-off. Works must adhere to the Environment Agency's Pollution Prevention Guidelines⁶ (note these guidelines have been withdrawn, however, in the absence of updated guidance, provide the most relevant advice regarding pollution prevention). This will be particularly important during the replacement of the existing security fence and extension of the site at the north, which must be supervised by an ecologist to ensure that no runoff occurs into the ditch during the time the fencing is removed.

Heras fencing must be placed along the ditch north of the proposed extension zone prior to works commencing to protect this area from construction. This fencing should be fitted with a non-permeable membrane to prevent pollutants entering the waterbody and sedimentation during construction. In regard to the existing site, no further encroachment of this area of the ditch is anticipated, and instead the ditch will be protected from pollution by the installation of a non-permeable security fence along the northern boundary.

A new bund is proposed along the southern and eastern boundaries of the new site, which will be planted up with native scrub. The bund must be constructed with inert soil to avoid the leaching of chemicals into the ditch, and pollution prevention guidelines must be strictly followed to ensure that no soils enter the water. The concrete wall located on the interior of the bund will add a layer of protection to the new planting from piling of spoil and trampling by machinery. A 2m high security fence will also be positioned to run along the outside face of the bund which must also comprise of a non-permeable membrane along the north and west to prevent sedimentation and dust pollution reaching the adjacent

⁶ Environment Agency (2013). *Pollution Prevention Guidelines: PPG1*.



ditch and other habitats. The external security fencing along the eastern and southern boundaries lying adjacent to the bund will not need to be impermeable, due to the bund and concrete wall providing protection, but it is important that small (13cm x 13cm) holes are created at the base of the fence every 10m to allow wildlife to access the habitat on the bund. The interior protection fence should not contain any access holes to prevent wildlife from accessing the active waste management site.

4.3 Badgers

No signs of badger activity were identified during the assessment and no badger setts are situated on or near to the proposed construction zone. No further surveys or mitigation for badgers is advised, however, if any signs of digging by large animals is identified on or near to the site in the future, prior to development or the submission of a planning application, further surveys would likely be required.

4.4 Bats

As the site may be used by bats, it is important that the potential for disturbance from artificial lights is considered. The proposed development will require an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3), particularly in relation to the creation of the new car park along the western boundary. This will be positioned close to the adjacent barn with suitable bat roosting features. Any new lighting within the car park or along the western boundary in general should be carefully designed and include the following measures:

- external lighting must be avoided where possible, with reflective white line marking used to highlight the parking area and paths where required
- all external lighting and internal lighting spill must be directed away from the barn and western boundary.
- all external lighting should be directed downwards, with low-level bollards with hoods or baffles used where possible
- all external lights should be set to motion sensors with 5-minute timers to ensure lighting is only transitional
- light sources must be of a spectrum and type of which bats and their invertebrate prey are not sensitive to, with a peak wavelength of >550nm and a warm colour temperature of <2700K

4.5 Breeding and Wintering Birds

The scrub within the site has the potential to support a variety of common nesting birds. The majority of the scrub along the southern boundary is expected to be retained as part of the development, however a small section of bramble scrub will be removed. The arable set-aside habitat is also suitable, yet sub-optimal, for breeding skylark but the scale of the development is relatively small, with significant amounts of suitable habitat retained within the immediate and wider surroundings to the east, outside of the redline boundary. In addition, the building to be converted into new offices could support common nesting bird species and wild cherry tree is located on the existing site which has suitability for nesting birds, although this tree will be retained.



It will be essential that any site clearance, building conversion works or works within 5m of the retained wild cherry tree must be timed to avoid the nesting bird season, avoiding 1st March to 31st August. If this is not practically possible, the affected area(s) must first be searched by a suitably qualified ecologist to determine the presence of any active nests. If an active nest is identified, a minimum exclusion zone for all vegetation clearance and construction works must be established within a 5m radius of the nest to protect it from disturbance until the young have fledged.

The loss of the arable set-aside will also result in the reduction of seed availability for wintering passerines, which may utilise the existing site. The creation of a mosaic of mixed scrub, as detailed in section 4.2, will compensate for the loss of this food source.

4.6 Dormice

Whilst the mixed scrub at the southern corner of the site and mature treeline along the northern boundary are both species-poor and have limited connectivity to suitable habitats within the wider landscape, the potential presence of dormice cannot be ruled out. Whilst the majority of this scrub and the entire treeline are to be retained, as detailed in section 4.2, a small amount of bramble scrub will be removed during the site extension and the fencing replacement works may have the potential to disturb the treeline habitat. A dormouse nest tube survey is not recommended as it is not considered to be proportionate to the small scale of the proposed impact. Furthermore, there is not sufficient habitat upon the site for a nest tube presence/likely absence survey to be carried out. As a result, reasonable avoidance measures are recommended. This must include:

- all scrub removal and fence replacement works will be undertaken only under a watching brief by a suitably qualified ecologist. In order to ensure compliance with legislation protecting dormice, the advice of the ecologist shall be adhered to under all circumstances;
- a tool box talk will be provided to the contractors on being vigilant for dormouse nests while carrying out the vegetation clearance and fence removal;
- all vegetation will be cleared slowly and methodically using hand-held strimmers and chainsaws as appropriate, only following a thorough hand search;
- the ecologist will undertake thorough fingertip searches of the vegetation being removed to confirm the absence of any dormouse nests; and
- should any dormice or evidence of dormice be identified at any time, then work would have to cease whilst an EPS licence is applied from Natural England and suitable mitigation strategy is put in place.

In addition, as dormice are nocturnal, it is important that the potential for disturbance from artificial lights is considered, as for bats (see Appendix 3).

4.7 Reptiles and Amphibians

The majority of the site has terrestrial habitat which is of a poor quality for reptiles and amphibians (herptiles). However, there is some suitable longer grassland, nettle beds and scrub along the western and southern boundaries of the proposed extension area, but the extent of this habitat is small.

The fast-flowing ditch along the northern boundary is unsuitable as breeding habitat for great crested



newts. The pond located to the north-west of the site was also rated as having 'below average' suitability for great crested newts and is fed into by the flowing ditch, further reducing its' suitability and acting as a barrier for dispersal for amphibians.

In light of the above information, in this instance no further surveys for reptiles or amphibians are recommended. Instead, precautionary measures are advised to avoid any harm to herptiles during the construction phase of the development. This will involve the following:

- prior to any works commencing, of fingertip search of all suitable habitat must occur by a suitably qualified ecologist. In the event any reptiles are found, they must be relocated to the rest of the field, outside of the red line boundary. The removal of the longer vegetation will then be subject to a two-phase strim approach. The first strim would reduce the vegetation to 15cm in height to encourage any reptiles to move out of the area. A second pass would reduce the vegetation height to 5cm which would render the habitat unsuitable. These works could be undertaken by an ecologist who is trained in the use of trimmers to ensure that the 'two-phase strimming' work is compliant;
- any removal of topsoil must occur under the supervision of an experienced Ecological Clerk of Works (EcoW), who will ensure in the unlikely event that any reptiles are found during digging that they are safely translocated outside of the construction zone;
- the replacement and assembly of the new security fence along the northern boundary of the site must be overseen by an ecologist;
- in the unlikely event that any great crested newts are identified at any time, then work must cease whilst an EPS licence is applied from Natural England and suitable mitigation strategy is put in place.

The creation of the 8m buffer zone and planting up of the bund with native species, as detailed in section 4.2 will partially compensate for the small loss of suitable herptile habitat, although this is lower in extent compared to the area of grassland and ruderal vegetation lost during works.

4.8 Riparian Wildlife

The ditch along the northern boundary has suitability to support water vole, and records of this species have been identified in close proximity to the site, within the same ditch system. As works to extend the existing site will occur within 5m of the banks of the ditch, the proposed development would have an impact on water voles, should they be present in this area. Therefore, water vole surveys of the ditch will be necessary to determine the presence/likely absence of water voles. In accordance with The Mammal Society guidance, this would involve two survey visits spaced at least two months apart; one in the first half of the active season (mid-April to June) and one in the second half of the season (July to September inclusive). During the surveys the length of the watercourse should be walked by suitably experienced surveyors looking for the following evidence up to at least 2m from the water on either bank⁷:

- droppings
- latrines
- feeding stations

⁷ <https://www.gov.uk/guidance/water-voles-protection-surveys-and-licences>



- burrows
- footprints
- runs or pathways

If presence of water vole is confirmed within the proposed zone of impact, a water vole mitigation licence may be required for any works that would impact upon water voles or their burrows.

4.9 Other Notable Species

The site has the potential to support brown hares and the development will result in the loss of suitable habitat for this species. However, the small scale of the proposal and abundance of suitable habitat within the wider landscape means that this loss is not considered to be significant in this instance.

The hedgehog has suffered dramatic declines in population in recent decades⁸ although it remains fairly widespread. Habitats within the site have the potential to be used by this species for foraging, commuting and shelter and some of this will be lost during the proposal. Where any suitable habitats for hedgehogs are removed, site preparation must be preceded by a hand search to ensure that, in the event a hedgehog is present, it can be moved safely to suitable habitat bordering the wider field, outside of the proposed zone of impact. The creation of new scrub, as detailed in section 4.2, will help to compensate and enhance the availability of suitable habitat for this species.

5 OPPORTUNITIES FOR SPECIES-SPECIFIC ENHANCEMENT

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. The planting scheme will include native shrub species and flowering species known to encourage insect diversity. Such measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

It is recommended that two 1ZA Schwegler Wren Roundhouse (Figure 6; or similar) nest boxes are installed upon larger shrubs within the retained scrub in the southern corner. These should be placed at a height of between 1.5-3m in a shady spot, sited in undergrowth to provide cover for the nest.

⁸ British Wildlife (December 2016) Britain's Hedgehogs: research and the conservation effort in the face of serious decline. British wildlife Vol. 28, pp78-86)

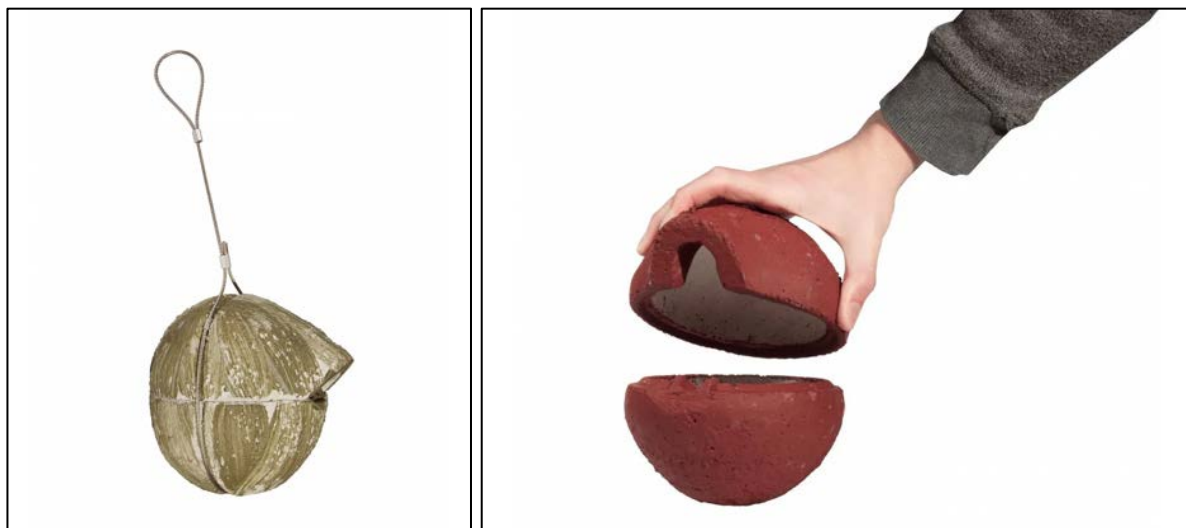


Figure 6. 1ZA Schwegler Wren Roundhouse Nest Boxes

6 CONCLUSIONS

Elbridge Farm Recycling Centre comprises of an existing waste transfer recycling facility and a section of arable field, which has currently been left as set-aside. The extension of the facility and modification of the existing site, as shown in Figure 2, will result in the loss of arable set-aside, hardstanding and small areas of bramble scrub and longer grassland vegetation. A ditch is located along the northern boundary of the site which could be vulnerable to sedimentation and runoff during the construction and operation phases of development, so all works must follow pollution prevention guidelines. In addition, the Environment Agency will need to be consulted to determine the requirement of an environmental permit, as the watercourse is designated as a Statutory Main River.

A soil bund will be created along the eastern and southern boundaries of the site which will be planted with scrub. A concrete wall, located on the interior of the bund, will add a layer of protection to the new planting from piling of spoil and trampling by machinery. A 2m high security fence will form the boundary of the site, which will comprise of a non-permeable membrane along the north and west to prevent sedimentation and dust pollution.

As the extension works will occur within 5m of a ditch, it is recommended that water vole presence/likely absence surveys are carried out. This will involve two survey visits undertaken between April and September.

Precautionary mitigation will be required for:

- bats, during the installation of any new external lighting around the site (section 4.4)
- breeding birds, during site clearance and construction (section 4.5)
- dormice, during any scrub removal and fence replacement works (section 4.6)
- hedgehogs, reptiles and amphibians during longer vegetation removal, topsoil removal and the fence replacement works (sections 4.7 and 4.9)

The installation of nest boxes, described in section 5 of this document will result in new opportunities for nesting birds, and likely beneficial effects for biodiversity at the site should they be implemented.



It is important that no habitat clearance or other site preparation work should be undertaken until planning permission has been granted and all relevant protections for habitats of importance and protected species have been detailed and implemented. Please be advised that any work to remove or modify habitats outside of typical management may undermine a future planning application.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op, info@ecologyco-op.co.uk, www.ecologyco-op.co.uk, Office: 01798 861800.



APPENDIX 1 – Wildlife Legislation and National Planning Policy

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The ‘Birds Directive’, ‘Habitats Directive’ and ‘Natura 2000 Sites’

The Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”) sets a framework for the protection of wild birds. Under the Directive, several provisions are made including the designation and protection of ‘Special Protection Areas’ (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) directs member states of the EU to take measures to maintain the favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the Directive (for example Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus* and white-clawed crayfish *Austroptamobius pallipes*. Together with ‘Special Areas of Conservation’ (SACs), SPAs form a network across Europe of protected areas known as the ‘Natura 2000 sites’.

Annex IV lists species in need of more strict protection, these are known as “European Protected Species (EPS)”. All bat species, common dormice *Musccardinus avellana*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The ‘Habitats Regulations’

The Conservation of Habitats and Species Regulations 2017, as amended (the “Habitats Regulations”) is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 (“the 1994 regulations”) in England and Wales.

‘Natura 2000’ sites, now known as National Site Network sites under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, receive the highest level of protection under the Regulations which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where ‘likely significant effects’ to the conservation objectives are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb wild animals of such species;
- deliberately take or destroy their eggs (where relevant);
- damage or destroy a *breeding or resting place* of such an animal;
- possess, control, sell or exchange any live or dead animal or plant, of such species;
- deliberately pick, collect, cut, uproot or destroy a wild plant of such species.



The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- a licence can be granted for the purposes of “preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 53 (2) (e));
- a licence can be granted if “there are no satisfactory alternatives” to the proposed action;
- a licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act (1981) as amended.

This remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- take, damage or destroy the nest of any wild bird while it is in use or being built
- take or destroy the egg of any wild bird
- disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole *Arvicola amphibius*, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrium w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example, Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the



Act (this includes all bat species, badger, otter, polecat, dormice, hedgehog and red squirrel).

Natural Environment and Rural Communities (NERC) Act (2006)

The NERC Act (2006) created the statutory nature conservation body Natural England, and places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

The Act enables the reform of the Habitats Regulations and further improves protection for nature through the establishment of Local Nature Recovery Strategies that support national Nature Recovery Networks. In addition, the Act provides for the production of Protected Site Strategies and Species Conservation Strategies, aimed at supporting the design and delivery of strategic approaches to deliver better outcomes for nature.

Protection of Badgers Act (1992)

The badger *Meles meles* is afforded specific legal protection in Britain under the Protection of Badgers Act (1992), and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (see above).

Under this legislation, it is a criminal offence to:

- intentionally kill, injure, take, possess, or cruelly ill-treat, a badger, or to attempt to do so;
- interfere with a sett, by damaging or destroying it;
- to obstruct access to, or any entrance of, a badger sett; or
- to disturb a badger when it is occupying a sett.

A licence may be obtained from Natural England to permit certain prohibited actions for a number of defined reasons including interference of a sett for the purpose of development, provided that a certain number of conditions are met. Note that licenses are not normally granted for works affecting badgers between the end of November and the start of July.

National Planning Policy Framework



The National Planning Policy Framework (NPPF 2021)⁹ sets out the Government’s view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

Paragraph 179b, which states that council policies should “*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*” The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)¹⁰. In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- minimising impacts on existing biodiversity and habitats;
- providing net gains in biodiversity and habitats, wherever possible;
- establishing coherent ecological networks that are more resilient to current and future pressures.

UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK’s response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government’s response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade.

Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK’s leading non-governmental bird conservation organisations listed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the 'Red', 'Amber' and 'Green' lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every five years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2021 (Stanbury et al, 2021), which provides an

⁹ HM Government (2021). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

¹⁰ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



up to date assessment of the conservation status of birds in the UK.

References

Protection of Badgers Act (1992). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/1992/51/contents>

Circular 06/2005 (2005). Government Circular: Biodiversity and geological conservation – statutory obligations and their impact within the planning system. Office of the Deputy Prime Minister, London. Available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf

Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”). Available at:
<http://jncc.defra.gov.uk/page-1373>

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”). Available at: <http://jncc.defra.gov.uk/page-1374>

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations”). Available at:
<http://jncc.defra.gov.uk/page-1379>

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at:
<https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

Countryside and Rights of Way (CRoW) Act (2000). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/2000/37/contents>

Defra (2011) Biodiversity 2020: A strategy for England’s wildlife and ecosystem services. Available at:
www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services.

Defra (2013) Progress Update. Available at: www.gov.uk/government/publications/biodiversity-2020-simple-guide-and-progress-update-july-2013.

Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 114, pp 723-747.

Natural Environment and Rural Communities (NERC) Act (2006). HMSO London. Available at:
http://www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf

National Planning Policy Framework (NPPF) (2021) Ministry of Housing Communities & Local Government. Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

Wildlife and Countryside Act (WCA) (1981). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/1981/69/contents>



APPENDIX 2 – Arun District Council Planning Policy

Table 1. Summary of Adopted Arun Local Plan 2011-2031.

Policy Number/Title	Policy Summary
ENV SP1 - Natural Environment	<p>Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites that are recognised for the species and habitats contained within them.</p>
ENV DM1 - Designated Sites of Biodiversity or Geological Importance	<p>a) Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity or Geological Importance or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Consideration will be given to the exact designated features present on the site, their scarcity/rarity and recognition of the protection offered by their existing status. Development on wildlife sites with the highest value will only be permitted exceptionally where the following can be demonstrated:</p> <ol style="list-style-type: none"> i. There is no alternative solution (which shall be adequately demonstrated by the developer). ii. There are reasons of public health or public safety or iii. There are benefits of primary importance to the environment or iv. There are imperative reasons of overriding public interest. <p>Notwithstanding the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.</p> <p>b) In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to;</p> <ol style="list-style-type: none"> i. The European, National or Local status and designation of the site; ii. The nature and quality of the site's features, including its rarity value; iii. The extent of any adverse impacts on the notified features of interest; iv. The need for compensatory measures in order to re-create remaining features of habitats on or off the site. <p>c) Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.</p>
ENV DM3 - Biodiversity Opportunity Areas	<p>Development shall:</p> <ol style="list-style-type: none"> a) Retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones b) Be designed in order to minimise disturbance to habitats <p>Development proposals that do not reasonably address opportunities for enhancing these through their design, layout and landscaping or access/management shall not be permitted. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified on the Policies Maps or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a properly conducted survey of the presence must be</p>



	<p>proposed within the planning permission.</p>
<p>ENV DM5 - Development and Biodiversity</p>	<p>Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not).</p> <p>Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.</p> <p>Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.</p>
<p>W SP1 - Water</p>	<p>Arun District Council will encourage water efficiency measures in order to protect the District's water resources and enhance the quality of the water environment which supports a range of habitats and ecosystems. Development will be encouraged to make active use of surface water as a design feature and permitted where it identifies measures to improve and enhance waterbodies, coastal habitats or provides additional flood relief.</p> <p>The Council will also support development that:</p> <ul style="list-style-type: none"> a) is appropriately located, taking account of flood risk and promotes the incorporation of appropriate mitigation measures into new development, particularly Sustainable Drainage Systems that reduces the creation and flow of surface water and improves water quality; 63 Water stressed areas - final classification (July 2013) b) reduces the risk to homes and places of work from flooding whilst increasing biodiversity; c) delivers a range of community benefits including enhancing the quality of life and providing greater resistance to the impact of climate change.



APPENDIX 3 – Great Crested Newt ‘Habitat Suitability Index’ Values

Table 2. HSI calculation for ponds assessed during the survey.

	Pond 1	
NGR	SU 91263 02177	
SI attribute	SI value	Notes
Location	1.00	SE England
Pond area	0.93	1,165m ²
Pond drying	1.00	Rarely
Water quality	0.33	Poor
Shade cover	0.20	100
Water-fowl	0.67	Minor
Fish presence	0.67	Possible
No. ponds	0.53	2
Terrestrial habitat	0.67	Moderate
Macrophytes	0.31	0%
HSI value	0.56	‘Average’ suitability



APPENDIX 4 – Reducing Impacts of Artificial Light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts to other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness.

Guidelines issued by the Bat Conservation Trust¹¹ should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist

¹¹ Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



and lighting professional determine there is a likely significant effect upon key bat habitat and features;

- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;
- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted
- Upward light ratio of 0% and good optical control

Further reading:

Buglife (2011) A review of the impact of artificial light on invertebrates.

Royal Commission on Environmental Pollution (2009) Artificial light in the environment. HMSO, London.

Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) Ecological Consequences of Artificial Night Lighting. Island Press. ISBN 9781559631297.



CPRE (2014) Shedding Light: A survey of local authority approaches to lighting in England. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: <https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011. Available at: <https://www.theilp.org.uk/resources/free-resources/>

Voigt, C.C., Azam, C., Dekker, J., Ferguson, J., Fritze, M., Gazaryan, S., Hölker, F., Jones, G., Leader, N., Lewanzik, D. and Limpens, H., 2018. *Guidelines for consideration of bats in lighting projects*. Unep/Eurobats. Available at: https://cdn.bats.org.uk/uploads/pdf/Resources/EUROBATSGuidelines8_lightpollution.pdf?v=1542109376

End.
