



SSEN Green Recovery Lot 1 Rownhams Substation

Ecological Impact Assessment



Site Overview:

- Freedom Reference Number: ES17I_22
- Location: M27, Southampton SO16 8AP
- Central OS Grid Reference: SU 38666 17496
- Client: Scottish and Southern Electricity Networks
- Freedom Contact: Andrew Hayway
- Validity period: 12-18 months from survey date

Summary / Recommendations

Summary

Freedom Professional Services - Environmental Land Management (ELM) was commissioned by Scottish and Southern Electricity Networks to undertake a Preliminary Ecological Appraisal of a proposed substation installation located at the services off the M27, Southampton SO16 8AP central grid reference SU 38666 17496 (see Appendix A). A subsequent Ecological Impact Assessment of the site has been undertaken to support a planning application for the proposals.

The term 'site' hereafter, refers to the substation footprint (refer to drawing NRWNPRI-FREPP-SL-XX-DR-E-0008). The site comprises an approximate total footprint area of 0.1123ha.. Habitats within this area consist of broadleaved woodland, scattered scrub, semi-improved grassland and a fence line. A separate area of 0.0395ha is allocated as a temporary works area compound immediately north of the site, habitats within this area consist of broadleaved woodland and amenity grassland (see Appendix F).

No Statutory designated sites were identified within a 1km radius of the site although the site falls within the impact risk zones of SSSI's, however, no potential pathways of impact are anticipated on the SSSIs identified within the desk top search area.

A section of the substation site falls within an area of priority deciduous woodland habitat. As impacts are unavoidable, compensation planting will be required. Four off-site locations within the landownership boundary have been identified for offsetting. Enhancements of the existing woodland surrounding the substation is also proposed for further offsetting.

A precautionary approach has been taken for recommended mitigation measures, compensation, and enhancement measures for the following: Invasive non-native species, [REDACTED] and other terrestrial mammals, bats, nesting birds, hazel dormice, reptiles and amphibians, including great crested newts.

Due to the scale of the proposals, it is considered that in the absence of mitigation the adverse effect will be of a local level for the assessed species and habitats.

Surveyed by	Thomas Bell BSc(Hons)	Survey Date	7 th December 2022
Surveyed by	Lawrence Armstrong BSc (Hons)		25 th March 2024
Checked by	Amie-Beth Sabin BSc (Hons) ACIEEM	Check Date	27 th March 2024
Authorised by	Simon Breeze BSc MCIEEM	Authorisation Date	27 th March 2024

1. Introduction and Methodology

Introduction - Scope of Survey

Freedom Professional Services - Environmental Land Management (ELM) was commissioned by Scottish and Southern Electricity Networks to undertake a Preliminary Ecological Appraisal of a proposed substation installation located at the services off the M27, Southampton SO16 8AP central grid reference SU 38656 17495 (see Appendix A). A subsequent Ecological Impact Assessment of the site has been undertaken to support a planning application for the proposals.

A Preliminary Ecological Appraisal walkover survey was undertaken on the 7th December 2022 to record the presence, likely presence, or absence of protected and priority habitats and species. A desk top study was also undertaken in conjunction with the Preliminary Ecological Appraisal (see Appendix B-D). An update survey was undertaken on 25th March 2024 due to updated detailed design drawings of the substation location.

The site comprises an approximate total area of 0.1123ha which forms the footprint of the proposed substation, habitats within this area comprise broadleaved woodland, scattered scrub, semi-improved grassland and a fence line. An area of 0.0395ha is allocated as a temporary works area compound immediately north of the site, habitats within this area consist of broadleaved woodland and amenity grassland (see Appendix E).

The scope of Ecological Impact Assessment was to establish baseline ecological conditions at the Site, determine the importance of ecological features which could be affected by the proposed scheme. Identify any likely significant impacts or effects of the proposed development on important ecological features. Highlight measures avoid or mitigate likely significant effects, identify any compensation measures required and indicate potential ecological enhancement measures that may be secured.

The recommendations in this report must be reviewed and updated by an ecologist if the proposed works are not completed within 12-18 months of the survey date.

Introduction - Proposed Works

The proposed works include the construction of a new substation, enclosed within a security fence with associated artificial unvegetated unsealed surfaces within the main site surrounding electrical equipment, a building containing the switchboards and associated cable installations. To facilitate the construction, a temporary compound will be utilised for equipment storage (see Appendix A).

Methodology

Zone of Influence

In accordance with current Ecological Impact Assessment guidance (CIEEM, 2018) ecological features that fall within a zone of influence have been included within the assessment of the impacts of the proposed works, which typically include the following:

1. Areas directly within the land take for the proposed development and access;

2. Areas which will be temporarily affected during construction;
3. Areas likely to be impacted by hydrological disruption; and
4. Areas where there is a risk of wider disbenefits including, but not limited to, any increase in air, water, or noise pollution; or visual or vibrational disturbance during construction and/or operation.

A desk top study comprising of a 1km radius search area and field survey of the site boundary has been used to assess the zone of influence with the proposals.

The Environmental Impact Assessment guidance also refers the geographical context of the importance of an ecological feature when assigning a level of value to species associated with the feature. For this assessment, the following geographic frame of reference is used:

- International - Including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites
- National - For example, sites designated at UK level, including Sites of Special Scientific Interest (SSSI)
- Regional - Habitats or populations of species of value at a regional level (i.e. South-west England)
- County - Designated sites, such as Wildlife Sites or habitats/species populations of value at a county
- Local - Habitats or species populations of value in a local context (i.e. within circa 1km)

Desk top study

A data search involved the compilation of ecological information relating to the site and surrounding area. The resources consulted included the following:

1. Statutory designated sites and biodiversity action plan (BAP) priority habitats within proximity of the site were identified using the Natural England/DEFRA web-based MAGIC database (www.MAGIC.gov.uk).
2. To ascertain protected species distribution and presence across the area, the National Biodiversity Network Atlas was consulted.
3. An environmental records centre data search was commissioned from Hampshire Biodiversity Information Centre.
4. The Natural England and Joint Nature Conservancy Council website was visited to obtain citation details of the statutory designated sites.
5. Ordnance Survey maps and aerial images of the site were examined online.

Site Survey

An extended Phase 1 Habitat Survey of the proposed site was undertaken within the site boundary, along with a search for evidence of, and potential for, protected and priority habitats and species. The ecological walkover was undertaken on the 7th December 2022 by Thomas Bell, Ecological Consultant, Freedom, Bachelor of Science with honours (BSc(Hons)) and Level 1 Great Crested Newt Licence holder (CL08).

A further ecological walkover of the site was carried out to inspect all areas within the new substation footprint. The site was visited on 25th March 2024 to carry out a search for evidence of, and potential for, protected and priority habitats and species by Lawrence Armstrong, Ecological Consultant, Freedom, Bachelor of Science with honours (BSc(Hons)), Level 2 Bat License (CL18) and Level 1 Great Crested Newt License (CL08) holder.

The survey was completed in accordance with best practice methodologies:

1. Joint Nature Conservation Committee (2003). Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough.
2. British Standards Institution (2013). BS42020: Biodiversity Code of Practice for Planning and Development. British Standards Institution, London.
3. CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
4. CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester

During the survey the following information was recorded:

1. Habitat types classified in accordance with standard Phase 1 habitat categories.
2. Dominant, notable and invasive, non-native plant species.
3. Direct evidence of protected and notable animal species.
4. Features of value for protected and notable animal species.

Where trees or buildings were identified on site a Preliminary Roost Assessment (PRA) was undertaken in conjunction with the extended Phase 1 Habitat Survey in accordance with best practice guidance:

1. Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.
2. Mitchell-Jones, A. and McLeish A. (2004). Bat Workers Manual (3rd Edition). Joint Nature Conservation Committee, Peterborough.
3. Mitchell-Jones, A. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

The survey involved systematically inspecting any structures for evidence of bat activity in the form of live and dead bats, droppings, feeding remains, perch abrasions, characteristic staining from urine and marks from grease secretions. The survey also focused on identifying roosting features of value to bats such as crevices and perches and their associated access points visual assessments were aided by binoculars.

Ecological Impact Assessment objectives

The survey objectives are listed as follows:

1. Identify all relevant statutory designated areas of conservation importance and features of ecological significance within the site and within a 1km radius of the site.
2. Broadly categorise habitat types within the site in accordance with standard Phase 1 Habitat Survey techniques establishing the ecological baseline at the site.
3. Assess the potential for the presence of protected species and species of principal conservation importance within the site and likely impact radius.
4. Provide recommendations for further surveys, if required.
5. Accurately assess the potential ecological impact of the proposed development on important ecological features, in the absence of mitigation, including cumulative impacts.
6. Inform the design of a mitigation strategy, if possible, to minimise potential impacts on protected species and habitats.
7. Advise of any ecological compensation requirements to offset residual impacts.
8. Indicate potential ecological enhancement measures that may be secured by the proposed scheme.

Constraints

Phase I Habitat Surveys may be conducted at any time of year, but results will vary depending on the time of year they are carried out. The timing of the survey in this case, March, was such that the majority of vegetation though still emerging, could be identified.

The Phase I Habitat Survey was of an 'Extended' type, in the sense that the opportunity was taken whilst on site to look for evidence that certain protected species might be present, associated with the particular habitats in the area around the site that could be affected by the works. The investigations that were conducted are described in the methodology section along with any constraints (seasonal or otherwise) that might have had a bearing on the efficacy of searches for signs of particular species.

At the time of writing no further protected species presence or likely absence surveys have been undertaken, it is acknowledged that this is a gap in the data in accordance with the Ecological Impact Assessment guidance, however, given the scale of the development and habitats present, protected species considered likely present have been considered and a precautionary approach to any mitigation has been applied during the assessment.

2. Baseline Information

Designated Sites

A 1km radius search of the proposed substation identified the following designated sites (see Appendix B and D) No Statutory designated sites were identified within a 1 km radius of the site, however the site falls within the impact risk zones of SSSI's:

Site designation	Site Name	Description	Distance from works	Potential impact Y / N
Sites of Special Scientific Interest (SSSI) Impact Risk Zones*	Baddesley Common and Emer Bog	https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1003510&SiteName=Baddesley%20common&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=	N/A	N/A
	River Test	https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S2000170&SiteName=river%20test&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=	N/A	N/A
	Lower Test Valley	https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1001282&SiteName=Lower%20Test%20Valley&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=	N/A	N/A
	Southampton Common	https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1001624&SiteName=southampton%20common&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=	N/A	N/A
Sites of Importance for Nature Conservation (SINCs)	Nightingale Wood & Outlier	Ancient semi-natural Woodland, woodland where there is a significant element of ancient semi-natural woodland surviving or supporting some characteristics of ancient woodland and wet woodlands.	650m	N
	Aldermoor Copse, Nursling and Rownhams	Ancient semi-natural woodland.	500m	N
	St. John's Church, Rownhams	Agriculturally unimproved grasslands which are not of recent origin, areas of heathland vegetation including mosaics of dwarf shrub heath, acidic grassland, valley mire and scrub and designated for its qualifying species assemblage criteria.	450m	N
	Greenhill Copse	Ancient semi-natural woodland.	450m	N
	Rownhams Meadow	Agriculturally unimproved grasslands which are not of recent origin and fens, flushes, seepages, springs and inundation grasslands of floodplains that support a flora and fauna of less-	970m	N

		improved wet conditions (seasonal or permanent) and designated for its qualifying species assemblage criteria.		
	Rownham's Plantation	Other woodland where there is a significant element of ancient semi-natural woodland surviving or supporting some characteristics of ancient woodland and pasture woodland.	600m	N
	Clam's Copse	Ancient semi-natural woodland.	850m	N

*SSSI Impacts Risk Zone are buffers around SSSIs, SACs, SPAs and Ramsar sites (England) where and if a proposal falls into one or more of identified categories the LPA should consult Natural England on the likely risks. For this proposal the following is relevant:

Infrastructure: Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

Protected Species

Summary of protected species records within a 1km radius of the site (table continues).

Common name	Scientific name	EU protected	UK protected	NERC Act 2006	Red birds	LBAP2009
Bats						
Brown Long-eared Bat	Plecotus auritus	*	*	*		
Common Pipistrelle	Pipistrellus pipistrellus	*	*			
Nathusius's Pipistrelle	Pipistrellus nathusii	*	*			
Natterer's Bat	Myotis nattereri	*	*			
Noctule Bat	Nyctalus noctula	*	*	*		
Serotine	Eptesicus serotinus	*	*			
Soprano Pipistrelle	Pipistrellus pygmaeus	*	*	*		
Western Barbastelle	Barbastella barbastellus	*	*	*		*
Birds						
Barn Owl	Tyto alba		*			
Bearded Tit	Panurus biarmicus		*			*
Black Redstart	Phoenicurus ochruros		*		*	*
Brambling	Fringilla montifringilla		*			
Cetti's Warbler	Cettia cetti		*			*
Common Scoter	Melanitta nigra		*	*	*	
Crossbill	Loxia curvirostra		*			*
Dotterel	Charadrius morinellus		*		*	
Fieldfare	Turdus pilaris		*		*	
Firecrest	Regulus ignicapilla		*			*

Common name	Scientific name	EU protected	UK protected	NERC Act 2006	Red birds	LBAP2009
Golden Oriole	<i>Oriolus oriolus</i>		*		*	
Goshawk	<i>Accipiter gentilis</i>		*			*
Green Sandpiper	<i>Tringa ochropus</i>		*			
Greenshank	<i>Tringa nebularia</i>		*			
Hen Harrier	<i>Circus cyaneus</i>		*	*	*	
Hobby	<i>Falco subbuteo</i>		*			*
Honey-buzzard	<i>Pernis apivorus</i>		*			*
Hoopoe	<i>Upupa epops</i>		*			
Kingfisher	<i>Alcedo atthis</i>		*			
Leach's Storm-petrel	<i>Hydrobates leucorhous</i>		*			
Little Ringed Plover	<i>Charadrius dubius</i>		*			*
Marsh Harrier	<i>Circus aeruginosus</i>		*			*
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>		*			*
Merlin	<i>Falco columbarius</i>		*		*	
Osprey	<i>Pandion haliaetus</i>		*			
Peregrine	<i>Falco peregrinus</i>		*			*
Red Kite	<i>Milvus milvus</i>		*			*
Redwing	<i>Turdus iliacus</i>		*		*	
Spoonbill	<i>Platalea leucorodia</i>		*			
Whimbrel	<i>Numenius phaeopus</i>		*		*	
Wood Sandpiper	<i>Tringa glareola</i>		*			
Woodlark	<i>Lullula arborea</i>		*	*		*
Mammal						
Hazel Dormouse	<i>Muscardinus avellanarius</i>	*	*	*		*
Pine Marten	<i>Martes martes</i>		*	*		
Reptiles						
Adder	<i>Vipera berus</i>		*	*		
Common Lizard	<i>Zootoca vivipara</i>		*	*		
Grass Snake	<i>Natrix helvetica</i>		*	*		
Slow-worm	<i>Anguis fragilis</i>		*	*		

3. Site survey results - Phase 1 habitat types

Habitats below were identified on site within the substation footprint and temporary works compound (See Appendix E Site Survey Plan, including Target Note (TN) ecological features).

Phase 1 habitat type	Site description
A1.1.1 – Broadleaved woodland - semi-natural	<p>Broadleaved woodland was identified within the site. Species included: silver birch, sycamore, field maple, hazel, English oak and ash. (Photo 5, TN1).</p> <p>The trees within the woodland on site were considered to vary in age but are mostly immature or semi-mature, particularly in the northern section of the woodland. Scattered scrub was found intermittently throughout the understory, entangled within fallen deadwood and loose claddings of ivy were identified on a number of trees.</p> <p>The current temporary works compound north of the substation includes a small section of the broadleaved woodland located to the west; species and condition were similar to that of the woodland within the footprint of the substation.</p>
A2.2 – Scrub - scattered	<p>Scattered scrub was identified within the footprint of proposed substation on the northern edge of the broadleaved woodland. Species included bramble, ash, nettle and thistle (Photo 6, TN2). Scattered scrub was also found intermittently throughout the understory of the woodland.</p>
B2.2 – Neutral grassland - semi-improved	<p>Semi-improved grassland within the footprint of proposed substation, situated within the verge north of both the scattered scrub and broadleaved woodland. Species included: cocks-foot grass, hairy willow herb, herb-Robert and creeping buttercup (Photo 7, TN3).</p>
J1.2 – Cultivated/disturbed land - amenity grassland	<p>An area of amenity grassland is located to the southwest of the existing parking area of the M27 service station. The current temporary works compound will impact this location. Species present included: common daisy, dandelion, white clover, cleavers, Yorkshire-fog grass and cocks-foot grass (Photo 8, TN4).</p>
J2.4 – Fence	<p>A broken post and wire fence was identified through the woodland, approximately 10m south of the northern boundary of the substation footprint. The fence line encloses the scrub and semi-improved grassland within the substation footprint, separating the area from the rest of the woodland. (Photo 9).</p>

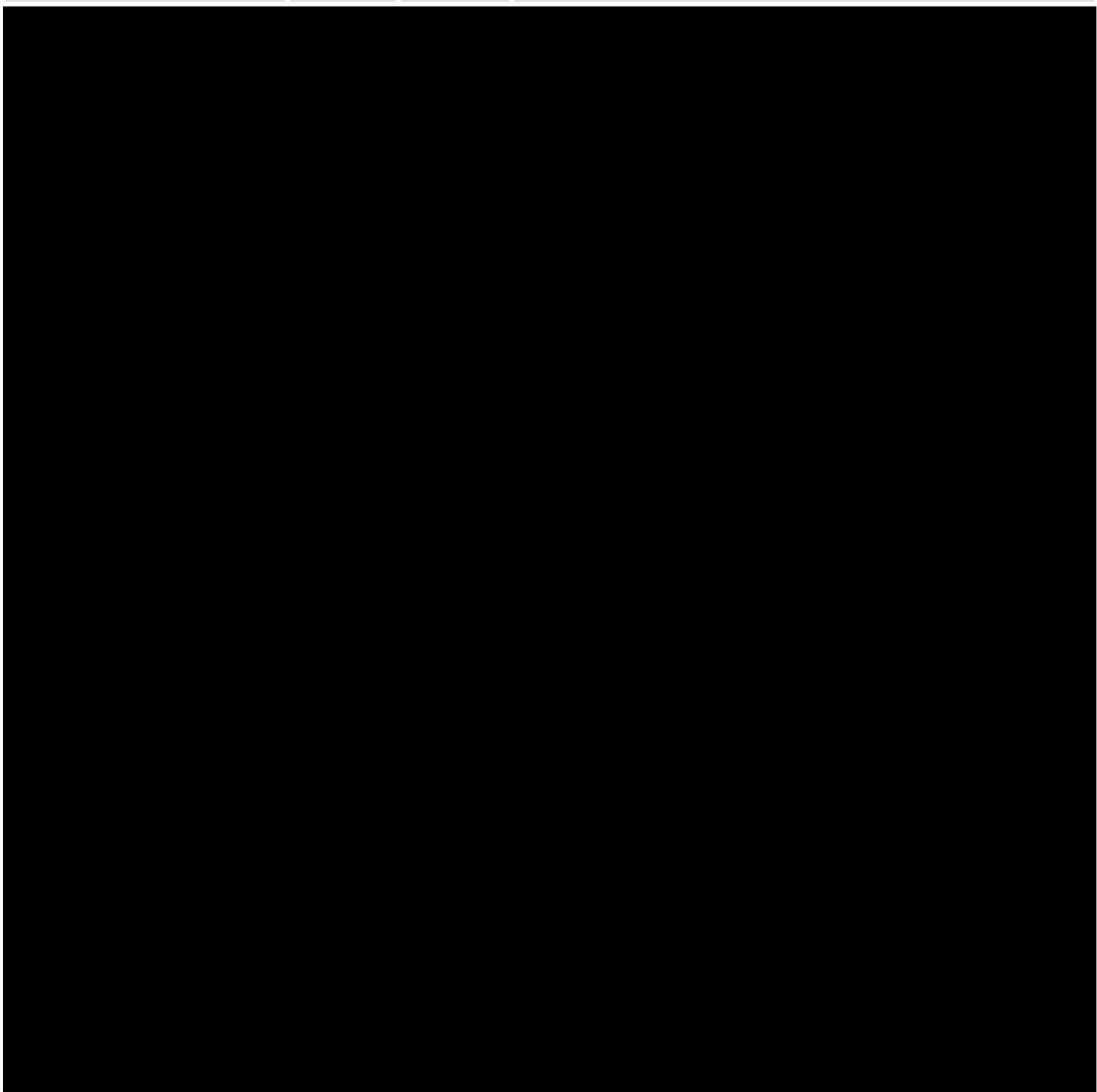
Site survey results - Protected species and habitats

The table below indicates the potential for protected species and habitats identified following the site survey.

Protected Species or habitat Field survey results: Confirmed Presence – CP Potential Present – PP Unlikely Presence – UP Negligible – NP	Code	Consider Further	Presence and assessment (e.g. fields signs present or desk study revealed presence in area and / or suitable habitat present)
Priority deciduous woodland	CP	Yes	<p><u>Desktop study</u> An assessment of aerial imagery suggests the site is comprised of extensive areas of broadleaved woodland throughout the footprint of the proposed new substation. The desk study indicates that the woodland is designated as priority deciduous woodland habitat (Appendix D).</p> <p><u>Site survey</u> The site survey confirmed extensive areas of broadleaved woodland are found throughout the footprint of the proposed new substation.</p>
Reptiles and Amphibians including Great crested newts	PP	Yes	<p><u>Desktop study</u> The data search did not return any records of GCN within 1km radius search area.</p> <p>There are no ponds within 250m of the site. An assessment of aerial imagery suggests the site offers only terrestrial habitat connected to the wider landscape.</p> <p><u>Site survey</u> There are no ponds within or immediately adjacent to the site.</p> <p>Suitable terrestrial habitat for amphibians and reptiles within the proposed works areas was identified in the form of broadleaved woodland, scrub and semi-improved grassland. These habitats are considered to provide suitable hibernation, foraging and commuting habitat for amphibians and reptiles.</p>
Bats	UP	Yes	<p><u>Desktop study</u> The data search returned one record of bats species within 1km radius search area. The MAGIC database revealed one granted European protected species</p>

Protected Species or habitat Field survey results: Confirmed Presence – CP Potential Present – PP Unlikely Presence – UP Negligible – NP	Code	Consider Further	Presence and assessment (e.g. fields signs present or desk study revealed presence in area and / or suitable habitat present)
			<p>licence applications within 1km radius of the search area for bat species including Common Pipistrelle.</p> <p><u>Site survey</u> No potential roost features (PRF's) were identified associated with trees within the works areas.</p> <p>Suitable bat foraging and commuting habitat was identified comprised of broadleaved woodland, scrub, and semi-improved grassland.</p>
Nesting birds	PP	Yes	<p><u>Desktop study</u> The data search returned multiple records of five bird species within 1km radius search area which are listed on schedule 1 of the wildlife and countryside.</p> <p><u>Site survey</u> Nesting behaviour in the form of territory calling was exhibited by goldcrest <i>Regulus regulus</i> during the survey from a group of conifers (<i>Cypressus</i> sp.) within 10m of the proposed substation southeast boundary, Photo 1.</p> <p>An old robin <i>Erithacus rubecula</i> nest was found on a 1.2m high internal timber and wire fence within 10m of the east site boundary, Photo 2.</p> <p>Habitats identified on site comprised of broadleaved woodland, and scrub vegetation have the potential to support nesting birds between March-August inclusive.</p>
Hazel dormice	PP	Yes	<p><u>Desktop study</u> The data search returned one record of hazel dormice within 1km radius search area.</p> <p>An assessment of aerial imagery suggests the site is comprised of suitable habitat for dormice connected to the wider landscape.</p> <p><u>Site survey</u> The understory of the woodland within the proposed substation footprint was found to be suboptimal for dormice due to the lack of dense cover within the scrub</p>

Protected Species or habitat Field survey results: Confirmed Presence – CP Potential Present – PP Unlikely Presence – UP Negligible – NP	Code	Consider Further	Presence and assessment (e.g. fields signs present or desk study revealed presence in area and / or suitable habitat present)
			layer however, the tree canopy does provide some nesting, foraging and commuting habitat, Photos 5 and 6.



Invasive non-native species	CP	Yes	<u>Desktop study</u> The data search did not return any records of these species within 1km radius search area.
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Protected Species or habitat Field survey results: Confirmed Presence – CP Potential Present – PP Unlikely Presence – UP Negligible – NP	Code	Consider Further	Presence and assessment (e.g. fields signs present or desk study revealed presence in area and / or suitable habitat present)
			<p><u>Site survey</u> Rhododendron species were identified scattered amongst the broadleaved woodland within the footprint of the proposed substation (Photo 10).</p>
Otters, water vole and white-clawed crayfish	NP	No	<p><u>Desktop study</u> The data search did not return any records of these species within 1km radius search area.</p> <p><u>Site survey</u> No suitable associated habitats were present on site.</p>

4. Site photographs

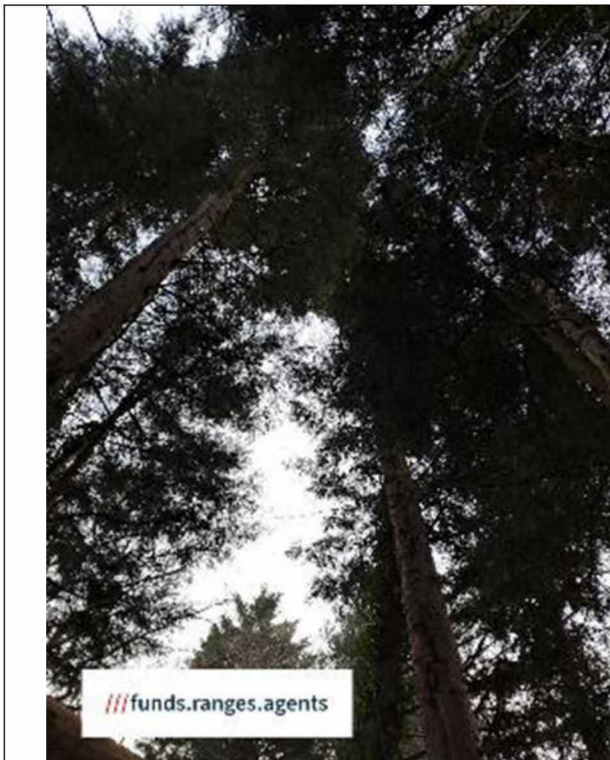


Photo 1. Group of conifers with bird nesting potential.

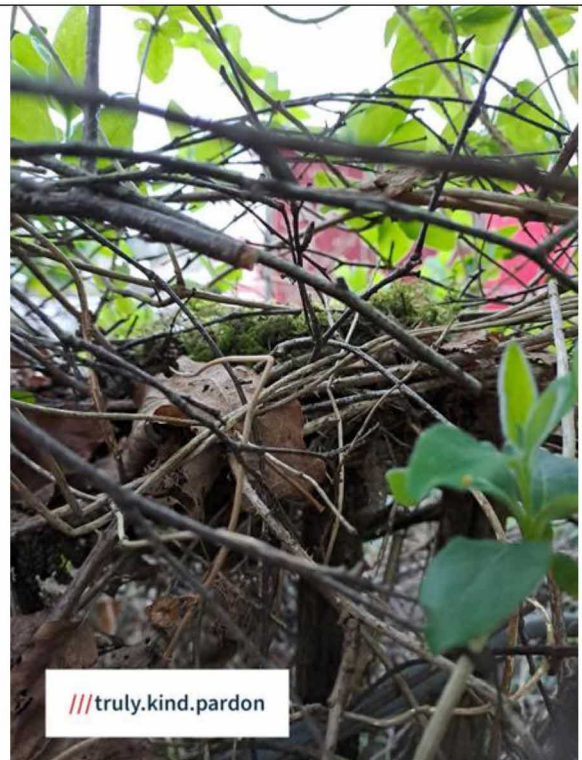


Photo 2: Unoccupied robins nest on a timber and wire fence. Likely last years nest.

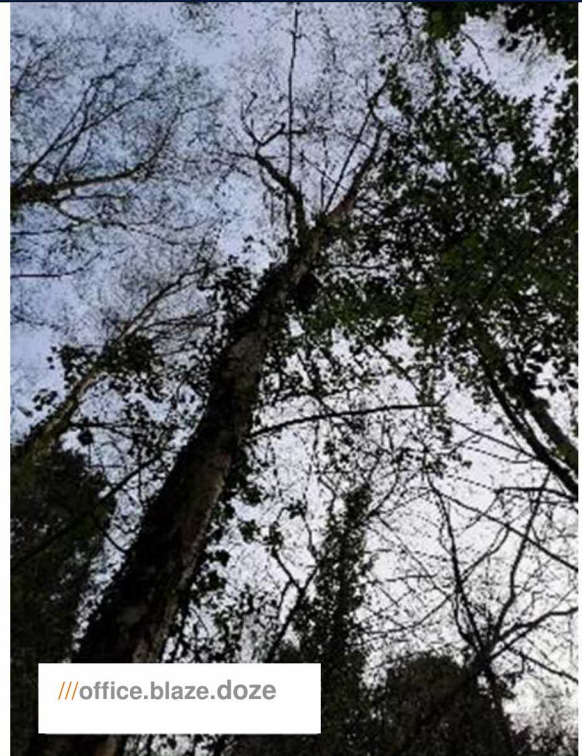
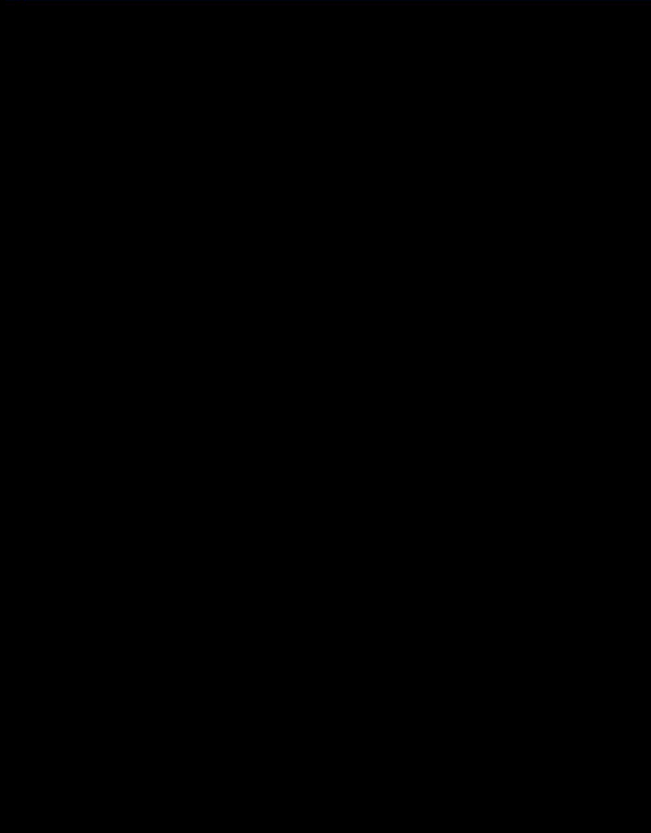


Photo 4: Grey squirrely drey within 10m of the east substation boundary.



Photo 5. The semi-natural broadleaved woodland within the footprint of the proposed substation (TN1).



Photo 6. The scattered scrub within the footprint of the proposed substation (TN2).



Photo 7. The semi-improved grassland within the footprint of proposed substation (TN3).



Photo 8. The amenity grassland within the temporary works compound (TN4).



Photo 9. The boundary fence line within the broadleaved woodland in the footprint of the proposed substation.



Photo 10. The Rhododendron species identified within the broadleaved woodland in the footprint of the proposed substation.

5. Assessment of Effects - Constraints, Recommendations and Compensation

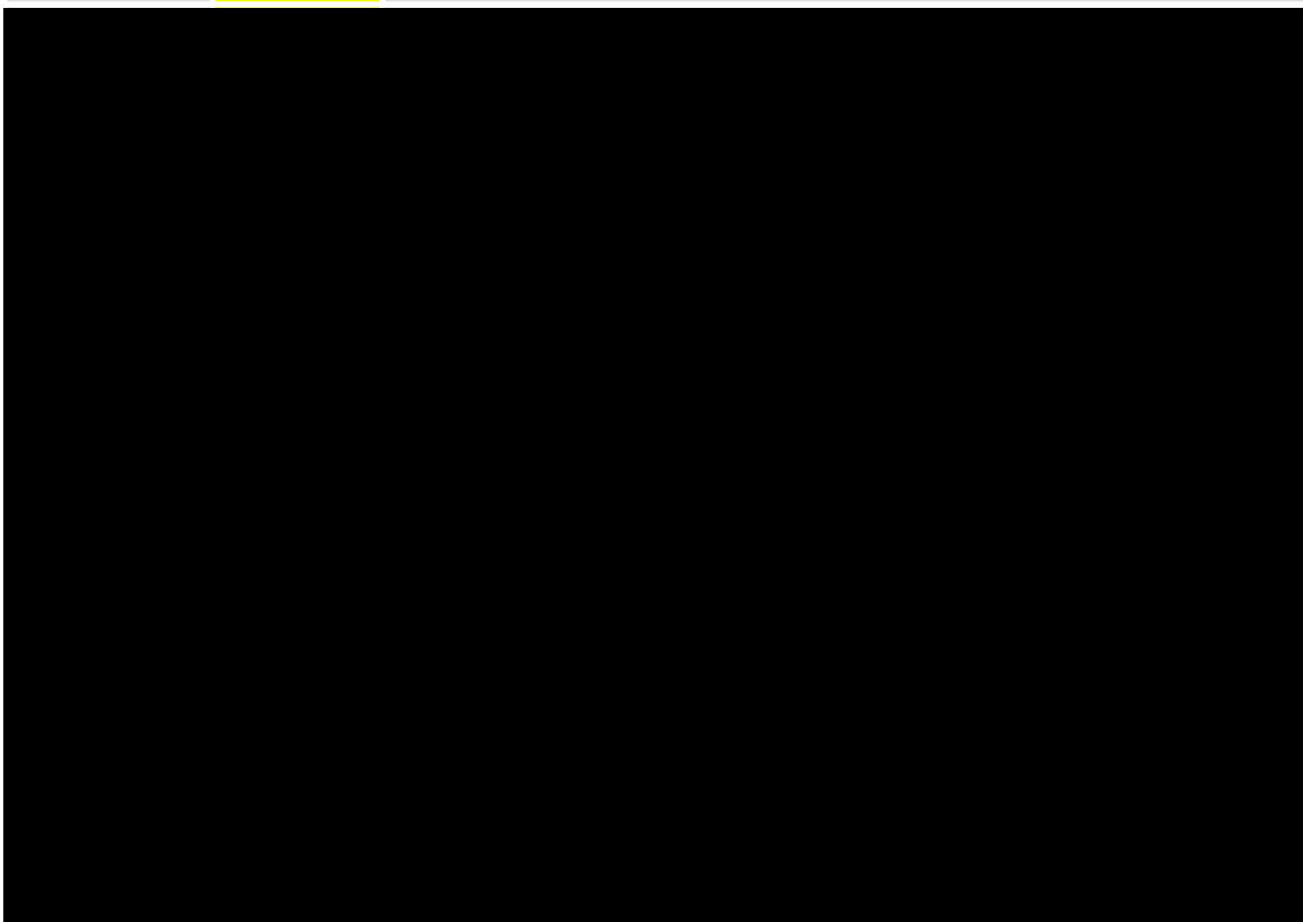
The table below indicates the effects of the proposal on the ecological features identified during both the desk top search and site survey. Recommended mitigation measures are provided below, however it is considered that this can be secured by planning condition at detailed design stage, in accordance with BS42020:2013, by submission of a detailed Construction Environmental Management Plan (CEMP).

The submission of a Landscape and Ecology Management Plan (LEMP) will detail measures for the establishment and long-term management of newly created habitats that will compensate for any losses identified in during the Ecological Impact Assessment as well as recommended biodiversity enhancements. This can also be secured by planning condition at detailed design stage.

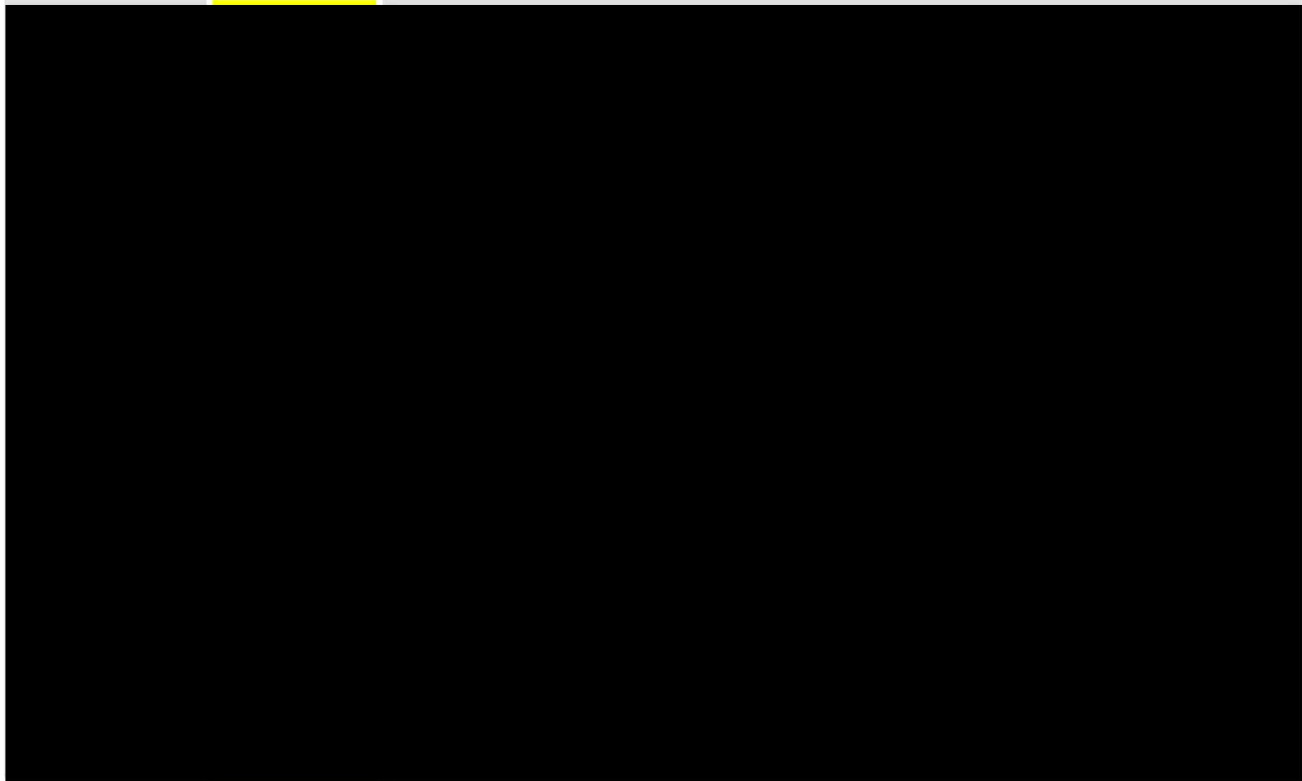
Feature	Constraint	Recommendation
Statutory Designated sites	None	<p><u>Predicted effects</u></p> <p>No potential pathways of impact are anticipated on the SSSIs identified within the desk top search area. The site falls within impact risk zones only however the proposals do not meet the criteria of listed considered to risk impact on the designated sites.</p>
Priority deciduous woodland	High	<p><u>Predicted effects</u></p> <p>At present groundwork excavations to facilitate the works will require tree removal works broadleaved woodland designated as priority deciduous woodland habitat. It is also considered the proposals will impact the root protection zone and associated root systems of trees surrounding the substation boundary. Furthermore, un-mitigated damage to the roots of retained trees at the boundaries may cause weakness and associated disease to the impacted trees, and even long-term death and failure.</p> <p>This direct loss of habitat is anticipated to impact the integrity of priority woodland habitat in its current condition.</p> <p>However, due to the scale of the proposals it is considered that in the absence of mitigation the adverse effect will be of a local level.</p> <p><u>Mitigation Measures</u></p> <p>Works to trees including roots systems, shall be undertaken in accordance with British Standards 3998 (2010). Retention of all trees where possible or mitigated for by planting up of native species at a 2:1 ratio for any trees lost.</p> <p>An updated Arboricultural survey should be undertaken prior to works commencing. Where potential impact from the proposal occurs, retained trees should be protected through an arboricultural protection plan, containing fenced root protection areas, compliant with BS5837 (2012). Un-mitigated damage to the roots may cause weakness and associated disease to the impacted trees, and even long-term death and failure.</p>

Feature	Constraint	Recommendation
		<p>New tree planting within four off-site locations (still within the landownership boundary) will be planted up with native locally appropriate species (See Appendix F). Area 1 will extend and connect to the existing deciduous woodland to the east. As areas 2-4 are isolated within the landscape they will be planted with a dense arrangement of scattered trees to increase the area of urban trees.</p> <p><u>Enhancement Measures</u></p> <p>The existing broadleaved woodland adjacent to the site shall be enhanced with additional native locally appropriate species tree planting in accordance with a biodiversity enhancement plan, managed and monitored in accordance with a LEMP (Appendix G).</p>
Phase 1 habitat	High	<p><u>Predicted effects</u></p> <p>To facilitate the proposals, the 0.1385ha footprint of the substation will require the removal of broadleaved woodland, scattered scrub, semi-improved grassland and a fence line. These habitats will be replaced with bare ground and hardstanding surfaces associated with the substation.</p> <p>The 0.0395ha forming the temporary works area compound comprised of broadleaved woodland and amenity grassland will also be impacted by the works. However, post construction this area will be reverted back to grassland.</p> <p>In the absence of mitigation, there will be a significant effect on habitats from permanent loss of vegetation onsite. However, due to the scale of the proposals it is considered that in the absence of mitigation the adverse effect will be of a local level.</p> <p><u>Mitigation Measures</u></p> <p>It is recognised that there is insufficient area within the redline boundary to adequately compensate for the habitat lost and therefore compensations offsetting will be made within the wider ownership boundary with new tree planting within four off-site locations planted up with native locally appropriate species (See Appendix F).</p> <p><u>Enhancement Measures</u></p> <p>To further offset losses, the existing broadleaved woodland adjacent to the site shall be enhanced with additional native locally appropriate species tree planting in accordance with a biodiversity enhancement plan, managed and monitored in accordance with a LEMP (Appendix G).</p>

Feature	Constraint	Recommendation
Invasive non-native species	Low	<p><u>Predicted effects</u></p> <p>As Rhododendron species were identified scattered amongst the broadleaved woodland within the footprint of the proposed substation appropriate mitigation is required to prevent accidental or deliberate distribution of the plant. The effect of the proposals will be of a local level in that management actions are required to remove invasive non-native species.</p> <p><u>Mitigation Measures</u></p> <p>All excavated material containing invasive non-native plant species material should be removed from site to licensed landfill as controlled waste as appropriate to prevent the distribution of contaminated material across the site or wider landscape.</p> <p><u>Enhancement Measures</u></p> <p>The existing broadleaved woodland adjacent to the site shall be enhanced by undertaking a monitoring visit removing any identified invasive non-native species established.</p>



Feature	Constraint	Recommendation
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Bats	None	<p><u>Predicted effects</u></p> <p>No substantial PRF's were identified associated with trees within the works areas, the proposals are therefore not anticipated to impact roosting bats.</p> <p>However, vegetation clearance requirements associated with the broadleaved woodland and scattered scrub will result in the loss of foraging habitat for bats. Furthermore, any additional lighting associated with the substation may impact foraging and commuting bats. Therefore, it is considered that in the absence of mitigation the adverse effect to bats will be of a local level.</p> <p><u>Mitigation Measures</u></p> <p>Direct loss of foraging habitat for bats will be mitigated for by compensation offsetting within the wider ownership boundary with new tree planting within four off-site locations planted up with native locally appropriate species (See Appendix F).</p> <p>To further offset losses, the existing broadleaved woodland adjacent to the site shall be enhanced with additional native locally appropriate species tree planting in accordance with a biodiversity enhancement plan (Appendix G).</p> <p>To avoid adverse impacts to foraging and commuting bats any external lighting scheme associated with the construction works and operational substation shall be designed to avoid illumination of the woodland and</p>
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Feature	Constraint	Recommendation
		<p>kept minimal, featuring lighting principles provided within Bats and Artificial Lighting in the UK Guidance Note 08/18.</p> <p><u>Enhancement Measures</u></p> <p>The existing broadleaved woodland adjacent to the site shall be enhanced with additional native locally appropriate species tree planting and the installation of five standard bird boxes in accordance with a biodiversity enhancement plan, managed and monitored in accordance with a LEMP (Appendix G).</p>
Nesting birds	Moderate	<p><u>Predicted effects</u></p> <p>Works within 10m of the group of conifers to the southeast of the site, have the potential to disturb nesting goldcrest, Photo 1.</p> <p>Works are proposed within 10m of a robin nest identified during the site walkover which could become active again in which case, clearance and construction works have the potential to disturb the nest, Photo 2.</p> <p>Vegetation clearance requirements associated with the broadleaved woodland and scattered scrub will result in the loss of nesting bird habitat. Clearance works may result in killing and/or injuring nesting birds without appropriate mitigation. Due to the scale of the proposals, it is considered that the adverse effect on birds will be of a local level.</p> <p><u>Mitigation Measures</u></p> <p>Where works will directly remove tree or scrub between 1st March to the 31st August inclusive in any given year, a nesting bird search by qualified ecologist shall be undertaken.</p> <p>The nesting bird check should be performed in the 24 hour period prior to the works in suitable weather conditions to maximize the likelihood of recording birds with no rain or strong wind.</p> <p>Suitable nesting habitats should be observed for 30 minutes for evidence of breeding bird behaviour from a discrete vantage point. If full access or visibility is not possible, the initial observation period should be extended to 60 minutes.</p> <p>Direct loss of trees will be mitigated for by planting up of native species at a 2:1 ratio to provide compensation habitat for birds within the wider ownership boundary with new tree planting within four off-site locations planted up with native locally appropriate species (See Appendix F).</p> <p><u>Enhancement Measures</u></p> <p>To further offset losses, the existing broadleaved woodland adjacent to the site shall be enhanced with additional native locally appropriate</p>

Feature	Constraint	Recommendation
		<p>species tree planting and the installation of five standard bird boxes in accordance with a biodiversity enhancement plan, managed and monitored in accordance with a LEMP (Appendix G).</p>
Hazel dormice	High	<p><u>Predicted effects</u></p> <p>Vegetation clearance requirements associated with the broadleaved woodland will result in the loss of suitable dormouse habitat. Clearance works may result in disturbing, killing and/or injuring dormouse without appropriate mitigation. Due to the scale of the proposals, it is considered that the adverse effect on dormouse will be of a local level.</p> <p><u>Mitigation Measures</u></p> <p>Any vegetation clearance in areas of woodland will be facilitated through a supervised non-licenced reasonable method statement comprising of the follow sensitive clearance protocol:</p> <p>In October when dormice are still active but avoiding the breeding and hibernation seasons. A licenced dormouse ecologist shall supervise the work area checking the site for nests immediately before clearance and, if needed, during clearance.</p> <p>All work shall be carried out using handheld tools only. If in the unlikely event, an above-ground nest is found it shall be left in situ and no vegetation between it and the adjacent undisturbed habitat shall be removed until dormice have gone into hibernation (December).</p> <p>Then where required between December and March only, when dormice are hibernating at ground level, under the supervision of a licenced dormouse ecologist, the vegetation will be cut down to a height of 30cm above ground level using hand tools. The remaining stumps and roots will be left until the following mid-April / May before final clearance to allow any dormouse coming out of hibernation to disperse to suitable adjacent habitat.</p> <p>No vegetative clearance will be permitted between June and September inclusive when females have dependent young.</p> <p>Direct loss of trees will be mitigated for by planting up of native species at a 2:1 ratio to provide compensation habitat for dormice within the wider ownership boundary with new tree planting within four off-site locations planted up with native locally appropriate species (See Appendix F). However, only area 1 will extend and connect to the existing deciduous woodland to the east and be accessible to dormice.</p>

Feature	Constraint	Recommendation
		<p><u>Enhancement Measures</u></p> <p>The existing broadleaved woodland adjacent to the site shall be enhanced with additional native locally appropriate species tree planting in accordance with a biodiversity enhancement plan, managed and monitored in accordance with a LEMP (Appendix G).</p> <p>To further offset losses of refuge and hibernation potential habitat, a total of 10 Schwegler 2KS common dormouse nest boxes, or similar, with an anticipated lifespan of at least 10 years, will be installed in the retained woodland adjacent to the site. The boxes will be sited in trees that are connected to other areas of adjacent suitable habitat with a dense understorey with isolated trees being avoided.</p>
<p>Reptiles and Amphibians including Great crested newts</p>	<p>Low</p>	<p><u>Predicted effects</u></p> <p>Vegetation clearance requirements associated with the broadleaved woodland, scattered scrub and semi-improved grassland will result in the loss of hibernation, refuge and foraging and commuting habitat for reptiles and amphibians. Clearance works may result in killing and/or injuring of reptiles and/or amphibians without appropriate mitigation. However, due to the scale of the proposals, it is considered that the adverse effect on reptiles and amphibians will be of a local level on common species only.</p> <p><u>Mitigation Measures</u></p> <p>To ensure that no reptile and/or amphibian, including great crested newt, are injured or killed. Any vegetation clearance in areas of woodland, scrub, semi-improved should be facilitated through sensitive clearance protocols:</p> <ul style="list-style-type: none"> In the unlikely event that Great crested newts are encountered at any time during works, then operations must stop and an ecologist be contacted for further advice. <p>Clearance should be undertaken between the 1st March and the 31st October during suitable weather conditions with temperatures above 10°C and no rain or strong wind.</p> <p>In suitable weather and temperature conditions, the suitable vegetation should be cut in two phases; initially reducing the height to approximately 10cm, and then cutting the remaining stems to ground level.</p> <p>Vegetation should be cleared toward areas of retained and suitable reptile habitat and at least 24 hours must elapse between cuts to enable reptiles to disperse.</p> <p>If reptiles and/or amphibians are encountered during the strimming process, vegetation removal works must cease until the individuals have dispersed to adjacent areas of suitable habitat. If the individuals</p>

Feature	Constraint	Recommendation
		<p>do not disperse when exposed further advice should be sought from a suitably qualified ecologist. Once the suitable vegetation within the area has been cut, it should be maintained at a height of less than 10cm until the onset and during the construction phase.</p> <p>The piles of rubble and branches, which may need to be removed to facilitate the development should be carefully deconstructed and removed by hand only between 1st March and the 31st October during suitable weather and temperatures conditions supervised by a suitably qualified ecologist.</p> <p>In the unlikely event that reptiles and/or amphibians are encountered works must cease until reptiles have dispersed to adjacent areas of suitable habitat outside of the operational area. If reptiles and/or amphibians do not disperse when exposed or remain within operational areas, construction personnel must seek further advice from a suitably qualified ecologist who will remove reptiles and/or amphibians from the construction area by careful hand capture and immediate translocation to suitable grassland areas. Construction personnel should not attempt to move reptiles or amphibians.</p> <p>Any excavations are to be backfilled on the same day as excavation or checked immediately prior to backfilling. A means of escape, such as a wooden ramp, will be provided in all excavations that cannot be backfilled on the same day or alternatively, all excavations should be well-covered with plywood.</p> <p>No piles of loose construction materials/arising, which will require later removal from the site, should be created during works. Any such materials generated will be kept on hardstanding surfaces, stored on pallets and/or removed immediately from the site or checked prior to being removed to reduce habitation by reptiles and/or amphibians.</p> <p><u>Enhancement Measures</u></p> <p>To offset losses of refuge and hibernation potential habitat associated with the woodland, three log piles will be established measuring at least 4m long, 2m wide and 1m high situated within the retained woodland in accordance with a biodiversity enhancement plan (Appendix G).</p>
Otter, water vole, and white-clawed crayfish	None	All features unlikely present or considered absent. No further mitigation actions are required. In the unlikely event that species featured are encountered during works, then works are to stop and an ecologist to be contacted immediately for further advice regarding appropriate mitigation measures.

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Appendices

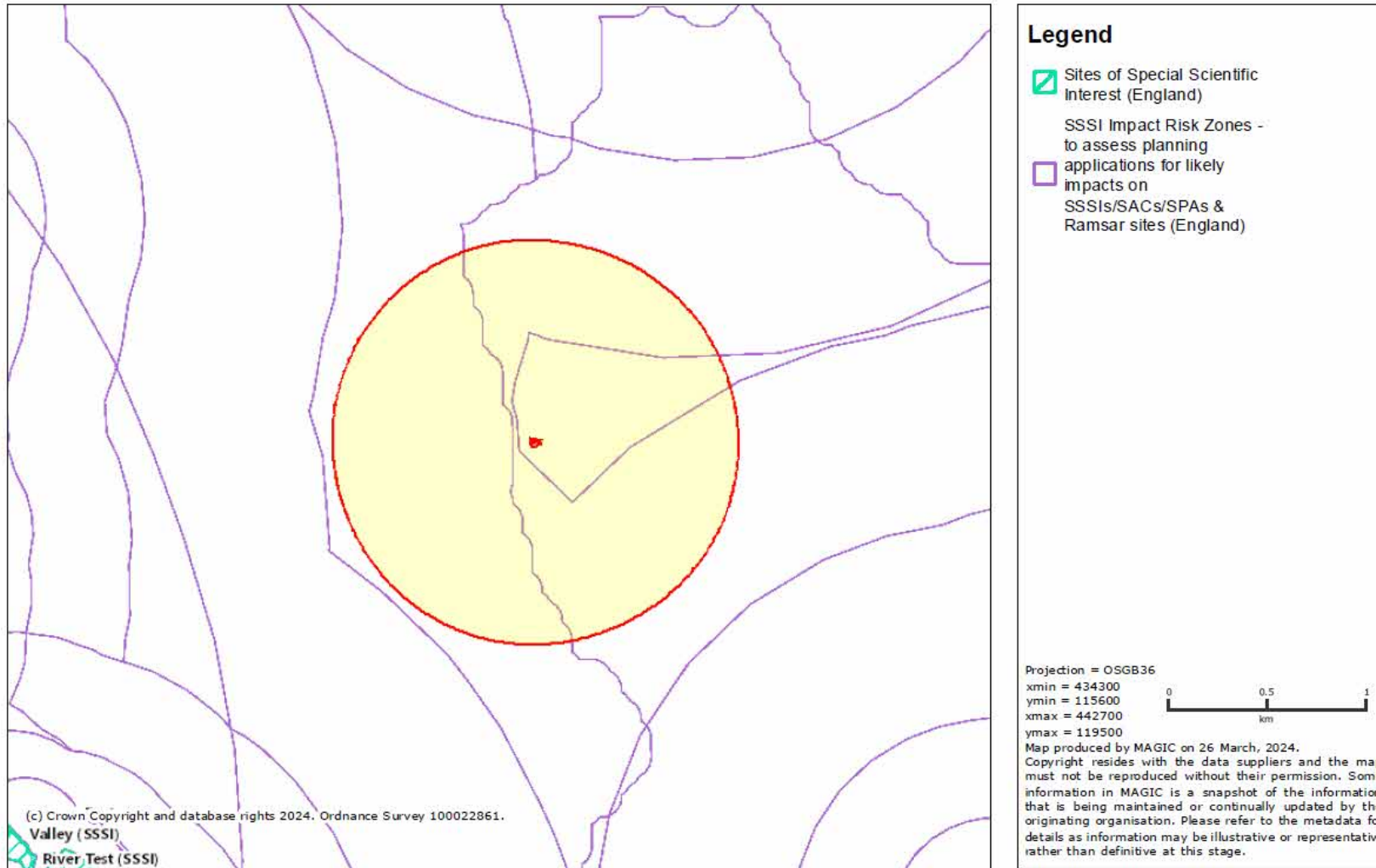
Appendix A: Overview Substation Proposal Plan



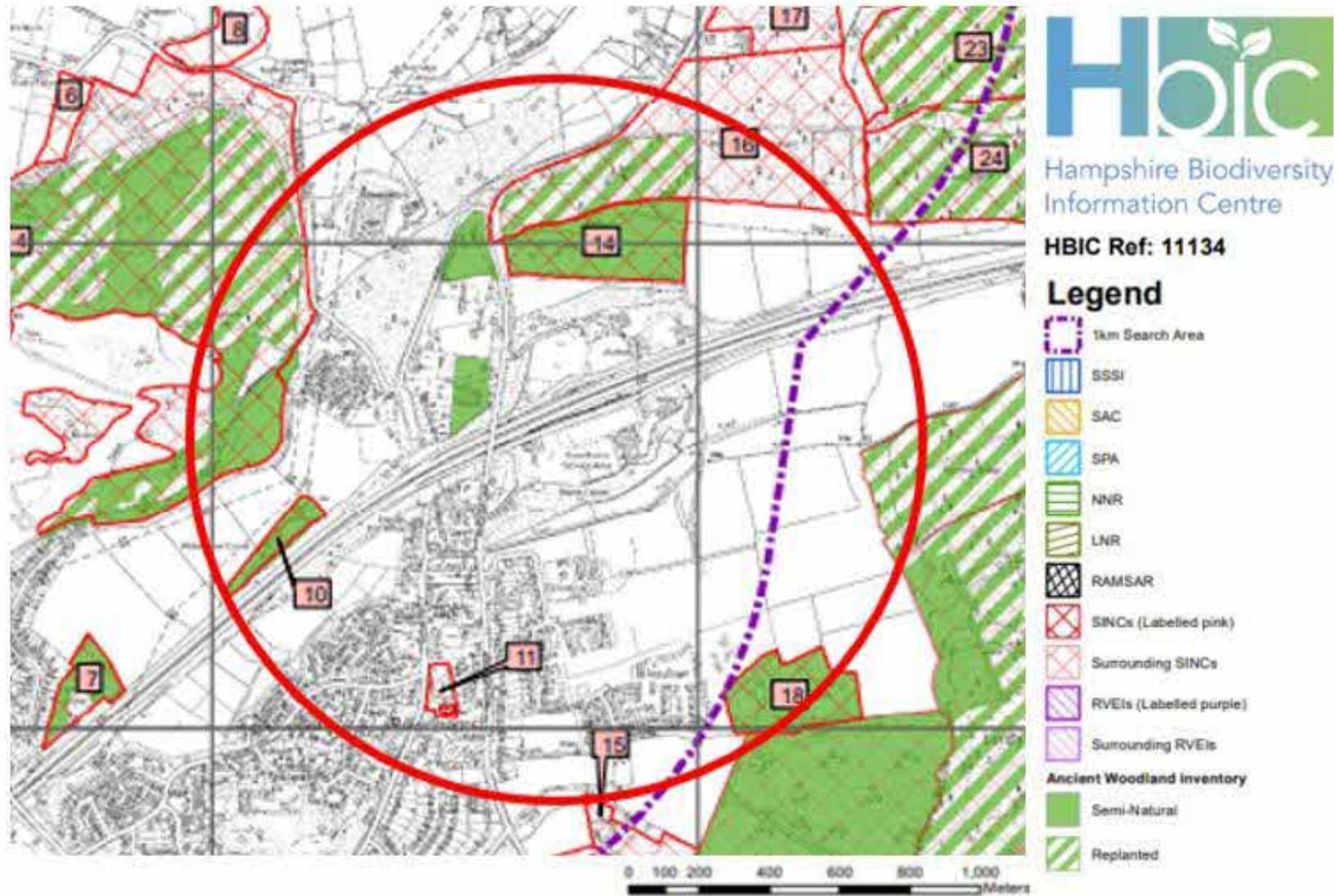
Appendix B Baseline Information: Designated Site Plan (MAGIC) –1km of centralised location

MAGiC

Designated Sites Plan



Appendix C Baseline Information: Non-Statutory Designated Site Plan –1km of centralised location





Priority Habitat Plan



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Legend

Ancient Woodland (England)

-  Ancient and Semi-Natural Woodland
-  Ancient Replanted Woodland
-  Priority Habitat Inventory - Deciduous Woodland (England)
-  Forestry Commission Legal Boundary (England)

Projection = OSGB36
xmin = 434200
ymin = 115700
xmax = 442500
ymax = 119600



Map produced by MAGiC on 26 March, 2024.
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Appendix D Baseline Information: Priority Habitat Plan – sites within the substation location



Appendix F: Off-site Habitat Compensation Plan







Relevant Legislation

The following is a summary of wildlife legislation and planning policy which affords protection to plants and animals and seeks to conserve, enhance and restore biodiversity:

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (SI No. 2017/1012) are the principal means by which the European Habitats Directive is transposed in England and Wales.

The Regulations provide for the designation and protection of a network of 'European Sites' termed Natura 2000, the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

These Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.7.1992, p.7) ("the Habitats Directive").

These Regulations consolidate the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (S.I. 2007/1842) with subsequent amending instruments and make minor modifications reflecting changes to related legislation. The instruments being consolidated by these Regulations made, amongst things, provision for implementing Council Directive 2009/147/EC on the conservation of wild birds (OJ No. L20, 26.01.2010, p.7.) and Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (OJ No. L206, 22.7.92, p.7) in relation to marine areas where the United Kingdom has jurisdiction beyond its territorial sea. The Regulations make provision in relation to the offshore marine area, offshore marine installations and certain ships and aircraft. The "offshore marine area" is defined in regulation 2(1).

Regulation 43 relates to the protection of European protected species listed under Schedule 2 of the Regulations. Taken together it is an offence to undertake the following acts with regard to European Protected Species:

1. deliberately capture, injure or kill any wild animal of a European Protected Species
2. deliberately disturb animals of any such species in such a way as to be likely to:
 1. impair their ability to survive, breed, rear or nurture their young, hibernate or migrate, or
 2. affect significantly the local distribution or abundance of the species to which they belong
3. deliberately take or destroy the eggs of such an animal
4. damage or destroy a breeding site or resting place of such an animal

The disturbance offence is generally taken to refer to a discernable effect at population level and biogeographic level, rather than simply to an individual animal. However, in certain circumstances the disturbance of one individual animal may have population level effects.

The Regulations also make it an offence (subject to exceptions) to deliberately pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5.

However, the actions listed above can be made lawful through the granting of licences (European Protected Species Licence) by the appropriate authorities (Natural England in England). Licences may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority has determined that the following regulations are satisfied:

1. the works under the licence are being carried out for the purposes of ‘preserving public health and public 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’
2. there is ‘no satisfactory alternative’
3. the action ‘will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in their natural range’

You don’t need to include a reasoned statement to show that the 3 licensing tests can be met: where bats and their roosts will be affected by:

1. repairs and maintenance
2. roof replacements, loft conversions and extensions
3. renovations of existing domestic dwellings and associated structures, such as garages
4. housing developments of less than 1 hectare, including:
 1. existing buildings and associated structures that may need to be demolished before redevelopment takes place (whether domestic dwellings or other types of buildings)
 2. barn conversions for domestic dwellings (this doesn’t include conversions for commercial use, such as holiday lets)

To apply for a licence, the following information is required:

1. the species concerned
2. the size of the population at the site (note this may require a survey to be carried out at a particular time of the year)
3. the impact(s) (if any) that the development is likely to have upon the populations
4. what measures can be conducted to mitigate for the impact(s)

The Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 (as amended) is the principal piece of UK legislation relating to the protection of wildlife. It consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain.

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally kill, injure, or take any wild bird or their eggs or nests. Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Special Protection Areas (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

The Act makes it an offence (subject to exceptions) to intentionally kill, injure, or take, possess, or trade in any wild animal listed in Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals listed in Schedule 6.

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

The Countryside and Rights of Way Act 2000

The Countryside and Rights of Way Act 2000 (CRoW) was passed to provide additional levels of protection for wildlife whilst also strengthening the protection afforded to Sites of Special Scientific Interest.

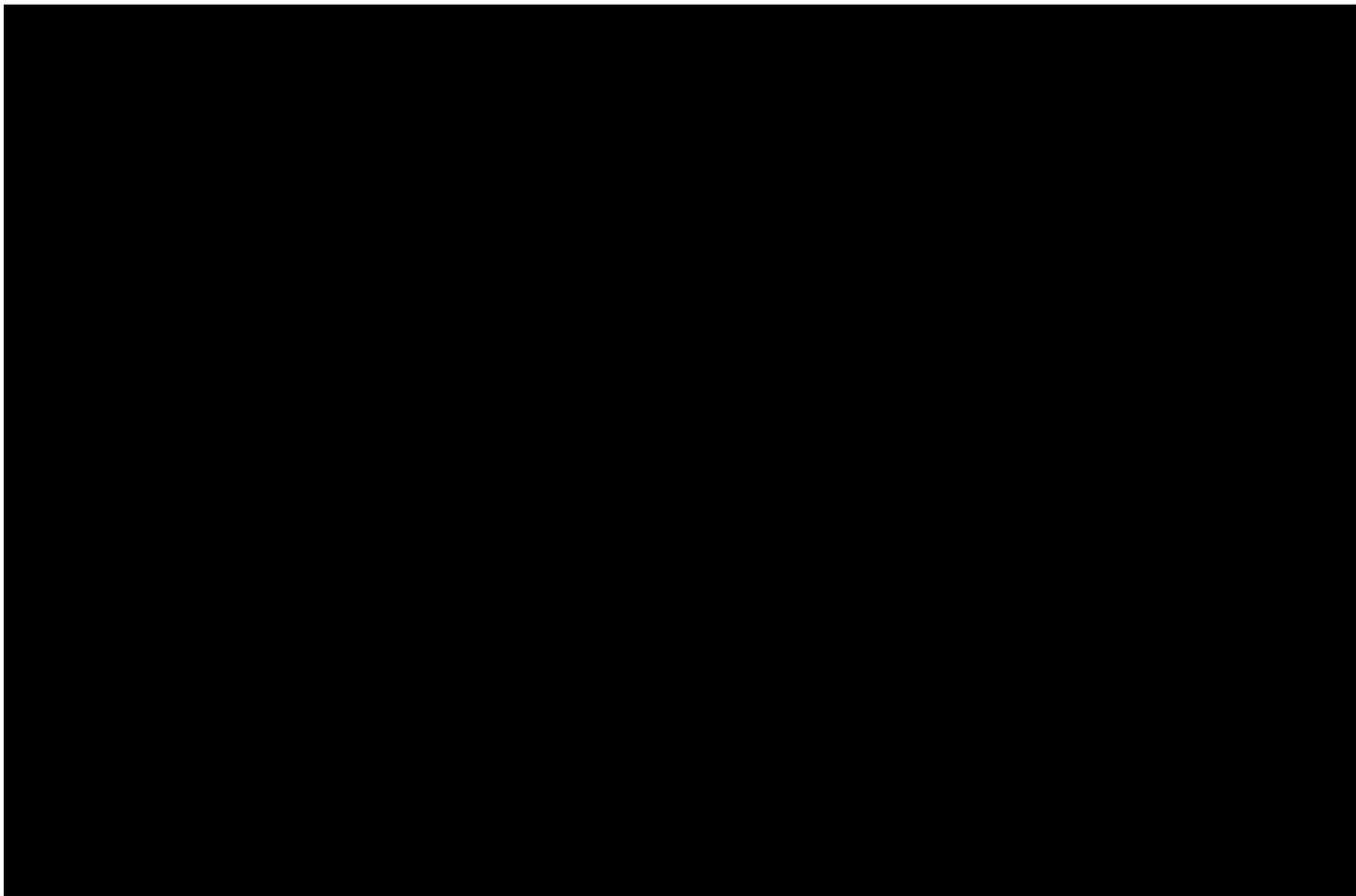
Schedule 12 of the Act amends the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', create a new offence of 'reckless' disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities Act 2006 (NERC) is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government policy.

It was created to make provision in connection with wildlife, Sites of Special Scientific Interest, National Parks and the Broads; to amend the law relating to rights of way; to make provision as to the Inland Waterways Amenity Advisory Council; to provide for flexible administrative arrangements in connection with functions relating to the environment and rural affairs and certain other functions; and for connected purposes.

Section 40 of NERC carries an extension of the earlier CRoW Act biodiversity duty to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity. Section 41 requires the Secretary of State, as respects England, to publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. The updated S41 list, published in August 2010, identified 56 habitats and 943 species of principal importance.



The Wild Mammals (Protection) Act 1996

The Wild Mammals (Protection) Act 1996 makes it an offence for any person to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

The Animal Welfare Act 2006

Prior to the Animal Welfare Act 2006, people only had a duty to ensure that an animal didn't suffer unnecessarily. The new Act keeps this duty but also imposes a broader duty of care on anyone responsible for an animal to take reasonable steps to ensure that the animal's needs are met. This means that a person has to look after the animal's welfare as well as ensure that it does not suffer. The Act says that an animal's welfare needs include:

1. a suitable environment (how it is housed)
2. a suitable diet (what it eats and drinks)
3. the ability to exhibit normal behaviour patterns
4. any need it has to be housed with, or apart from, other animals
5. protection from pain, suffering, injury and disease

With regards to development, this may have implications when translocations of animals are proposed. As such, care must be taken to ensure that any receptor sites are suitable for the species in terms of habitat and carrying capacity.

The Hedgerows Regulations 1997

The Hedgerows Regulations 1997 were introduced to protect hedgerows of importance from destruction. However, the legislation does not apply to any hedgerow which is within or marking the boundary of the curtilage of a dwelling house.

For the Regulations to be applicable, the hedgerow must be at least 20m in length or, if less than 20m, it must meet another hedgerow at each end. A hedgerow is deemed to be important if it is more than thirty years old and meets at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

If a hedgerow which qualifies under the Regulations is to be removed, the landowner must contact the local planning authority in writing by submitting a hedgerow removal notice. The local planning authority then has a period of 42 days to decide whether or not the hedgerow meets the importance criteria of the regulations.

Biodiversity Action Plans

Biodiversity Action Plans (BAPs) set out actions for the conservation and enhancement of biological diversity at various spatial scales. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs).

The UK BAP was the UK's response to the 1992 Convention on Biological Diversity in Rio de Janeiro. Following a review in 2007 a list of 1150 priority species and 65 priority habitats has been adopted, which are given a statutory basis for planning consideration under Section 40 of the NERC Act 2006.

Red Data Books

British Red Data Books (RDB) are an additional method for classifying the rarity of species and are often seen as a natural progression from Biodiversity Action Plans.

RDB species have no automatic legal protection (unless they are protected under any of the legislation previously mentioned). Instead, they provide a means of assessing rarity and highlight areas where resources may be targeted. Various categories of RDB species are recorded based on the IUCN criteria and the UK national criteria based on presence within certain numbers of 10x10km grid-squares (<http://www.jncc.gov.uk/page-3425>). As with Biodiversity Action Plans, where possible, steps should be taken to conserve RDB species which are to be affected by development.

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