VOLUME II:
TECHNICAL APPENDICES

6.1 Terrestrial Ecology and Ornithology Technical Appendix

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GLOSSARY OF TERMS

Term	Definition
Amber List species of Birds of Conservation Concern (BoCC)	Amber List species of BoCC are bird species that have unfavourable conservation status in Europe, are of international importance, are experiencing moderate declines (25-49%) in the UK (breeding population, breeding range, non-breeding populations), are rare breeders or non-breeders, and/or are localised in the UK, and/or had historical population declines during 1800-1995 but are recovering.
Ecological Impact Assessment (EcIA)	An assessment of the potential impacts of a project upon the ecological baseline of a defined area.
Habitat Suitability Index (HSI)	The HSI scores a water body for its suitability to support great crested newts across ten habitat characteristics; from these ten parameters of suitability a geometric mean is calculated, giving an overall numerical index ranging between zero and one. A score of near zero indicates unsuitable habitat for great crested newts, whilst a score near one represents optimal habitat.
Important Ecological Features (IEFs)	Ecological features requiring a specific assessment within EcIA. Ecological features can be important for a variety of reasons (e.g. quality and extent of designated sites or habitats, habitat/species rarity, etc.) (Ref. 6.1).
Ramsar Convention	Convention on Wetlands of International Importance held at Ramsar in Iran 1971
Red Data Book	A list of threatened, vulnerable or rare British species.
Red List species of BoCC	Red List species of BoCC are bird species in the UK that are globally threatened, had historical population declines in the UK during 1800-1995, and/or had severe declines (at least 50%) of breeding populations and/or breeding ranges in the UK over last 25 years.
Study area	The geographical extent for which ecological data exists and has been obtained to produce this ecological baseline.
Survey area	The geographical extent over which a particular field survey has taken place.
Zone of Influence (ZoI)	The area over which ecological features may be affected by the biophysical changes caused by a proposed project and associated activities (Ref. 6.1).

LIST OF ABBREVIATIONS

Abbreviation	Term
AONB	Area of Outstanding Natural Beauty
Amec	Amec Foster Wheeler (now Wood Group)
Arcadis	Arcadis Consulting (UK) Limited
BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
Birds Directive	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds; hereafter referred to as the 'Birds Directive'
BoCC	Birds of Conservation Concern
BTO	British Trust for Ornithology
CIEEM	Chartered Institute of Ecology and Environmental Management
CSZ	Core Sustenance Zone
CWS	County Wildlife Site
EC	European Community
EcIA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESC	East Suffolk Council
ha	Hectares
Habitats Directive	Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora; hereafter referred to as the 'Habitats Directive'
HRA	Habitat Regulations Assessment
HSI	Habitat Suitability Index
IEF	Important Ecological Feature
JNCC	Joint Nature Conservation Committee
KRS	Key Reptile Site
km	Kilometre
LNR	Local Nature Reserve
m	Metre
MAGIC	Multi-Agency Geographical Information for the Countryside
mppn	Mean passes per night
MS	Monitoring Station
NERC Act	Natural Environment and Rural Communities Act 2006
NKS	National Key Site
NNR	National Nature Reserve

Abbreviation	Term
NVC	National Vegetation Classification
RDB	Red Data Book
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SBIS	Suffolk Biodiversity Information Service
SCDC	Suffolk Coastal District Council
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWT	Suffolk Wildlife Trust
VP	Vantage Point
W&CA	Wildlife and Countryside Act
ZoI	Zone of Influence

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EXECUTIVE SUMMARY

The baseline ecological conditions were assessed within habitat or species assemblage-specific Zones of Influence (Zol) for the Sizewell B Relocated Facilities Development Site (hereafter referred to as the 'Proposed Development') and study area. For this Appendix the application site ('the Site') is defined as the areas from which the Sizewell B facilities are to be removed, together with the land that will be used to construct the new facilities. The ecological baseline has specifically considered designated sites, plants and habitats, invertebrates, amphibians, reptiles, birds, bats and other terrestrial mammals. Badgers are reported in a separate confidential report to protect the locations of setts.

A Zol of 5km was assigned for statutory designated sites, and a Zol of 2km was assigned to non-statutory designated sites. Plants and habitats, invertebrate, amphibian (excluding great crested newt), reptile and other terrestrial mammal species assemblages were considered within a 200m Zol, while birds, bats and great crested newts were considered within a 500m Zol.

Desk study data from the Suffolk Biodiversity Information Service (SBIS) were obtained for notable species of conservation concern within the Site and their relevant Zols. A range of species considered to be typical of the habitats present within these areas was identified. Extensive survey work carried out by Wood Group (formerly Entec and Amec Foster Wheeler) and Arcadis Consulting (UK) Limited (Arcadis) on the EDF Energy Nuclear Generation Limited, herein referred to as 'EDF Energy (NGL)', Sizewell Estate between 2007 and 2016, as well as survey data from Corylus Ecology, Galloper Wind Farm Ltd, The Ecology Consultancy, Royal Haskoning DHV and Suffolk Wildlife Trust (SWT) supported the findings of the desk study. These surveys indicated the presence of primarily widespread and common species, typical of the habitats present within the Site and the Zol.

Eight statutory designated sites (one Ramsar, three Special Protection Areas (SPA), one Special Area for Conservation (SAC) and three Sites of Special Scientific Interest (SSSI)) were identified within 5km of the Site, including Sizewell Marshes SSSI immediately adjacent to the western boundary of the Site (many of these designations overlap). Eight non-statutory designated County Wildlife Sites (CWS) were identified within 2km of the Site.

Based on the desk-based review and field surveys, the Site was found to support a limited assemblage of plants, invertebrates, birds, bats and other terrestrial mammals typical of the habitats present. The Site also supports reptile populations which contribute to the nationally important reptile assemblage present within the EDF Energy (NGL) Sizewell Estate, which qualifies as a Key Reptile Site (KRS). At least nine species of bat were recorded within the Site and/or the Zol. Surveys identified (with the exception of common and soprano pipistrelle) generally low levels of bat activity, although this did include the nationally rare barbastelle (*Barbastella barbastellus*) which radio-tracking surveys confirmed to be roosting in trees within the Grimseys area of Sizewell Marshes SSSI, outside the Site.

Outside of the Site boundary, but within the Zol, Sizewell Marshes SSSI supports nationally important invertebrate and breeding bird populations as well as a range of nationally important habitats including fen meadow and reedbed (cited interest features). In addition, while not a cited interest feature, Sizewell Marshes together with Minsmere forms a National Key Site (NKS) for water vole (*Arvicola amphibius*). Otter (*Lutra lutra*) have also been recorded using Sizewell Marshes throughout the year.

To ensure a robust Ecological Impact Assessment (EcIA) process, species and habitats of conservation interest and/or legally protected or designated species and habitats have been assessed to determine whether or not they would qualify as Important Ecological Features (IEFs) as defined in the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines on EcIA (Ref. 6.1). In addition, habitats and species have been assessed in accordance with the standard Environmental Impact Assessment (EIA) methodology used elsewhere within the Environmental Statement (ES).

The CIEEM guidelines (Ref. 6.1) define IEFs based on their nature conservation importance as well as the legal status afforded to them; in particular, where there is the potential for a breach in the relevant legislation as a result of the Proposed Development. This baseline report focuses on those IEFs that have been assessed as being sufficiently important (in nature conservation terms) to be a material consideration in the planning decision. The ecological features that qualify purely based on legislative considerations are discussed in less detail and are addressed separately in the EcIA.

Based on these criteria, the following species/habitats within the Zol of the Site have been identified as IEFs:

- Sizewell Marshes SSSI and its cited interest features is an IEF under the CIEEM guidelines (Ref. 6.1) and of high importance following the EIA-specific assessment methodology;
- Coronation Wood is an IEF under the CIEEM guidelines (Ref. 6.1) and of low importance following the EIA-specific assessment methodology.
- The reptile assemblage is an IEF under the CIEEM guidelines (Ref. 6.1) and of medium importance following the EIA-specific assessment methodology;
- The bat assemblage is an IEF under the CIEEM guidelines (Ref. 6.1) and of low importance following the EIA-specific assessment methodology; and
- The nesting and wintering bird assemblage of Sizewell Marshes SSSI (including marsh harrier and wintering wildfowl forming part of the Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI population) is an IEF under the CIEEM guidelines (Ref. 6.1) and of high importance following the EIA-specific assessment methodology.

1. INTRODUCTION

1.1 Purpose of Appendix

1.1.1 EDF Energy Nuclear Generation Limited[1] (hereafter referred to as EDF Energy (NGL)) is proposing the construction of replacement facilities within the existing Sizewell power station complex, and to the south-west of this location, followed by the demolition and removal of existing facilities which are currently located to the north and west of the existing Sizewell B Station (from here on referred to as the Proposed Development). For this Appendix the application site ('the Site') is defined as the areas from which the Sizewell B facilities are to be removed, together with the land that will be used to construct the new facilities, this being the area that falls within the red line boundary illustrated on **Figure 1.2** within **ES Volume I: Chapter 1 Introduction**. The location of the existing facilities to be demolished is illustrated on **Figure 3.1** and the location of the replacement facilities are illustrated on **Figure 3.4** within **ES Volume I: Chapter 3 Proposed Development.**

1.1.2 The proposed site is located on the Suffolk coast between the coastal towns of Aldeburgh and Southwold, partly within an area of high landscape and ecological sensitivity. The site is located within an Area of Outstanding Natural Beauty (AONB) and is in close proximity to the Minsmere to Walberswick Heath and Marshes Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Special Scientific Interest (SSSI); the Sandlings SPA; the Outer Thames Estuary SPA; Sizewell Marshes SSSI; and Leiston to Aldeburgh SSSI.

1.1.3 A detailed description of the site and the Proposed Development is provided in **ES Volume I: Chapter 3 Proposed Development**. The proposed works will include the relocation of a number of facilities as detailed below;

- Outage Store to be located within the Sizewell B station perimeter fence, south of the Sizewell B turbine hall;
- Outline Development Zone to provide for the relocation of the administration, storage, welfare and canteen facilities to be located within the Sizewell B Station perimeter fence;
- Laydown Area at the southern end of Coronation Wood;
- Replacement Car Park at the northern end of Coronation Wood;
- Training Centre at the northern end of Coronation Wood;
- Visitor Centre at the northern end of Coronation Wood;
- Western Access Road to the south and west of Coronation Wood; and
- Outage Car Park at the northern end of Pillbox Field with associated vehicular and pedestrian access.

[1] EDF Energy Nuclear Generation Limited is a subsidiary of the EDF Group which operates eight nuclear power stations in the UK, including Sizewell B.

1.1.4 To carry out a robust Ecological Impact Assessment (EcIA) of the Proposed Development for the Environmental Impact Assessment (EIA)/ES, it is first necessary to set out a detailed ecological baseline, describing the existing conditions for the habitats and species that could be affected by the proposals. It has therefore been necessary to assimilate technical data from survey work undertaken by Wood Group (formerly Entec and Amec Foster Wheeler) pre-2012 and by Arcadis Consulting Limited UK (formerly called Hyder Consulting, and hereafter referred to as 'Arcadis') post-2012, as well as from desk study, and to interpret this information for the purposes of the assessment.

1.1.5 This Appendix to the **ES Volume I: Chapter 6 Terrestrial Ecology and Ornithology** therefore summarises and presents not only the methodologies employed in carrying out the desk studies and field surveys, as well as the results of this work, but also evaluates the ecological receptors that could potentially be affected. This then forms the basis of the impact assessment carried out in **ES Volume I: Chapter 6 Terrestrial Ecology and Ornithology**.

1.1.6 The legislation, baseline, assessment, mitigation and monitoring relating to badgers has been reported within separate **ES Volume II: Appendix 6.2** (confidential) to protect the locations of their setts.

1.2 Structure of this Report

1.2.1 This Appendix describes the baseline conditions for the species and habitats within the Zone of Influence (ZoI[2]), as defined by the Chartered Institute of Ecology and Environmental Management (CIEEM) (Ref. 6.1) of the Proposed Development footprint and its immediate surroundings.

1.2.2 Within this chapter the following terms are used to describe the biological data:

- Desk study – this refers to any third-party biological data that has been collected. For example, data held by Suffolk Biodiversity Information Service (SBIS) and the Suffolk Wildlife Trust (SWT).
- Field data – this refers to data collected pre- and post-2012 by Wood Group, Arcadis, Corylus Ecology, Galloper Wind Farm Ltd, The Ecology Consultancy and Royal Haskoning DHV entirely or partially within the Site and/or the relevant ZoI.

1.2.3 The remainder of this Report is set out as follows:

1.2.4 **Section 2** discusses the Legislative Framework to designated sites and legally protected and notable species and habitats.

1.2.5 **Section 3** establishes the Site boundary, ZoI(s), study area and survey area for the Site.

[2] The ZoI is defined as the area over which ecological features may be affected by the biophysical changes caused by a proposed project and associated activities.

1.2.6 **Section 4** sets out the approach and methodology used for obtaining the desk study information and field data used to inform the assessment, as well as the results of this data acquisition. The full details of the methodologies employed are provided in **Annex 6.2**, while the full results of this survey work are provided in **Annex 6.3**. Details of the desk study information acquired is presented in **Annex 6.4**, whilst the various reports associated with field data are presented in **Annex 6.5** and **Annex 6.6**.

1.2.7 Finally, **Section 5** brings together all this information into a detailed consideration of the baseline conditions for the ecological features and defines the Important Ecological Features (IEF) within the ZoI of the Site potentially affected by the Proposed Development. This section also details the nature conservation value/legal status of the IEFs (whether assemblages or individual species or habitats) and identifies those IEFs to be taken forward to be considered and assessed within the EcIA.

1.2.8 Figures summarising the ecological baseline regarding ecological features and IEFs are presented in **Annex 6.1**.

2. LEGISLATIVE FRAMEWORK SUMMARY

2.1 Introduction

2.1.1 This section provides a summary of the legislative and policy context regarding designated sites, legally protected and/or controlled species, and other habitats and species of nature conservation importance that could be affected by the Proposed Development. The aim is to summarise the key implications of this legislation and policy, particularly regarding how it influences the assessment of IEFs. For full details of legislation relevant to ecology, please refer to **Section 6.2** of **ES Volume I: Chapter 6 Terrestrial Ecology and Ornithology**.

2.2 Designated sites

2.2.1 Three classes of designated site are considered within this report.

- European designations: SPAs, SACs and Ramsar sites;
- National designations: SSSIs and National Nature Reserves (NNRs); and
- non-statutory Local (County) designations: County Wildlife Sites (CWSs).

a) European designated sites

2.2.2 SPAs are classified in accordance with Article 4 of the European Community (EC) Birds Directive (Ref 6.2) They are designated for the protection of rare and vulnerable birds (as listed on Annex I of the Birds Directive), and for regularly-occurring migratory species.

2.2.3 SACs are designated under the EC Habitats Directive (Ref. 6.3). Article 3 of the EC Habitats Directive (Ref 6.3) requires the establishment of a European network of important high-quality sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).

2.2.4 Ramsar sites are wetlands of international importance designated under the Ramsar Convention (Ref 6.4) They often cover a similar area to that already designated as a SAC and/or SPA, where these sites support a notable amount of wetland habitat.

2.2.5 Before a site can be designated as a European site, it must first have been designated as a SSSI. In many cases, a single European designation may encompass multiple SSSIs. The constituent habitats and species listed within the citations for European sites (often referred to as 'qualifying features') are of European/International importance for nature conservation.

b) National designated sites

2.2.6 SSSIs are designated at the National (UK) level. Originally notified under the National Parks and Access to the Countryside Act (Ref 6.5) SSSIs were re-notified under the Wildlife and Countryside Act (W&CA) (Ref 6.6). Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights

of Way Act (Ref 6.7) The SSSI network in the UK provides statutory protection for the best examples of the country's flora, fauna, and geological or physiographical features.

2.2.7 These sites are also used to underpin other national and international nature conservation designations (SACs, SPAs, Ramsar sites and NNRs). NNRs are declared by the national statutory nature conservation agencies under the National Parks and Access to the Countryside Act (Ref 6.5) and the W&CA (Ref. 6.6).

2.2.8 The constituent habitats and species listed within SSSI and/or NNR citations are of National importance for nature conservation.

c) Local designated sites

2.2.9 CWSs are non-statutory sites supporting habitats and/or species considered to be rare or vulnerable across the county.

2.2.10 In Suffolk, they are identified via a panel that includes technical expertise from Natural England, SWT, SBIS and Suffolk County Council (SCC). The panel evaluates proposed CWSs against agreed selection criteria to ensure that the sites meet the threshold for designation.

2.2.11 The constituent habitats and species listed within the citations of non-statutory designated sites are of County importance for nature conservation.

2.3 Legally protected and controlled species

2.3.1 Many species of animals and plants receive some degree of legal protection. For the purposes of this study, legal protection refers to species included on Schedules 1, 5 and 8 of the W&CA (Ref. 6.6) and/ or included on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations (Ref 6.8).

2.3.2 Species that are fully protected under the W&CA (Ref 6.6) and/or Conservation of Habitats and Species Regulations (Ref 6.8), known as 'protected species' and 'European Protected Species (EPS) respectively, tend to be the focus of impact assessments and nature conservation action in the UK. However, the geographical scale at which they are important varies from species to species. Thus, the designation of a species as an EPS does not necessarily mean that all individuals of that species are of European importance.

2.3.3 In addition, Schedule 9 of the W&CA (Ref 6.6) lists 'controlled' species of animals that it is an offence to release or allow to escape into the wild, as well as species of plants that it is an offence to plant or otherwise cause to grow in the wild. These species are clearly not of any nature conservation importance (other than regarding the damage they can do to habitats and species of importance) and are therefore not a material consideration in planning decisions. They do, however, require careful consideration in the design and implementation of development.

2.4 Priority habitats and species

2.4.1 Public bodies have a duty to conserve biodiversity, in accordance with Section 40 of the NERC Act (Ref 6.9). In addition to designated sites and legally

protected/controlled species (discussed in **Section 2.2** and **2.3** of this Appendix), a large number of habitats and species have been identified as a priority for biodiversity conservation within the UK. These features therefore also need consideration in any EcIA, although the level at which they are considered important will vary.

2.4.2 Priority habitats and species groupings considered within this report include:

- Habitats and species of 'principal importance for the conservation of biological diversity' in England, listed as a requirement of Section 41 of the Natural Environment and Rural Communities (NERC) Act (Ref 6.9).
- Species listed as being of conservation interest in the relevant UK Red Data Book (RDB) or the Bird of Conservation Concern (BoCC) Red List (Ref 6.10).
- Nationally Scarce species, which are species recorded from 16-100 10x10km grid squares in the UK.
- Ancient woodland (i.e. areas that have been under continuous woodland cover since at least 1600, and which are listed within the relevant County Ancient Woodland Inventory).
- Habitats and species listed in the Suffolk Priority Species and Habitats list (Ref 6.11).

2.4.3 It should be noted that many habitats and species will qualify under more than one of the above instruments and will also need to be considered at the correct spatial scale, so the process of assigning importance to these features is therefore a complex one. For example, under Section 41 of the NERC Act (Ref 6.9), habitats and species of 'principal importance for the conservation of biological diversity in England' would be considered to be of national importance, reflecting the fact that these features have been assessed at a national level. However, this status relates to the total amount/population and distribution of habitat/species. The level of importance therefore pertains to the species/habitat resource concerned as a whole, rather than to individual areas of habitat or species populations, which can be difficult to value objectively.

2.4.4 Within this ecological baseline report, detailed consideration is given to the importance assigned to each ecological feature (both habitats and species, and species assemblages), and this necessarily requires a degree of professional judgement.

3. SCOPE OF THE BASELINE

3.1 Introduction

3.1.1 This section defines the terms 'Site boundary', 'ZoI', 'study area' and 'survey area', and the terminology and approach applied to the ecological data.

3.2 Site boundary

3.2.1 The Site boundary defines the extent of the Site for which development consent is sought.

3.3 Defining the Zone of Influence

3.3.1 The ZoI is defined as 'the area over which ecological features may be affected by biophysical changes caused by a proposed project and associated activities' (Ref. 6.1).

3.3.2 It is not a simple task to define the extent of the ZoI for the Site, as it follows that the ZoI will be different for each ecological feature and with the biophysical change being considered. For example, polluted surface water runoff, caused by earth-moving activities could manifest itself over a larger area of ditch habitat than noise disturbance caused by the construction of a fence, which is likely to be limited to the area in close proximity to the fence.

3.3.3 An appropriate ZoI has been defined for each ecological feature (species, assemblage, or habitat) considered, using published information and professional judgement. Given the discrete nature of the Proposed Development, and the likelihood that effects arising from the proposed development will be highly localised, 500m is considered to be a suitable maximum radius over which to consider potential effects, unless otherwise defined for specific species or species groups. Statutory designated sites (SPAs, SACs, Ramsar sites and SSSIs) have been considered within a 5km radius, and CWS within a 2km radius.

3.3.4 Consideration of the ZoI (and study area and survey area, see **Section 3.4** of this Appendix) has been considered based on the mobility of each species/group and the likely extent of any impacts resulting from the Proposed Development. Bats and birds, as highly mobile species, were therefore considered over a ZoI of 500m from the Site, while non-flying species groups (plants, invertebrates, reptiles, amphibians and terrestrial mammals) are considered over a 200m ZoI. Great crested newts were considered over a 500m ZoI to ensure compliance with the standing advice from Natural England for the assessment of impacts associated with development on great crested newt populations (Ref. 6.12).

3.4 Defining the study area and survey area

3.4.1 The study area includes land within the Site boundary and ZoI of the Proposed Development. This includes desk study data and field data (as defined in **Section 1.2**). Again, it follows that the study area will differ depending on the type of data and the data sets being considered. For example, desk study data relating to birds and

bats extends over 500m due to their greater mobility, while data relating to reptiles covers a smaller geographical extent limited to a 200m radius from the Site boundary.

3.4.2 Survey area is defined as *'the geographical extent over which a particular field survey activity took place'*. Similarly, it follows that the survey area will differ depending on the type of survey being considered.

3.4.3 Professional judgement has been used to ensure that sufficient ecological information has been obtained within the Zol that has been defined for each habitat and species assemblage. Surveys undertaken at different time periods encompass different geographical areas, as site boundaries and survey requirements have developed and altered over time.

4. DESK STUDY AND BASELINE DATA

4.1 Approach and methodology

a) Desk study

4.1.1 Records for protected species were requested from SBIS in 2014 and 2018. Records of protected or otherwise notable species of conservation interest within the relevant ZoI (as defined in **Section 3**) were obtained.

4.1.2 The location of designated sites (statutory and non-statutory) was identified using the Multi-Agency Geographical Information for the Countryside (MAGIC) website and the data request to SBIS, submitted in 2014 and 2018. This included Ramsar sites, SPA, SAC, SSSI, NNR, Local Nature Reserves (LNR) and CWS.

4.1.3 Statutory and non-statutory designated sites were considered within the following radii of the Site:

- internationally (SPA, SAC and Ramsar) and nationally (SSSI and NNR) recognised sites within 5km; and
- locally recognised sites (LNR and CWS) within 2km.

4.1.4 Where designated sites were found to fall within the radii detailed above, citations were obtained from SBIS/the Joint Nature Conservation Committee (JNCC) and Natural England's websites. The citations were reviewed to allow for an assessment of the likely presence of any species or habitats of nature conservation importance which may pose a constraint to the Proposed Development.

4.1.5 Within the Sizewell B Relocated Facilities EIA Scoping Report (Ref. 6.13), searches for statutory designated sites were conducted within 10km, while searches for non-statutory designated sites were conducted within 3km. Since the development of the EIA Scoping Report, and as the Proposed Development design has progressed and been further examined, the search area and ZoI for designated sites was refined to 5km for statutory and 2km for non-statutory sites, as this was considered as more appropriate to the nature of the works.

4.1.6 The Suffolk Priority Species and Habitats list (Ref. 6.11), and the habitats and species of principal importance listed under the Section 41 list of the NERC Act (Ref. 6.9), were also reviewed in December 2018 with reference to the habitats and species present, or likely to be present, within the Site boundary and wider study area.

4.1.7 In addition the annual Sizewell Land Management Reports produced by EDF Energy (NGL), between 1996 and 2017 (Ref. 6.14, Ref. 6.15, Ref. 6.16, Ref. 6.17, Ref. 6.18, Ref. 6.19, Ref. 6.20, Ref. 6.21, Ref. 6.22, Ref. 6.23, Ref. 6.24, Ref. 6.25, Ref. 6.26, Ref. 6.27, Ref. 6.28, Ref. 6.29, Ref. 6.30, Ref. 6.31, Ref. 6.32, Ref. 6.33, Ref. 6.34, and Ref. 6.35) were reviewed for information relating to the habitats and species present, or likely to be present, within the Site boundary or the relevant ZoI.

b) Field Data

4.1.8 While only a limited number of ecological surveys have been undertaken specifically in relation to the Site, a wide variety of survey work, has occurred either fully or partially within the Site and/or its immediate surrounds (i.e. within the Zol).

4.1.9 The survey work undertaken has often covered a much wider area than that considered within this Appendix. These survey data sources have been reviewed and information relevant to the Site and the respective Zols extracted. The data sources reviewed are detailed in **Table 6.1**, below, along with a justification of robustness of this data for EcIA purposes.

4.1.10 Full details of the methodologies employed can be found in the relevant survey report(s) provided in **Annex 6.5** and **Annex 6.6** of this Appendix**,** while a summary is provided in **Annex 6.2** of this Appendix. In the case of a small number of surveys, detailed reports have not been produced elsewhere. On these occasions, full details of the methodologies employed are provided here.

Table 6.1. Data sources reviewed, by species group.

Species Group	Data Source (report or survey) *	Year	Justification of robustness of survey data
Plants and Habitats	Entec (Ref. 6.36) – Sizewell C Extended Phase 1 Survey Report	2008	Survey work by Arcadis from 2012 to 2018 has indicated that there has been no material change in the broad distribution of Phase 1 / NVC habitat types present, including within Sizewell Marshes SSSI and the Suffolk Shingle Beaches CWS. As part of the Sizewell C Project, a 2018 eco-hydrological review of Sizewell Marshes has been conducted which has indicated NVC communities within Sizewell Marshes have been very stable since initial NVC in 2008. There is a detailed understanding of the plant communities present and the underlying factors influencing variation in plant distribution. Site visits conducted in 2018 and 2019 confirmed that there have been no material changes to the Site since the completion of the surveys; therefore, for the purposes of the ES, no additional surveys were required. An NVC survey of the location of the realigned footpath within Sizewell Marshes SSSI is planned to take place (considering any seasonality constraints).
	Entec (Ref. 6.37) – Sizewell C National Vegetation Classification (NVC) Report	2008	
	Hyder (Ref. 6.38) – Sizewell C NVC Survey	2014	
	Royal Haskoning (Ref. 6.39) – Sizewell B Power Station ISFSI and Car Park Extension Ecological Scoping Report	2008	
	Vegetation Survey and Assessment (Ref. 6.40) – Sizewell C Nuclear Power Station Baseline Bryophyte Assessment.	2015	
	Biocensus (Ref. 6.41) – Lichen Survey at Sizewell C Power Station	2015	
	Arcadis (2015) - – Relocated Facilities: Extended Phase 1 surveys of Pillbox Field, Coronation Wood and associated habitats**	2015	
	Arcadis – Relocated Facilities: Phase 1 habitat survey of the pedestrian access options from Pillbox Field to Coronation Wood[3]**	2019	
Invertebrates	Amec (Ref. 6.42) – Sizewell C Invertebrate Survey Report	2012	Arcadis 2014 surveys updated Amec 2012 surveys. Habitats within Sizewell Marshes SSSI are relatively stable, and associated invertebrate species are unlikely to have changed. Site visits conducted in 2018 and 2019 confirmed that there have been no material changes to the Site since the completion of the surveys; therefore, for the purposes of the ES, no additional surveys were required.
	Mellings (Ref. 6.43) – Sizewell C Invertebrate Survey	2014	

[3] Note this survey was conducted at a sub-optimal time of year. A further NVC survey of the Sizewell Marshes SSSI section to be impacted is planned to take place (considering any seasonality constraints).

Species Group	Data Source (report or survey) *	Year	Justification of robustness of survey data
Amphibians	Entec (Ref. 6.44) – Sizewell C Great Crested Newt Survey Report	2008	Arcadis updated GCN surveys in 2014. eDNA surveys confirmed continued absence of GCN within EDF Energy (NGL) Sizewell Estate. No additional surveys required for relocated facilities.
	Hyder (Ref. 6.45) – Sizewell C Great Crested Newt Survey	2014	
Reptiles	Entec (Ref. 6.46) – Sizewell C Reptile Survey Report	2008	Arcadis undertook surveys to update the reptile baseline in 2014 and 2015. This updated the previous survey work described above and confirmed the continued presence of an important reptile assemblage across the EDF Energy (NGL) Sizewell Estate. Site visits conducted in 2018 and 2019 confirmed that the habitats have not materially changed since these surveys; therefore, the results of these surveys remains valid and for the purposes of the ES, no additional surveys were required..
	Amec (Ref. 6.47) – – Relocated Facilities: Coronation Wood Reptile Survey Report	2012	
	Amec Foster Wheeler (Ref. 6.48) – – Relocated Facilities: Coronation Wood and Pillbox Field Survey Report	2015	
	Arcadis (Ref. 6.49) – Sizewell C Reptile Mitigation Plan	2015	
	Arcadis (Ref. 6.3.50) – Sizewell C Project Reptile Baseline Technical Appendix (in draft)	In draft, not dated	
	Royal Haskoning (Ref. 6.51) – Sizewell B Power Station ISFSI and Car Park Extension Reptile Survey Report	2008	
Ornithology	Entec (Ref. 6.52) – Sizewell C First Interim Bird Report	2008	Detailed survey work undertaken by both Entec/Amec and Hyder/Arcadis have provided an extensive baseline of breeding and birds wintering within the ZoI as well as information on the status and distribution of other key species such as marsh harrier and seabirds. Site visits conducted in 2018 and 2019 confirmed that the habitats have not materially changed since these surveys; therefore, there is no reason to suppose that the breeding and wintering bird assemblage has changed significantly. Therefore, for the purposes of the ES, no additional surveys were required.
	Entec (Ref. 6.53) – Sizewell C Marsh Harrier Survey Report	2008	
	Entec (Ref. 6.54) – Sizewell C Breeding Bird Survey Report	2010	
	Amec (Ref. 6.55) – Sizewell C Black Redstart Breeding Bird Report	2011	
	Amec (Ref. 6.56) – Sizewell C Little Tern Report	2011	
	Amec (Ref. 6.57) – Sizewell C Harrier and Bittern Survey Report	2011-2012	
	Amec (Ref. 6.58) – Sizewell C Seabird Report	2012	
	Amec (Ref. 6.59) – Sizewell C Arable Reversion Areas, Breeding Bird Survey Report	2012	
	Hyder (Ref. 6.60) – Sizewell C Red-throated diver Survey Report	2013	

Species Group	Data Source (report or survey) *	Year	Justification of robustness of survey data
	Hyder Sizewell C seabird surveys**	2012 and 2013	
	Arcadis Sizewell C marsh harrier surveys**	2014 and 2015	
	Arcadis (Ref. 6.61) – – Relocated Facilities: Coronation Wood Survey Report	2015	
	Galloper Wind Farm Limited (Reg. 6.62) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014	
Bats	Entec (Ref. 6.63) – Sizewell C Bat Survey Report	2007	Arcadis survey work from 2015/2016 has complimented historical survey work, ensuring we have a robust bat baseline. In addition, habitats within EDF Energy (NGL) Sizewell Estate are relatively stable and recent site visits in 2018 and 2019 confirmed that the habitats have not materially changed since these surveys. Therefore, for the purposes of the ES, no additional surveys were required.
	Entec (Ref. 6.64) – Sizewell C Bat Survey Report	2008	
	Entec (Ref. 6.65) – Sizewell C Bat Survey Report	2009	
	Entec (Ref. 6.66) – Sizewell C Bat Survey Report	2010	
	Amec (Ref. 6.67) – Sizewell C Bat Survey Report	2011	
	Amec (Ref. 6.68) – – Relocated Facilities: Coronation Wood Bat Survey Report	2012	
	Arcadis (Ref. 6.69) – Sizewell C Ecology Automated (SM2) Bat Detector Monitoring Report 2013-2014	2013 and 2014	
	Galloper Wind Farm Limited (Ref. 6.62) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014	
	The Ecology Consultancy (Ref. 6.70) – Galloper Wind Farm, Sizewell, Suffolk Bat and Reptile Monitoring Report	2015	
	Corylus Ecology (Ref. 6.71) – Sizewell C Radio-tracking Study	2016	
	Arcadis – Relocated Facilities: Pillbox Field and Coronation Wood Bat Activity Transects**	2015	
	Arcadis – Relocated Facilities: Coronation Wood Tree	2015 and	

Species Group	Data Source (report or survey) *	Year	Justification of robustness of survey data
	Assessment Surveys**	2016	
	Arcadis (2016) – – Relocated Facilities: Stockpiling Area Tree Assessment Surveys**	2016	
	Arcadis – Relocated Facilities: Bat survey in relation to pedestrian access from Pillbox Field**	2019	
Other Mammals	Amec (Ref. 6.72) – Sizewell C Otter Survey Report	2015	Arcadis updated this survey in 2015 and reviewed the footbridge locations in 2019. There is a robust understanding of otter and water vole baseline. No need to update surveys for the purpose of the ES; however, updated surveys will be required prior to construction to inform any future licences.
	Amec (Ref. 6.73) – Sizewell C Water Vole Survey Report	2007 to 2010	
	Hyder (Ref. 6.74) – Sizewell C Otter Survey Report	2007 to 2009	
	Arcadis Sizewell C Otter and Water Vole Survey in Sizewell Marshes SSSI**	2015	
	Arcadis – Relocated Facilities: Water vole survey in relation to pedestrian access from Pillbox Field[4]**	2019	

*Details of the methodologies and results for these surveys are provided in the relevant reports detailed above and a summary is provided in the sections below.
**These surveys have not been reported separately. The relevant details and results of these surveys are provided in the sections below.

[4] Note that this survey was conducted at a sub-optimal time of year.

4.2 Results

a) Designated sites

4.2.1 The desk study identified one Ramsar site; three SPAs and one SAC within 5km of the Site boundary, as well as four SSSIs. Of the identified SSSIs, three are designated for ecological reasons, and one, Crag Pit, Aldeburgh, is designated for its geological interest. Due to the absence of ecological interest features and the lack of a direct impact pathway, the latter is not considered further within this baseline. Details of these sites are provided in **Table 6.2** below whilst their locations are presented on **Figure 6.4**.

Table 6.2. Statutory designated sites within 5km (Ramsar, SAC, SPA and SSSI) of the Site boundary.

Designated Site	Distance from Site boundary	Reason for designation
Ramsar Sites		
Minsmere to Walberswick (Ref. 6.75)	220m north	**Ramsar criterion 1**: The site contains a mosaic of marine, freshwater, marshland and associated habitats, complete with transition areas in between. Contains the largest continuous stand of reedbeds in England and Wales and rare transition in grazing marsh ditch plants from brackish to fresh water. **Ramsar criterion 2**: The site supports nine nationally scarce plants and at least 26 red data book invertebrates. Supports a population of the mollusc *Vertigo angustior* (Habitats Directive Annex II; British Red Data Book Endangered), recently discovered on the Blyth estuary river walls. **Other:** An important assemblage of rare breeding birds associated with marshland and reedbeds including: Bittern (*Botaurus stellaris*), gadwall (*Anas strepera*), Eurasian teal (*Anas crecca*), Northern shoveler (*Anas clypeata*), marsh harrier (*Circus aeruginosus*), avocet (*Recurvirostra avosetta*), and bearded tit (*Panurus biarmicus*).
Special Protection Areas		
Outer Thames Estuary (Ref. 6.76)	Includes area of open sea to the east	**Supports populations of European importance of the following Annex I species:** Overwinter/passage: Red-throated diver (*Gavia stellata*). Protects foraging areas for common tern (*Sterna hirundo*) and little tern (*Sternula albifons*) during the breeding season
Minsmere to Walberswick (Ref. 6.77)	220m north	**Supports populations of European importance of the following Annex I species:** During the breeding season: Avocet, bittern, little tern (*Sternula albifrons*), marsh harrier, nightjar (*Caprimulgus europaeus*) and woodlark (*Lullula arborea*). Overwinter: Avocet, bittern and hen harrier (*Circus cyaneus*).
Sandlings (Ref. 6.78)	600m south-west	**Supports populations of European importance of the following Annex I species:** During the breeding season: Nightjar and woodlark.
Special Area of Conservation		
Minsmere to	220m north	**Supports the following Annex 1 habitats as a primary**

Designated Site	Distance from Site boundary	Reason for designation
Walberswick Heaths and Marshes (Ref. 6.79)		**reason for selection:** Annual vegetation of drift lines. Occurs on a well-developed beach strandline of mixed sand and shingle and is the best and most extensive example of this restricted geographical type. Species include those typical of sandy shores, such as Sea Sandwort (*Honckenya peploides*) and shingle plants such as Sea Beet (*Beta vulgaris subsp. maritima*). European dry heaths. This type of vegetation is dominated by Heather (*Calluna vulgaris*), Western Gorse (*Ulex gallii*) and Bell Heather (*Erica cinerea*). **Annex I habitats present as qualifying features, but not primary reason for selection:** Perennial vegetation of stony banks Comprise vegetated coastal shingle with plant species Yellow Horned-poppy (*Glaucium flavum*) rare Sea-kale (*Crambe maritima*) and Sea Pea (*Lathyrus japonicus*). Where sea spray is blown over the shingle, plant communities with a high frequency of salt-tolerant species such as Thrift (*Armeria maritima*) and Sea Campion (*Silene uniflora*) occur. These may exist in a matrix with abundant lichens.
Sites of Special Scientific Interest		
Sizewell Marshes (Ref. 6.80)	Adjacent	The site contains a large area of lowland, unimproved wet meadows which support outstanding assemblages of invertebrates and breeding birds. Several nationally scarce plants are also present.
Minsmere to Walberswick Heaths and Marshes (Ref. 6.81)	220m north	The site contains a complex series of habitats, notably mudflats, shingle beach, reedbeds, heathland and grazing marsh, which combine to create an area of exceptional scientific interest. The tidal mudflats form sheltered feeding grounds for wildfowl and shorebirds, notably wigeon (*Anas penelope*), shelduck (*Tadorna tadorna*), redshank (*Tringa totanus*) and dunlin (*Calidris alpina*).
Leiston-Aldeburgh (Ref. 6.82)	570m south	The site contains a rich mosaic of habitats including acid grassland, heath, scrub, woodland, fen, open water and vegetated shingle. This mix of habitats in close juxtaposition and the associated transition communities between habitats is unusual in the Suffolk Coast and Heaths. The variety of habitats support a diverse and abundant community of breeding and overwintering birds, a high number of dragonfly species and many scarce plants.

4.2.2 Seven CWS were identified within 2km of the Site. Details of these sites are provided in **Table 6.3** below, whilst their locations are presented on **Figure 6.5**.

Table 6.3. Non-statutory CWS details within 2km of the Site boundary.

CWS name	Distance from Site boundary	Reason for designation
Suffolk Shingle Beaches	50m east	The site is part of a stretch of shingle beach along the Suffolk coast which supports a range of shingle plants, including the nationally scarce plant, Sea Pea. Other typical shingle flora includes Sea-kale, Sea Spurge

CWS name	Distance from Site boundary	Reason for designation
		(*Euphorbia paralias*), Sea Sandwort (*Honckenya peploides*) and Sea Bindweed (*Calystegia soldanella*).
Sizewell Levels and Associated Areas	230m north/north-west	An area of wet meadow, sallow scrub and birch (*Betula* spp.) and alder (*Alnus* spp.). The area contains a number of uncommon plants, for example Ragged-Robin (*Silene flos-cuculi*) and Purple-loosestrife (*Lythrum salicaria*). The waterlogged grazing marsh provides cover for large numbers of swan, teal, mallard (*Anas platyrhynchos*) and moorhen (*Gallinula chloropus*) throughout the Winter. Also of note are the plantations to the north of Sizewell Belts; Goose Hill, Nursery Covert and Kenton Hills support breeding populations of a number of nationally rare birds.
Sizewell Rigs	500m east	The two rigs support a growing breeding colony of kittiwakes (*Rissa tridactyla*), which is the most southerly colony in the North Sea.
Southern Minsmere Levels	610m north	Lying adjacent to the Minsmere to Walberswick European Site, the CWS includes areas of plantation woodland at Kenton Hills, Nursery Covert and Goose Hill. The CWS consists of the marshes to the east of Eastbridge and south of the Minsmere New Cut forming perhaps the last unspoilt and least improved of Suffolk's larger marshland river valleys. Principally of interest for breeding wader and wildfowl and for overwintering birds. Many ditches are improved but some retain reasonable flora and there is additional interest from small areas of scrub and woodland. Note most of this area is now included within the Minsmere to Walberswick Heaths and Marshes SSSI.
Leiston Common	800m west	Leiston Common is a small but important site for wildlife conservation in Suffolk. Bell Heather, a rare plant in Suffolk, grows on Leiston Common together with more widespread plants for example Harebell (*Campanula rotundifolia*), Heath Bedstraw (*Galium saxatile*) and Tormentil (*Potentilla erecta*). Another notable and uncommon feature of the site is the presence of an extensive and diverse lichen flora.
Dower House	1km south	Grassland on the cliff top of the Dower House is a valuable example of unimproved dry acid/dry maritime grassland. The sward composition includes species typically associated with acid grasslands and heaths such as Heath Dog-violet (*Viola canina*) and Heath Speedwell (*Veronica officinalis*). In addition to the sites botanical interest it is important for reptiles including slow-worm (*Anguis fragilis*) and adder (*Vipera berus*). The surrounding blackthorn (*Prunus spinosa*) scrub is also important for birds, particularly as feeding stations for migrants.
Aldringham to Aldeburgh Disused Railway Line	1.2km south-west	The site supports a species-diverse flora both on the line of the old track and on the gently sloping embankments. Plants typical of lightly trampled conditions were recorded on the footpath itself and these include the

CWS name	Distance from Site boundary	Reason for designation
		nationally rare species Mossy Stonecrop (*Crassula tillaea*) and an unusual species of clover, Suffocated Clover (*Trifolium suffocatum*).

4.2.3 Where designated sites cite specific species, species groups and/or habitats as reasons for their designation, these are detailed within the relevant species groups below.

4.2.4 A wide variety of habitats are present within these designated sites, including habitats listed under Section 41 of the NERC Act (Ref. 6.9) and on Suffolk's Priority Species and Habitats list (Ref. 6.11) such as reedbeds, fen meadow/grazing marsh, coastal vegetated shingle and fens.

b) Plants and habitats

4.2.5 Sixteen plant species were identified with the 200m ZoI from desk study records. The nationally scarce (Ref. 6.83) and Endangered (Ref. 6.84) Deptford Pink (*Dianthus armeria*)[5] was recorded to the east of the area proposed for stockpiling, growing in open sandy soils within 100m of the Site boundary. Clustered Clover (*Trifolium glomeratum*)[6] and Smooth Cat's-ear (*Hypochaeris glabra*)[7] were recorded along a bridleway approximately 60m to the west of the Site boundary while Henbane (*Hyoscyamus niger*)[7] was recorded 200m to the east of the Site boundary. Curled Dock (*Rumex crispus* subsp*. uliginosus*), Harebell, Sea Bindweed[7], Sea-holly (*Eryngium maritimum*)[8], Sea-kale, Sea Pea, Sheep's-bit (*Jasione montana*)[7] and Yellow Horned-poppy[8] were recorded 150m east of the Site boundary, within the vegetated shingle habitat along the coast. It is not envisioned that any of these species would be directly affected. The least concern (Ref. 6.84) Annual Beard-grass (*Polypogon monspeliensis*) was recorded within the Site boundary. The remaining plant species could not be precisely located but included Man Orchid (*Aceras anthropophorum*)[9], Corn Spurrey (*Spergula arvensis)*[7], and Mossy Stonecrop.

4.2.6 Other than Annual Beard-grass, no records for these species were located within the red line boundary. Sea Pea grows on coastal shingle, whilst Deptford Pink, Clustered Clover, Henbane and Smooth Cat's-ear typically grow on sandy or stony, often bare soils. None of these species were noted within the Site boundary during any site walkovers.

4.2.7 Man Orchid requires calcareous conditions and is recorded as growing on a rabbit-grazed lawn with the existing power station complex. Survey work did not identify any plant species suggestive of calcareous conditions within Pillbox Field, Coronation

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5 Protected under Schedule 8 of the W&CA (Ref. 6.6) and Section 41 of the NERC Act (Ref. 6.9).

6 A nationally scarce species, being recorded in 16 to 100 hectads (10km squares) but not included in one of the Red List Categories (Ref. 6.84).

7 A vulnerable species (Ref. 6.84).

8 A near threatened species (Ref. 6.84).

9 Listed on Section 41 of the NERC Act (Ref. 6.9), as an endangered species on the Great Britain Red List (Ref.6.84) and is nationally scarce (Ref. 6.84).

Wood, or the fields within the north of the Site boundary. It is therefore considered unlikely that Man Orchid is present, and this species was not recorded during any of the walkover surveys.

4.2.8 Mossy Stonecrop grows on bare, often compacted, sandy or gravelly ground, where the ground is kept open by disturbance and periodic flooding. The disturbed ground to the west of Coronation Wood could support this species; however, there were no records of this species during site walkovers.

4.2.9 The area within the northern part of the Site boundary proposed for stockpiling during construction consists of poor semi-improved grassland with frequently occurring species including Cock's-foot (*Dactylis glomerata*), White Clover (*Trifolium repens*), Dandelion (*Taraxacum* agg.), Daisy (*Bellis perennis*), Bristly Oxtongue (*Picris echioides*) and Ribwort Plantain (*Plantago lanceolata*). Two narrow (less than 10m wide), linear tree belts of planted Alder (*Alnus glutinosa*) are also present along the east and west Site boundary at this location.

4.2.10 North of the stockpiling area, but outside the Site boundary, is an extensive mound densely planted with scrub species including Holly (*Ilex aquifolium*), Gorse (*Ulex europaeus*), Silver Birch (*Betula pendula*), Hornbeam (*Carpinus betulus*), Blackthorn and Hawthorn (*Crataegus mongyna*), and an area of young Corsican Pine (*Pinus nigra* ssp*. laricio*). Further to the north, within the ZoI, the habitats consist primarily of marshy grassland and coastal sand dune vegetation.

4.2.11 Coastal vegetation is found within the ZoI of the eastern boundary of the Site with either a sand or shingle substrate. The sand substrate gives rise to grassland dominated by species including Sand Sedge (*Carex arenaria*) and Marram (*Ammophila arenaria*), whilst the shingle substrate gives rise to scattered plants that are specialists of shingle habitat such as Sea Pea. Bryophyte surveys of the coastal habitats identified a range of common and widespread species characteristic of shingle habitats (Ref. 6.40). Lichen surveys demonstrated the lichen flora to be well developed and several less common species were identified. The lichen flora is of some nature conservation importance (Ref. 6.41). All field survey records were located outside the Site boundary.

4.2.12 Along the western boundary of the Site is an area of dense scrub including Alder, Grey Willow (*Salix cinerea*), Gorse, Broom (*Genisteae* spp.), Brambles (*Rubus fruticosus* agg.) and Dog-rose (*Rosa canina*) and a strip of woodland adjacent to Sizewell Marshes SSSI, that comprise a range of broad-leaved species including Alder, Grey Alder (*Alnus incana*), Pedunculate Oak (*Quercus robur*), Grey Willow, Ash (*Fraxinus excelsior*), Silver Birch and Hawthorn.

4.2.13 Sizewell Marshes SSSI is located immediately adjacent to the west of the Site, with a small section to the east (north of Pillbox Field). Described as a large area of unimproved wet meadow occupying a low-lying basin of deep fen peat, Sizewell Marshes SSSI is managed by SWT, in partnership with EDF Energy (NGL), through a combination of water level management and extensive cattle-grazing and was assessed in 2009 (by Natural England) as being in favourable nature conservation condition (Ref. 6.85). Sizewell Marshes SSSI supports the following broad habitat types: fen meadow, reedbed, wet woodland, and a network of linear drainage ditches. All of these broad habitat types are listed under Section 41 of the NERC Act

(Ref. 6.9) as habitats of principal importance for biodiversity, whilst also being listed on Suffolk's Priority Species and Habitats list (Ref. 6.11). Full details of the habitats present within this area are provided in **Table 6.2**.

4.2.14 Coronation Wood, located within the Site boundary to the west of the Sizewell A Station, is a mixed plantation of limited ecological value. Species include Pedunculate Oak, Beech (*Fagus sylvatica*), Sycamore (*Acer pseudoplatanus*), Silver Birch, Sweet Chestnut (*Castanea sativa*), Cherry (*Prunus* spp.) and Elm (*Ulmus* spp.) as well as of Corsican Pine (*Pinus nigra var. maritima*), Scots pine (*Pinus sylvestris*) and Giant Fir (*Abies grandis*). There is little understorey or ground flora due to a lack of light permeating the canopy, and the depth of the pine needles. Strips of amenity grassland are located to the north, east and west of Coronation Wood. Also to the west of Coronation Wood, located between the woodland and Sizewell Marshes SSSI, is an open sandy area supported short sward grassland and patches of scrub. This area slopes away from Coronation Wood towards Sizewell Marshes SSSI, with the slopes dominated by dense Bracken (*Pteridium aquilinum*) and scrub as far as the Alder-lined ditch on the edge of Sizewell Marshes SSSI. To the west of Coronation Wood is also a strip of acid grassland and scrub habitat.

4.2.15 Pillbox Field, within the southern part of the Site, comprises former arable farmland that has been allowed to revert to grassland, with defunct hedgerow along the southern and western boundaries of Pillbox Field. These hedgerows were not considered 'Important' when assessed against the Wildlife and Landscape Criteria of the Hedgerows Regulations (Ref. 7.86). An area of willow scrub, located by a low-lying ditch at the northern end of the field, supports a limited number of plant species characteristic of wetland conditions. An area of semi-natural broadleaved woodland is located between Pillbox Field and the Sizewell A and B power station access road connecting to the strip of semi-natural broadleaved woodland to the south of Coronation Wood.

4.2.16 The pedestrian access path from Pillbox Field to Coronation Wood will go through the eastern boundary of Sizewell Marshes SSSI for approximately 66m. This comprises species-poor semi-improved neutral grassland with grass species including Yorkshire-fog (*Holcus lanatus*), Cock's-foot and fescue sp. (*Festuca* sp.), and frequent forb species including Ragwort (*Senecio jacobaea*), Red Dead-nettle (*Lamium purpureum*), Common Chickweed (*Stellaria media*) and Common Mouse-ear (*Cerastium fontanum*). The raised profile of this section of Sizewell Marshes SSSI has resulted in drier conditions in comparison to the rest of Sizewell Marshes SSSI.

4.2.17 To the north of Rosery Cottage, the existing pedestrian access path peters out into a wet area supporting marshy grassland with some Alder and Willow trees. While this area of marshy grassland is outside the Sizewell Marshes SSSI, it does link the western and eastern areas of Sizewell Marshes SSSI.

4.2.18 A stand of the non-native invasive Indian (also known as Himalayan) Balsam (*Impatiens glandulifera*) was identified growing in the gateway of the field immediately north of Pillbox Field as well as along the ditches in the vicinity of the proposed footbridge, within 100m of the Site boundary. EDF Energy (NGL) are conducting a control programme to manage this invasive species in the area.

4.2.19 Further north, the Site boundary abutted areas of hard standing and buildings associated with Sizewell A. An area of conifer plantation (Hill Wood) has also been identified within the ZoI, to the east of the Site.

4.2.20 Further details of these desk study records are provided in **Section 2** in **Annex 6.4** of this Appendix. Details of survey work conducted are detailed in **Annex 6.2 Methodology** and **Annex 6.3 Results** of this Appendix.

c) Invertebrates

4.2.21 Eighty-one invertebrate records were identified from the desk study data, including 28 species listed on Section 41 of the NERC Act (Ref. 6.9). One of the species recorded was the Endangered (Ref. 6.87) Norfolk hawker dragonfly (*Aeshna isosceles*)[10] which has a restricted distribution in the UK, occurring only within fen and grazing marsh habitats in the broadlands of Norfolk and north-east Suffolk which are relatively isolated from polluted water (Ref. 6.88).

4.2.22 A further eight butterflies (grayling (*Hipparchia semele*); small heath (*Coenonympha pamphilus*); wall (*Lasiommata megera*); white admiral (*Limenitis camilla*) and white letter hairstreak (*Satyrium w-album*)); a single bee (sea-aster colletes bee (*Colletes halophilus*)); and one antlion species (*Euroleon nostras*) identified within the desk study data are on the Suffolk's Priority Species and Habitats list (Ref. 6.11). A further 28 moth species identified from the desk study data are on the Suffolk's Priority Species and Habitats list for research purposes as, although these species are currently common and widespread, they are experiencing rapid declines.

4.2.23 Habitat within the Site consists largely of areas of hard standing and as such are unsuitable for a number of the invertebrate species identified within the desk study, including Norfolk hawker and the Suffolk antlion.

4.2.24 Invertebrate assemblages are cited as a reason for the designation for Sizewell Marshes SSSI (Ref. 6.80). Surveys within Sizewell Marshes SSSI recorded a large number of invertebrate species listed on the Suffolk BAP and RDB, as well as several nationally scarce species. Identified species included Norfolk hawker and the nationally rare (Ref. 6.89) great silver water beetle (*Hydrophilus piceus*). The ditches immediately to the west of the Site support a diverse range of species including two RDB Category 2 soldierflies (*Odontomyia ornata* and *O. argentata*) (Ref. 6.90) and three nationally scarce species; the beetle *Ochthebius marinus*, the cranefly *Limonia ventralis* and the soldierfly *Vanoyia tenuicornis*.

4.2.25 Invertebrate surveys undertaken within the area proposed for stockpiling at the northern extent of the Site boundary recorded widespread and common species typical of the habitats present. None of the identified species were scarce or notable.

4.2.26 Further details of these desk study records are provided in **Section 3** in **Annex 6.4** of this Appendix. Details of survey work conducted are detailed in **Annex 6.2 Methodology** and **Annex 6.3 Results** of this Appendix.

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[10] Listed on Schedule 5 of the W&CA (Ref. 6.6), Section 41 of the NERC Act (Ref. 6.9) and as a priority species of conservation action in the county on the Suffolk's Priority Species and Habitats (Ref. 6.11).

d) Amphibians

4.2.27 The desk study identified no amphibian records within the Site boundary or the ZoI, with the closest desk study record, that of a smooth newt (*Lissotriton vulgaris*), approximately 700m to the south of the Site boundary.

4.2.28 The EDF Energy (NGL) Sizewell Estate supports an introduced population of the nationally rare natterjack toad (*Epidalea calamita*), restricted to a single location within the EDF Energy (NGL) Sizewell Estate, and within the Minsmere RSPB reserve. Natterjack toads (*Epidalea calamita*), a nationally rare species listed under Section 41 of the NERC Act (Ref. 6.9) and on Suffolk's Priority Species and Habitats list (Ref. 6.11), are known to be present within Retsom's Field (Ref. 6.14 to Ref. 6.35). Monitoring of this species in 2018 demonstrated successful breeding within Retsom's Field (Ref. 6.91). This water body is located approximately 720m to the north of the Site and as such is outside of the relevant ZoI.

4.2.29 No amphibian surveys were undertaken within the Site boundary due to the absence of water bodies, and no great crested newts were recorded during surveys within the ZoI. It was, however, considered that habitats present within the Site boundary (including scrub, grassland and woodland) provide suitable terrestrial habitat for terrestrial foraging and/or hibernation for a low number of common amphibian species including common frog (*Rana temporaria*), smooth newt, and common toad (*Bufo bufo*).

e) Reptiles

4.2.30 A review of Suffolk's Priority Species and Habitats list (Ref. 6.11) identified four native, reptile species (adder, common lizard (*Zootoca vivipara*), grass snake (*Natrix natrix*) and slow-worm) as priority species for conservation action in the county. In addition, all four species are included under Section 41 of the NERC Act (Ref. 6.9). All four species have experienced declines during recent decades, due primarily to habitat loss and fragmentation. This decline has been most notable within adder populations which are more restricted in habitat preferences (Ref. 6.92); this therefore constitutes a major threat in Suffolk (Ref. 6.93). Within Suffolk, drastic declines of slow-worm have also been noted (Ref. 6.94), while populations of common lizard appear to have been less affected, with populations faring well along coastal and heathland areas of the Sandlings and Brecks (Ref. 6.95).

4.2.31 The desk study identified two reptile records within the Site boundary, a common lizard, located within the area proposed for stockpiling during construction, and a grass snake, located on the bank to the south-west of Coronation Wood. Within the wider ZoI, reptile records were widespread in areas of suitable habitat, including Sizewell Marshes SSSI, Sizewell Beach and on Sizewell A and B power station access road.

4.2.32 Reptiles were recorded during baseline surveys within the Site boundary and wider area. Using the Froglife (Ref. 6.96) method of population assessment, it is considered that a low population of common lizard, slow-worm, adder and grass-snake are present along the periphery of the Site boundary. See **Annex 6.3** of this Appendix for further details and maximum counts of species recorded.

4.2.33 Coronation Wood and adjacent scrub provide largely sub-optimal habitat for reptiles with those individuals recorded largely restricted to open glades and woodland edges. Despite this, low numbers of all four species were recorded suggesting that occasional use is made of these habitats.

4.2.34 All four native species were also recorded within Pillbox Field. Individuals were most commonly recorded along field margins, with reduced numbers recorded in more open areas. Numbers recorded suggest the presence of a low population of all four species while the presence of juveniles (adder, common lizard, slow-worm) suggests breeding is occuring.

4.2.35 Further details of the desk study records are provided in **Section 4** in **Annex 6.4** of this Appendix**.** Details of survey work conducted are detailed in **Annex 6.2 Methodology** and **Annex 6.3 Results** of this Appendix.

f) Ornithology

4.2.36 A total of 167 bird species were identified within the desk study data including records of common crossbill (*Loxia curvirostra*), listed on Schedule 1 of the W&CA (Ref. 6.6), and house martin (*Delichon urbicum*), an Amber List BoCC (Ref. 6.10), within the grounds of Sizewell A power station.

4.2.37 An additional 50 identified species were listed on Schedule 1 of the W&CA (Ref. 6.6) of which 12 are also listed on the BoCC Red list (Ref. 6.10) and 21 were listed on the BoCC Amber List (Ref. 6.10). Seven of the species listed on Schedule 1 of the W&CA (Ref. 6.6) were also listed under Section 41 of the NERC Act (Ref. 6.9) (bittern (*Botaurus stellaris*), Black-tailed Godwit (*Limosa limosa*), common scoter (*Melanitta nigra*), Eurasian hobby (*Falco subbuteo*) hen harrier (*Circus cyaneus*), roseate tern (*Sterna dougallii*) and woodlark (*Lullula arborea*)).

4.2.38 A further 32 species were listed on the BoCC Red List (Ref. 6.10) and 47 species on the BoCC Amber List (Ref. 6.10), but not listed on Schedule 1 of the W&CA (Ref. 6.6). Similarly, 29 species listed on Section 41 of the NERC Act (Ref. 6.9), but not listed on Schedule 1 of the W&CA (Ref. 6.6), were identified from the desk study data.

4.2.39 Twenty-nine species listed on Suffolk's Priority Species and Habitats list (Ref. 6.11) were identified from the desk study data.

4.2.40 The majority of these records are for species either associated with the offshore environment or the Minsmere to Walberswick SPA and are therefore unlikely to be present within the ZoI of the Site. **Annex 6.3** of this Appendix provides a more detailed assessment of the breeding and wintering bird species present within the ZoI.

4.2.41 Surveys over the grassland habitat at the northern and southern extent of the Site identified a limited assemblage of breeding bird species including a small number of species listed on the Red List of BoCC (Ref. 6.10) as well as a small number of wintering wildfowl, using areas of temporary Winter flooding at the northern extent of the Site. Bird species listed on the Red List of BoCC (Ref. 6.10) observed included fieldfare (*Turdus pilaris*); redwing (*Turdus iliacus*); song thrush (*Turdus philomelos*); house sparrow (*Passer domesticus*); linnet (*Carduelis cannabina*); marsh tit (*Poecile*

palustris); yellowhammer (*Emberiza citrinella*) and skylark (*Alauda arvensis*). Species on the Amber List of BoCC (Ref. 6.10) observed included dunnock (*Prunella modularis*); meadow pipit (*Anthus pratensis*); stock dove (*Columba oenas*); kestrel (*Falco tinnunculus*); willow warbler (*Phylloscopus trochilus*) and reed bunting (*Emberiza schoeniclus*).

4.2.42 Black redstart (*Phoenicurus ochruros*) and peregrine falcon (*Falco peregrinus*), both listed on Schedule 1 of the W&CA (Ref. 6.6) were recorded utilising habitats within and adjacent to the existing Sizewell A and B Station complexes and breeding was confirmed in 2015, with power station buildings adjacent to the Site boundary, or within the ZoI, used as nest sites. Anecdotal information received has confirmed both species were also present during the breeding season in 2016 and 2017[11]. In addition, there is sufficient habitat along the coastal fringe, north of the Site, and areas of rough ground within Sizewell A and B nuclear power stations for foraging black redstart, whilst peregrines forage over a wide area not restricted to the immediate vicinity of the Sizewell A and B power stations.

4.2.43 Coronation Wood supported a limited range of common and widespread breeding bird species characteristic of woodland habitat. A single Amber List BoCC (Ref. 6.10), dunnock, was recorded on a single occasion during wintering bird surveys. A similar assemblage was recorded in the open grassland and scrub habitat adjcent to the west of Coronation Wood, although a number of Red Listed BoCC (Ref. 6.10), including song thrush and marsh tit were also recorded.

4.2.44 A total of 30 bird species of nature conservation importance were recorded during surveys within Sizewell Marshes SSSI. Please see **Annex 6.3** of this Appendix for further details. In addition, Sizewell Marshes SSSI provided functionally linked habitat[12] for foraging marsh harrier during the breeding season and wintering wildfowl, both of which are cited interest features for the Minsmere to Walberswick SPA.

4.2.45 Further details of these desk study records are provided in **Section 4** in **Annex 6.4** of this Appendix. Details of survey work conducted are detailed in **Annex 6.2 Methodology** and **Annex 6.3 Results** of this Appendix.

g) Bats

4.2.46 All UK bat species are protected under Schedule 5 of the W&CA (Ref. 6.6) and, of those species known to occur in Suffolk, lesser horseshoe bat (*Rhinolophus hipposideros*), noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), barbastelle (*Barbastella barbastellus*), and brown long-eared bat (*Plecotus auritus*) are also listed under Section 41 of the NERC Act (Ref. 6.9) and Suffolk's Priority Species and Habitats list (Ref. 6.11).

11 Email correspondence with SWT and Christine Blythe (EDF Energy (NGL)).

12 Functionally linked habitat is habitat located outside of a European designated site that is used by the qualifying features (species) of a European site for functions such as breeding or foraging. For example, marsh harrier breeding within the Minsmere to Walberswick SPA forage over Sizewell Marshes SSSI, so Sizewell Marshes SSSI provides a foraging function for the SPA breeding population.

4.2.47 Although included on Suffolk's Priority Species and Habitats list, only a single lesser horseshoe bat has been recorded within Suffolk in recent years[13] and the species has only been recorded in the county on two further occasions over the last 100 years (Ref. 6.97). Its presence in Suffolk is well outside of its current known distribution, which is confined to Wales, western England and western Ireland (Ref. 6.98). It is therefore considered that lesser horseshoe bats are absent from the Site boundary and ZoI, and this species is therefore not considered further within this ecological baseline.

4.2.48 Eleven bat records were identified from the desk study data. A single record was identified immediately adjacent to the Site boundary, a common pipistrelle (*Pipistrellus pipistrellus*) recorded at Rosery Cottage, on the north-eastern corner of Pillbox field in 1994. A further ten records (*Myotis* spp., Natterer's bat (*Myotis nattereri*), noctule, Leisler's bat (*Nyctalus leisleri*)[14], common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle (*Pipistrellus nathusii*), serotine (*Eptesicus serotinus*), barbastelle, brown long-eared bat, and an unidentified bat species) were identified within the ZoI; all of these were located within Sizewell Marshes SSSI, approximately 320m to the west of the Site boundary. These records relate to the activity and static detector surveys undertaken within Sizewell Marshes SSSI as part of the Galloper Wind Farm Eastern Super Grid Transformer Project (Ref. 6.62) in 2012/13, further details of which are discussed in **Annex 6.2** and **Annex 6.3**.

4.2.49 The presence of Nathusius' pipistrelle had previously been recorded within Sizewell Marshes SSSI. The first record of this species on or close to the EDF Energy (NGL) Sizewell Estate was from 2007 (Ref. 6.24).

4.2.50 During bat surveys undertaken within the ZoI, species recorded included Daubenton's bat (*Myotis daubentonii*), Natterer's bat, noctule, common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, serotine, barbastelle, and brown long-eared bat, as well as potential Leisler's bat recordings and recordings assigned to three species groups (*Myotis* spp., *Pipistrellus* spp. and *Nyctalus* spp.).

4.2.51 During field surveys, bat activity recorded across the area due for stockpiling was consistently at low levels with a limited number of species recorded (barbastelle, *Myotis* spp., noctule, common pipistrelle and soprano pipistrelle). The only activity of note was an increase in 'big bat'[15] spp., likely to be noctule, recorded in 2014.

4.2.52 Bat activity recorded within Coronation Wood consisted primarily of common and soprano pipistrelle, with occasional recordings of *Myotis* spp., noctule, Leisler's, Nathusius' pipistrelle, serotine, barbastelle and brown long-eared at only low levels, indicating that Coronation Wood was regularly used by common and soprano pipistrelle, but that the foraging resources within Coronation Wood were not of high

[13] Recorded in north-west Suffolk between 1995 and 2008.

[14] The identification of Leisler's bat from echolocation calls can be extremely difficult due to the considerable overlap in the characteristics of the two *Nyctalus* spp. (noctule and Leisler's bat) as well as overlap between the calls of Leisler's bat and serotine. Therefore, this identification cannot be confirmed.

[15] Big bat' is a group classification consisting of noctule, Leisler's bat and serotine. These species are often grouped due to the similarities and overlapping characteristics of their echolocation calls making species-specific identifications difficult and unreliable.

value to other species. Other than common and soprano pipistrelle, other species were unlikely to be roosting close to, or within, Coronation Wood. Brown long-eared bats may be an exception to this as this species may be under-represented due to the quiet nature of their echolocation calls.

4.2.53 Bat activity within the strip of land between Coronation Wood and Sizewell Marshes SSSI was largely comparable to that recorded at Coronation Wood with activity levels dominated by common and soprano pipistrelle. Additional species recorded at low level included barbastelle, 'big bat' spp., brown long-eared bat, *Myotis* spp. and *Nyctalus* spp. Very little early evening activity was recorded, suggesting that there is unlikely to be roosting bats at this location.

4.2.54 Surveys using static automated bat detectors within Sizewell Marshes SSSI, recorded *Myotis* spp., common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, barbastelle, brown long-eared bat and 'big bat' spp. Barbastelle used some locations for early evening foraging; and may have used roosts within/in the vicinity of Grimseys Wood and/or Broom Covert. However, activity within the Site boundary was much lower, indicating that this species is not reliant on the habitats within the Site.

4.2.55 Ground-based assessments of tree roost potential identified 11 trees within Coronation Wood as having the potential to support roosting bats (one of high, seven of medium and three of low potential), with a further four of medium and six of high potential trees located in the woodland strip to the south of Coronation Wood running along the western side of the Sizewell A and B power station access road. Mature willow trees within wet woodland between Coronation Wood and Pillbox Field were also considered to have several features potentially suitable for roosting bats. The location of all trees identified as potential roost sites have been shown on **Figure 6.3**. A single common pipistrelle pass was recorded, in October 2015, in the 20 minutes after sunset at the south-west corner of Coronation Wood; although not observed, it was considered that this pass may have represented an individual emerging from within Coronation Wood.

4.2.56 Further potential roost locations assessed included the pillbox located within Pillbox Field, and Rosery Cottages and associated outbuildings located at the northern edge of Pillbox Field. The pillbox was assessed as being too light and airy to be suitable as a bat roost and an internal inspection found no evidence of current occupation was identified. A detailed inspection of Rosery Cottage was not possible due to access restrictions; however, although a distant external inspection of the main building did not reveal any obvious access points for bats, there is a desk-study record (from 1994) for common pipistrelle associated with this property. The small garage at Rosery Cottage, due to be demolished as part of the Proposed Development, was inspected and does not have any bat roost potential. From transect surveys, foraging activity within Pillbox Field itself was limited, with only two bat passes recorded, both of which were *Myotis* spp.

4.2.57 The Proposed Development will also involve the demolition of a number of additional modern buildings associated with the existing Sizewell B facilities which will be relocated as part of the Proposed Development (refer to **ES Volume I: Chapter 3: Proposed Development**). These are considered to be sub-optimal for roosting bat species. A detailed external (and internal where possible) assessment of these

buildings and their potential to support roosting bats was undertaken in March 2019. The results are not included here, but will be submitted to East Suffolk Council (ESC)[16] separately. In the unlikely event that a roost is confirmed (for example, during pre-construction surveys), then an appropriate mitigation strategy would be agreed with Natural England.

4.2.58 Further details of these desk study records are provided in **Section 6** in **Annex 6.4** of this Appendix. Details of survey work conducted are detailed in **Annex 6.2 Methodology** and **Annex 6.3 Results** of this Appendix.

h) Other mammals

4.2.59 Desk study records were identified within the Site and ZoI for harvest mouse (*Micromys minutus*), hedgehog (*Erinaceus europaeus*), otter (*Lutra lutra*) and water vole (*Arvicola amphibius*). Harvest mice and hedgehog records were identified at the edge of the 200m ZoI to the west and east of the Site boundary respectively.

4.2.60 Three otter records were identified, one located within the Site boundary to the west of the Western Car Park, while the remaining two were located within the ZoI along the Leiston Drain and within Sizewell Marshes SSSI. Indications are that the otter population in Suffolk is increasing (Ref. 6.97) and, although not sighted on the EDF Energy (NGL) Sizewell Estate in all years, otter field signs have been frequently recorded by SWT indicating a year-round presence.

4.2.61 Although no water vole records were recorded within the Site boundary, six records were identified within the ZoI. One record was located along the Leiston Drain, while the remaining records were all recorded within Sizewell Marshes SSSI, corresponding with records within EDF Energy (NGL) Land Management reports between 1996 and 2017 (Ref. 6.14 to Ref. 6.35) and SWT May to September 2018 Sizewell Estate – Land Management/Biodiversity Survey Report (Ref. 6.91) which indicate that water vole have been active with Sizewell Marshes SSSI in all years between 1996 and 2018. Sizewell Marshes SSSI, along with Minsmere and North Warren, have been designated as a National Key Site (NKS) for water vole (Ref. 6.97).

4.2.62 Water vole surveys were undertaken by Arcadis in 2015 of the ditches within the Sizewell Marshes SSSI directly to the south of Coronation Wood. An updated Phase 1 habitat survey of these ditches was undertaken by Arcadis in 2019, the results of which reconfirmed the findings of 2015. The ditches that will be crossed by the proposed two footbridges are sub-optimal for water voles and the low banks suggested that they may be prone to flooding. The remaining ditches are shaded or heavily shaded and are therefore assessed as having low or very low potential to support water vole. No water vole fields (burrows, latrines, feeding signs) were recorded during either survey visit.

[16] On the 1st April 2019, East Suffolk Council was created, covering the former districts of Suffolk Coastal District Council (SCDC) and Waveney District Council (WDC). All pre application consultation and engagement which has taken place to date with the local planning authority, was carried out with SCDC.

4.2.63 Incidental records of two to three brown hares were recorded within the area proposed for construction stockpiling and surrounding habitats during reptile surveys undertaken by Arcadis (Ref. 6.49). East Anglia holds approximately 20% of the national population across the three counties (Cambridgeshire, Suffolk and Norfolk) (Ref. 6.99). The Suffolk Priority Species and Habitats for brown hare states that the species is widespread in Suffolk, with little evidence of any large decline in recent years, although numbers do fluctuate from year to year (Ref. 6.11). More recent records of brown hare indicated that they have declined recently across the EDF Energy (NGL) Sizewell Estate (Ref. 6.100).

4.2.64 No SBIS desk-study records of deer were identified within the Site boundary or the 200m Zol. Extensive evidence of deer activity was recorded within the Site, notably within the area proposed for stockpiling during construction, as well as within the Zol and wider landscape (Ref. 6.101). Deer are known to be widespread and common across the EDF Energy (NGL) Sizewell Estate including large populations of red deer (*Cervus elaphus*) and muntjac (*Muntiacus reevesi*) as well as individual sightings of fallow deer (*Dama dama*), first recorded in 2007 (Ref. 6.24), and Chinese water deer (*Hydropotes inermis*).

4.2.65 The desk study also identified records of non-native mammal species as listed on Schedule 9 of the W&CA (Ref. 6.6). An American mink (*Mustela vision*) killed on the road near the Sizewell power station complex entrance was recorded in February 2004 (Ref. 6.21). Although incidental records of this species indicate that it is widespread in Suffolk (Ref. 6.97), it has failed to become established in the vicinity of the EDF Energy (NGL) Sizewell Estate, due in part to mink control undertaken by SWT.

4.2.66 Details of desk study records within the Site and the 200m terrestrial mammal Zol are provided in **Section 7** in **Annex 6.4** of this Appendix. Details of survey work conducted are detailed in **Annex 6.2 Methodology** and **Annex 6.3 Results** of this Appendix.

5. ECOLOGICAL FEATURES AND THEIR IMPORTANCE

5.1 Introduction

5.1.1 The purpose of this final section is to describe the distribution and relative abundance of the habitats and species present within the ZoI of the Site boundary, and to use this information, in the context of their wider distribution, to assess the importance of the habitats and species that could be affected by the Proposed Development. This assessment will then be used, in conjunction with a description of the extent and magnitude of the predicted impacts of the scheme, to carry out the detailed ecological impact assessment presented in **ES Volume I: Chapter 6 Terrestrial Ecology and Ornithology**.

5.1.2 To comply with both the CIEEM Guidelines for Ecological Impact Assessment (Ref 6.1) and with the standard EIA methodology used elsewhere within the ES, both methodologies have been used to assess the habitats and species within the ZoI of the Site.

5.1.3 Under the CIEEM guidelines (Ref. 6.1), the first stage is to identify IEFs, to include habitats, species and ecosystems, including ecosystem function and processes, with reference to the geographical context in which they are considered important. An assessment is then made of whether these IEFs will likely be subject to impacts and, if so, these are taken forward into the EcIA as a material consideration in the planning decision. Where protected species are present and there is the potential for a breach of the legislation, those species are also considered to be IEFs to be included in the EcIA

5.1.4 Those IEFs that qualify purely on the basis of legislative considerations (such as badgers) rather than as a result of their conservation status, are addressed separately in the EcIA from those that are of material concern, with the latter being assessed in greater detail. For both, the ES will outline what measures are required to prevent any contravention of the legislation.

5.1.5 In line with the CIEEM guidelines, the importance of an ecological feature, as determined with reference to legal, policy and/or nature conservation considerations, has been assessed within the following geographical context:

- **International** and **European**;
- **National** (i.e. England);
- **Regional** (i.e. the East of England);
- **County** (i.e. Suffolk); and
- **Local** (within ZoI of the Proposed Development).

5.1.6 The following table has also been used in order to assess the ecological features in accordance with the wider EIA methodology (**Table 6.4**).

Table 6.4. Criteria for assessment of ecological importance. *

Importance	Criteria	
High	International; UK; National (England)	Very high importance and rarity. Feature/resource possesses key characteristics which contribute significantly to the distinctiveness, rarity and character of the site (e.g. designated features of international/national importance, such as SACs, SPAs, Ramsar sites and SSSIs.
Medium	Regional (East Anglia); County (Suffolk)	Medium importance and rarity, regional scale. Feature/resource possesses key characteristics which contribute significantly to the distinctiveness and character of the Site/receptor (e.g. designated features of regional or county importance, such as CWSs, County BAP habitats, etc.).
Low	Local - district/ borough (Suffolk Coastal)	Low or medium importance and rarity, local scale. Feature/resource possesses characteristics which are only locally significant. Feature/resource not designated or only designated at a district or local level (e.g. local nature reserve).
Very low	Within the ZoI	Feature/resource characteristics do not make a significant contribution to local character or distinctiveness. Feature/resource not designated.

*As part of the assessment process, the sensitivity of the ecological features should also be assessed. Sensitivity has not been addressed within the ecological baseline. Sensitivity and a detailed rationale explaining how a particular sensitivity rating has been arrived at for each ecological feature is dealt with in the Environment Statement. [Note that Importance and Sensitivity should be assessed separately, as they are to an extent independent of each other (e.g. a feature of high value could be of low sensitivity, and vice versa)].

5.2 Description and assessment of receptors

5.2.1 This section sets out the relevant ecological features and their importance and discusses each in turn. For each feature, its importance is described by:

- Description and distribution: the habitat or species is described in terms of its distribution and abundance locally, regionally and nationally.
- Assessment: the habitat or species is described by its protected/nature conservation status, and other measures of value, to determine its relative importance, both in terms of the CIEEM guidelines and the wider EIA assessment methodology.

5.2.2 As outlined in **Section 2** of the Appendix**,** the legislative and policy framework for each ecological receptor is considered in full and, together with professional judgement, is used to assign a value to each ecological receptor. This Appendix gives a detailed rationale for the value assigned to each ecological receptor and the conclusions reached.

a) Feature: designated sites

i) Description and distribution

5.2.3 One Ramsar, three SPAs, one SACs and three SSSIs were identfiied within 5km of the Site, while seven CWSs were identified within 2km.

5.2.4 The designated sites identified within 5km of the Site range from adjacent to 600m (at its closest point) from the Site boundary and support a diverse range of habitats, as well as extensive botanical, invertebrate, breeding and wintering bird

assemblages. Full details of the identified statutory designated sites and their cited interest features are provided in **Table 6.2.**

5.2.5 The seven CWSs identified within 2km of the Site boundary range from 50m to 1.2km from the Site and support a range of habitats as well as diverse plant, reptile and bird assemblages. Full details of identified non-statutory desginated sites and their cited interest features are provided in **Table 6.3**.

ii) Assessment

5.2.6 Given that:

- Ramsar, SPA, SAC and SSSIs and their cited interest features within 5km of the Site are designated on the basis of internationally and nationally important habitats, plant and/or bird assemblages; and
- the distance of these sites from the Site, along with the implementation of primary and tertiary mitigation measures, ensures there will be no direct or indirect impacts on these statutory designated sites (with the exception of Sizewell Marshes SSSI and the cited features of marsh harrier and wintering wildfowl associated with Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI using Sizewell Marshes SSSI).

then the Ramsar, SPA, SAC and SSSI sites, and their cited interest features, within the Zol of the Site would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **high** importance, following the EIA-specific assessment methodology.

5.2.7 Given that:

- Sizewell Marshes SSSI and its cited interest features within 5km of the Site are designated on the basis of nationally important habitats, plants, invertebrates and/or bird assemblages;
- foraging marsh harrier and wintering wildfowl associated with the Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI use Sizewell Marshes SSSI; and
- There is a potential for direct and indirect impacts to Sizewell Marshes SSSI breeding and wintering bird assemblage.

then the breeding and wintering bird assemblage of Sizewell Marshes SSSI, and the foraging marsh harrier and wintering wildfowl associated with Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI, within the Zol of the Site would:

- be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **high** importance, following the EIA-specific assessment methodology.

5.2.8 Given that:

- CWSs and their cited interest features within 2km of the Site are designated on the basis of habitats, plant, reptile and/or bird assemblages of county importance; and
- the distance of these sites to the Site, the small-scale nature of the works at the closest point to a CWS (Suffolk Shingle Beaches is 50m east of the Site boundary), along with the implementation of primary and tertiary mitigation measures, ensures there are no direct or indirect impacts on these desginated sites.

then the CWSs and their cited interest features, within the Zol of the propsoed development would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **medium** importance, following the EIA-specific assessment methodology.

b) Feature: plants and habitats

i) Description and distribution

5.2.9 The Site primarily consists of hard standing of extremely limited ecological value. At its northern extent, the Site consists of a species-poor semi-improved grassland field. An area of conifer plantation is located between the grassland field and buildings associated with the Sizewell B Station. Little understorey or ground flora is present in this area due to a lack of light permeating the canopy and the depth of the pine needles.

5.2.10 Coronation Wood comprises a mixed plantation with little understorey or ground flora. To the west of Coronation Wood is a strip of acid grassland and scrub habitat that slopes towards an Alder-lined ditch on the edge of the Sizewell Marshes SSSI.

5.2.11 The habitat strip located between Coronation Wood and Pillbox field is identified as consisting primarily of species-rich marshy grassland with ditches forming part of Sizewell Marshes SSSI.

5.2.12 Pillbox Field comprises former arable farmland that has been allowed to revert to grassland, with an area of willow scrub by a low-lying ditch to the south. Semi-natural broadleaved woodland was identified between Pillbox Field and the Sizewell access road connecting to the strip of semi-natural broadleaved woodland to the south of Coronation Wood.

5.2.13 Part of the Site falls within Sizewell Marshes SSSI, and much of the Site is adjacent to the SSSI. Full details of the habitats present within this area are provided in **Table 6.2**.

ii) Assessment

5.2.14 Given that:

- Coronation Wood provides a current screening function for the Sizewell A and B power stations to the surrounds, and is being lost in its entirety;
- Coronation Wood lacks diversity of flora and is of low ecological value; and

- while of limited ecological value does support a number of species groups (reptiles, birds and bats).

then Coronation Wood would:

- be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **low** importance under the EIA-specific assessment methodology.

5.2.15 Given that:

- the remainder of the Site primarily consists of hard standing; and
- additional habitats present within the Site and ZoI (excluding designated sites) are widespread and common;

then the habitats within the Site and the ZoI (excluding designated sites and Coronation Wood) would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **low** importance under the EIA-specific assessment methodology.

c) Feature: invertebrates

i) Description and distribution

5.2.16 The invertebrate assemblage associated with Sizewell Marshes SSSI forms one of its cited interest features. Full details of this site and its associated interest features is provided in **Table 6.2** and is therefore not repeated here.

5.2.17 Due to the limited value of the remaining habitats present within the Site boundary, specific invertebrate surveys were not undertaken. However, desk study data, review of existing field survey data, and professional judgement indicate that these habitats would support an invertebrate assemblage of common and widespread species typical of the habitats present.

ii) Assessment

5.2.18 Given that:

- the habitats present within the Site and ZoI (excluding Sizewell Marshes SSSI) are of limited value for invertebrate species and support invertebrate assemblages comprising of common and widespread species; and
- there is no land take within Sizewell Marshes SSSI and therefore no direct impact to its invertebrate assemblage.

then the invertebrate assemblage within the ZoI of the Site[17] would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1);
- be of **high** importance within Sizewell Marshes SSSI, following the EIA-specific assessment methodology; and

[17] Note. this excludes the invertebrate assemblage cited as an interest feature of Sizewell Marshes SSSI which is considered as part of the Sizewell Marshes SSSI assessment.

- be of **low** importance within the Site boundary, following the EIA-specific assessment methodology.

d) Feature: amphibians

i) Description and distribution

5.2.19 No desk study records for amphibian species were identified within the Site boundary or the Zol. During surveys, no great crested newts were identified and there was only one record of smooth newt. Habitats present within the Site boundary provide suitable terrestrial habitat for foraging and/or hibernation for a low number of common amphibian species including common frog, smooth newt, and common toad.

ii) Assessment

5.2.20 Given that:

- there is limited suitable habitat present within the Site and Zol; and
- only a single amphibian (smooth newt) was identified from both desk study data and field surveys.

then the amphibian assemblage within the Zol of the Site would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **very low** importance, following the EIA-specific assessment methodology.

e) Feature: reptiles

i) Description and distribution

5.2.21 All four native, widespread, reptile species (adder, common lizard, grass snake and slow-worm) are known to be present within Suffolk (Ref. 6.102) and are listed under Section 41 of the NERC Act (Ref. 6.9) and on the Suffolk's Priority Species and Habitats list (Ref. 6.11).

5.2.22 From desk study and baseline surveys, reptiles have been found wherever habitat is suitable to support them and the habitats present would be used in all lifestage cycles, that is foraging, basking and hibernation.

5.2.23 Along the periphery of the Site boundary (namely within the stockpiling area, Coronation Wood, and Pillbox Field), low populations of common lizard, slow-worm, adder and grass snake were recorded.

5.2.24 These areas, in combination with the wider EDF Energy (NGL) Sizewell Estate, are considered to represent a Key Reptile Site (KRS) based on the number of species and the size of the populations recorded (Ref. 6.96).

ii) Assessment

5.2.25 Given that:

- all four native widespread reptile species have experienced declines during recent decades, primarily due to habtiat loss and fragmentation; and

- individuals within the Site boundary contribute to nationally important reptile populations across the wider EDF Energy (NGL) Sizewell Estate; however, only low populations of reptiles were recorded reflecting the small extent of suitable habitat that will be directly affected.

then the reptile assemblage within the ZoI of the Site would:

- be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **low** importance, following the EIA-specific assessment methodology.

f) Feature: birds

i) Description and distribution

5.2.26 Surveys from within the Site boundary largely identified limited breeding and wintering bird assemblages, likely due to the sub-optimal nature of the habitat (primarily hard standing or made ground). Areas such as Coronation Wood and surrounding open grassland and scrub habitat support a limited range of common and widespread breeding bird species characteristic of woodland habitat.

5.2.27 The breeding bird assemblage forms one of the cited interest features of Sizewell Marshes SSSI and a total of 30 bird species of nature conservation importance were recorded during surveys within Sizewell Marshes SSSI. In addition, Sizewell Marshes SSSI provides functionally linked habitat for foraging marsh harrier during the breeding season and wintering wildfowl, both of which are cited interest features for Minsmere to Walberswick SPA.

ii) Assessment

5.2.28 Given that:

- the Site and ZoI (excluding Sizewell Marshes SSSI) primarily support a bird assemblage of common and widespread species typical of the habitats present;
- there is a limited presence of Schedule 1, Red or Amber List BoCC (Ref. 6.10) within the Site and ZoI (excluding Sizewell Marshes SSSI); and
- although black redstart and peregrine falcon have been recorded breeding within the Sizewell A and B Station complexes, they have done so in the presence of operational noise and disturbance. Annedotal evidence[18] indicates that both species were present during the breeding seasons of 2014 to 2017 during which construction and demolition activity occured at Sizewell A and B power stations. In addition, routine maintenance has occured on building roofs of Sizewell A and B power stations within 500m of nesting peregrine on the existing reactor buildings. Both species are therefore habituated to noise and visual disturbance.

5.2.29 Then the bird assemblage (excluding Sizewell Marshes SSSI) within the Site and ZoI would:

[18] Email correspondence with SWT and Christine Blythe (EDF Energy (NGL)).

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **low** importance, following the EIA-specific assessment methodology.

5.2.30 Given that:

- The breeding bird assemblage is cited as an interest feature for Sizewell Marshes SSSI;
- A total of 30 bird species of nature conservation importance were recorded during surveys; and
- Sizewell Marshes SSSI provides functional habitat for foraging marsh harrier and wintering wildfowl associated with Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI.

5.2.31 then the nesting and wintering bird assemblage of Sizewell Marshes SSSI (including foraging marsh harrier and wintering wildfowl associated with Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI) within the Site and Zol would:

- be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **high** importance, following the EIA-specific assessment methodology.

g) Feature: bats

i) Description and distribution

5.2.32 A review of the Suffolk's Priority Species and Habitats list (Ref. 6.11) identified five species of bat (barbastelle, brown long-eared bat, lesser horseshoe bat, noctule and soprano pipistrelle) listed as priority species for conservation action in the county. All bat species in the UK are protected under Schedule 5 of the W&CA (Ref. 6.6) and, of those species currently known to occur in Suffolk, barbastelle, noctule, soprano pipistrelle, and brown long-eared bat are also protected under Section 41 of the NERC Act (Ref. 6.9).

5.2.33 At least nine species of bat were reported within the desk study; however, no records were identified within the Site boundary. The closest (historic) record was of a common pipistrelle at Rosery Cottage located immediately adjacent to the Site at Pillbox Field. The remaining records were recorded exclusively within Sizewell Wents, 320m to the west of the Site boundary.

5.2.34 Assessments of trees identified 11 trees within Coronation Wood as having the potential to support roosting bats, with a further ten trees with the potential to support roosting bats located in the woodland strip to the south of Coronation Wood. A number of mature willow located between Coronation Wood and Pillbox Field were also considered to have a number of features potentially suitable for roosting bats.

5.2.35 Activity and static detector surveys identified, with the exception of common and soprano pipistrelle activity, primarily low levels of bat activity, although this activity did include the nationally rare barbastelle.

ii) Assessment

5.2.36 Details of the criteria considered during the assessment of bats within the Site and Zol are provided in **Table 6.5**, **Table 6.6** and **Table 6.7** below.

5.2.37 Given that:

- barbastelle are nationally rare, with a restricted distribution, listed on the Suffolk's Priority Species and Habitats list (Ref. 6.11), NERC Act (Ref. 6.9) and on Annex II of the Habitats Directive (Ref. 6.3), and a breeding population is known to be present within the wider EDF Energy (NGL) Sizewell Estate. However, only low levels of activity were recorded within the Site footprint and, while a number of trees with bat roost potential were identified, those with features prefered by barbastelle were limited. Limited foraging potential within the Site was also identified. This species is unlikely to be reliant on habitat within the Site;
- Natterer's bat are nationally common and widespread throughout the UK; Daubenton's bat are nationally common although less common within Suffolk. These species were not definitively recorded during surveys within the Site boundary (and cannot be distinguished from activity records alone); low levels of activity were recorded within the Zol;
- noctule are widespread in Suffolk and only low levels of activity were recorded within the Site boundary; limited roosting and foraging potential was identified. This species is unlikely to be reliant on habitat within the Site;
- Leisler's bat are uncommon and sparse in Suffolk and may be on the edge of their range. Due to overlap in echolocation call characteristics with noctule and serotine, identification of this species is difficult. However, activity levels of big bats (collectively noctule, serotine and Leisler's) are very low, and are likely to include few Leisler's bat, if any;
- Nathusius' pipistrelle are scarce in Suffolk, having only recently been classified as a resident rather than a migrant winter visitor. Only very low levels of activity were recorded within the Site boundary and habitat within the Site is unlikely to be relied upon by this species;
- common and soprano pipistrelle were the most frequently recorded species within the Site boundary and common pipistrelle were recorded potentially emerging from Coronation Wood (and potentially roosting at Rosery Cottage, though the single record is historic). However, overall there is limited roosting and foraging potential within the Site. Therefore, whilst these species use the habitats within the Site they are unlikely to be reliant on them to sustain the local population;
- serotine are widespread in Suffolk. Only very low levels of activity were recorded within the Site boundary and habitat within the Site is unlikely to be relied upon by this species;
- brown long-eared bats are common and widespread in the UK and within Suffolk. Only low levels of activity were recorded wtihin the Site boundary and limited roosting and foraging potential was identified. Though often under-recorded, this species is unlikely to be reliant on habitat within the Site; and

- overall, only low levels of bat activity were recorded and the species recorded are unlikely to be reliant on the habitats and features present within the development footprint.

5.2.38 then the bat assemblage within the ZoI of the Site would:

- be an IEF under CIEEM guidlines (Ref. 6.1); and
- be of **low** importance under the EIA-specific assessment methodology.

Table 6.5. Criteria for assessing the importance of the bat species within the ZoI of the Proposed Development.

Source of data	Published data		Information derived from project data (Inc. local desk-study information) supported by professional judgement based on known species ecological traits			
KEY to SCORE	**Conservation status**	**Status UK/Suffolk**	**Status within Site**	**Breeding roosts (maternity) within the ZoI**	**Hibernation within the ZoI**	**Use of habitats within the ZoI for foraging/ commuting**
Red [score 3]	+ Habs. Dir. Annex II [additional importance applied if species is qualifying feature of a SAC]	Nationally rare	Population apparently centred on the Site (for at least part of the year); 50+ individuals rarest/rarer species	Maternity colony of rarest/rarer species within the Site	Majority of individuals likely to hibernate within the Site and adjacent areas.	High reliance on habitats present within the Site (inside or outwith the construction site boundary).
Amber [score 2]	+ NERC Act	Nationally uncommon /less common	Fewer than 50 rarest/rarer species; 50+ more common species. Note these are very broad estimates.	Maternity colony of more common species within the Site; rarer species outside the Site but within ZoI	Hibernation within ZoI very likely; within the Site probable	Moderate reliance on habitats present within the Site (based on data and species preferences); higher reliance on habitats outside of the Site
Green [score 1]	EPS only	Common/ widespread	Present in lower numbers than above (in low or very low numbers).	No evidence of maternity roost within the Site; more common species outside the Site but within ZoI	Majority of individuals are likely to hibernate outside the Site (or outside the ZoI)	Low reliance on habitats present within the Site; species considered to be generalist and adaptable.

This matrix has been used to apply some consistency across the assessment of different species. It is based on the principles set out in Valuing bats in Ecological Impact Assessment (Ref. 6.103) but does not follow that methodology or scoring closely. The categories are broad and not weighted, and the score applied is based both on information collected and on professional judgement. The boundaries between categories are based on professional judgement. Other interpretations may be equally valid.

*This matrix does not allow for finer definitions of 'Local' importance (district, borough, ZoI, site) for which professional judgement is required.

Table 6.6. Summary of geographical importance

Geographic importance: Local	Geographic importance: County	Geographic importance: Regional	Geographic importance: National
A score of 6-10 This matrix does not allow for finer definitions of 'Local' importance (district, borough, ZoI, site) for which professional judgement is required.	A score of 11 to 13	A score of 14 to 16	A score of 17+ International if species is qualifying feature of a SAC
	The boundaries between these are subjective based on an even distribution of possible scores between the three categories.		

Table 6.7. Summary of the elements considered in determining the geographical context (Ref. 6.1) of each species' importance *

Species**	Conservation Status	Status UK/Suffolk (Ref. 6.105)	Recorded Activity within Site	Breeding Roosts (maternity)	Hibernation	Use of habitats for foraging/commuting	Geographic context of importance
Barbastelle	Habs. Dir. Annex II EPS NERC Act	Nationally rare	Only low levels of activity recorded within the Site.	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Within ZoI, roosts identified from radio-tracking within Grimseys. Outside of the ZoI within the wider landscape[19] a breeding population of barbastelle is known.	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Habitats within ZoI and wider landscape are very likely to support hibernation roost(s)	Habitats within the Site largely unsuitable with limited evidence of use, despite the presence of a barbastelle colony within the wider landscape	County (score of 10)
Daubenton's bat	EPS	Nationally common; widespread in UK/Suffolk	Not recorded within the Site. Low levels of activity recorded within the ZoI.	No evidence within the Site and largely unsuitable.	No evidence within the Site and largely unsuitable.	Foraging associated with water so likely to use habitat within Sizewell Marshes SSSI. Unlikely to be reliant on elements of this habitat within the ZoI.	Local (score of 6)
Natterer's bat	EPS	Nationally common; widespread in UK/Suffolk	Not recorded within the Site. Low levels of activity recorded within the ZoI.	No evidence within the Site and largely unsuitable.	No evidence within the Site and largely unsuitable.	Known to use a wide variety of habitats. Survey data indicates not reliant on habitats within the Site or ZoI.	Local (score of 6)

[19] Note. 'wider landscape' is used to refer to habitats present within the EDF Energy (NGL) Sizewell Estate that fall outside of the 500m ZoI of the proposed development but that are used by the same population of the referenced species.

Species**	Conservation Status	Status UK/Suffolk (Ref. 6.105)	Recorded Activity within Site	Breeding Roosts (maternity)	Hibernation	Use of habitats for foraging/commuting	Geographic context of importance
Noctule	EPS NERC Act	Common in England and widespread in Suffolk	Only low levels of activity recorded within the Site[20].	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Static detector activity within Goose Hill and Sizewell Marshes SSSI suggests the presence of nearby roost(s). Additional woodland blocks within ZoI may support breeding roost(s).	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Woodland blocks within ZoI may support hibernation roost(s).	Uses almost all landscape types and less reliant on linear features. Survey data suggests not reliant on the Site but ZoI and wider landscape is likely to provide habitats on which noctule rely.	Local (score of 7)
Leisler's bat	EPS	Uncommon and sparse in UK/Suffolk; under-recorded. May be on edge of range	If present extremely uncommon[21].	No evidence within the Site and largely unsuitable.	No evidence within the Site and largely unsuitable.	If present extremely uncommon. Will not be reliant on habitat within the Site	Local (score of 7)
Common pipistrelle	EPS	Common and widespread in the UK and Suffolk	Common and widespread across the Site.	Single record of possible emergence from Coronation Wood, with limited roost potential present within this woodland block.	Few winter roosts are known, these tend to be solitary individuals. No evidence within the Site and largely unsuitable. Hibernation within	Generalist, widespread and common	Local (score of 6)

[20] Note 'big bat' data may contain additional noctule passes that were not identified to a specific species.

[21] The identification of Leisler's bat from echolocation calls can be extremely difficult due to the considerable overlap in the characteristics of the two *Nyctalus* spp. (noctule and Leisler's bat) as well as overlap between the calls of Leisler's bat and serotine. Given that both noctule and serotine were recorded within the Site it is not possible to confirm the presence of Leisler's bat.

Species**	Conservation Status	Status UK/Suffolk (Ref. 6.105)	Recorded Activity within Site	Breeding Roosts (maternity)	Hibernation	Use of habitats for foraging/commuting	Geographic context of importance
				Habitats within Site otherwise largely unsuitable. Historically (1994) recorded potentially roosting in Rosery Cottage and recorded using bat box(es) within Sizewell Wents.	tree roosts in ZoI possible.		
Soprano pipistrelle	EPS NERC Act	Common and widespread in UK and Suffolk	Common and widespread across the Site.	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Recorded using bat box(es) within Sizewell Wents. Additional woodland blocks within ZoI may support breeding roost(s).	Few winter roosts are known; these tend to be solitary individuals. No evidence within Site and largely unsuitable. Hibernation within tree roosts in ZoI possible.	Generalist, though with a bias towards riparian habitats.	Local (score of 7)
Nathusius' pipistrelle	EPS	Uncommon, sparse in UK/Suffolk, under-recorded	Only very low levels of activity recorded within Coronation Wood and adjacent habitats only.	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Roost resources within ZoI may be used.	No evidence within the Site and largely unsuitable. Roost resources within ZoI may be used.	Generalist though with a bias towards riparian habitats.	Local (score of 8)
the	EPS	Uncommon in the north of the UK; widespread in	Only very low levels of activity recorded within Coronation	No evidence within the Site. Roosting preference for	No evidence within the Site. Roosting preference for	Site largely open and sub-optimal; considered to be	Local (score of 7)

Species**	Conservation Status	Status UK/Suffolk (Ref. 6.105)	Recorded Activity within Site	Breeding Roosts (maternity)	Hibernation	Use of habitats for foraging/commuting	Geographic context of importance
		Suffolk	Wood and adjacent habitats.	buildings; nature of buildings within the Site unlikely to support roosts. Suitable roost sites largely absent from ZoI.	buildings; nature of buildings within the Site unlikely to support roosts. Suitable roost sites largely absent from ZoI.	present in low numbers in adjacent ZoI and wider landscape	
Brown long-eared bat	EPS NERC Act	Common and widespread in UK and Suffolk	Only very low levels of activity recorded within Coronation Wood and adjacent habitats[22].	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Tree roost(s) may be present within the ZoI.	No evidence within the Site and largely unsuitable. Limited roost potential within Coronation Wood. Uses a range of habitats for hibernation so may hibernate within the ZoI, with small numbers known to hibernate within the wider landscape.	Often under-recorded generalist. Greater than average (<5mppn) activity (for the species) recorded within ZoI on the edge of Goose Hill and at the edge of Broom Covert.	Local (score of 7)

[22] Note that this species is often under-recorded due to the nature of its echolocation calls.

h) Feature: terrestrial mammals

i) Description and distribution

5.2.39 No confirmed otter holts were identified during surveys within Sizewell Marshes SSSI; however, incidental records of otter signs suggest the presence of otter across Sizewell Marshes SSSI with sightings year-round.

5.2.40 Five national otter surveys (from 1977 to 2010) revealed the recovery of otters from virtual extinction in most of England during the early 1970s; positive UK site records increased from 5.8 per cent in 1977-79 to 58.8 per cent in 2009 to 2010 (Ref. 6.104 and Ref. 6.105). Otter populations in Suffolk are also considered to be increasing (Ref. 6.97).

5.2.41 A review of the Suffolk's Priority Species and Habitats list identified otters as a priority species for conservation action in the county (Ref. 6.13). Otters are protected under Schedule 5 and 6 of the W&CA (Ref. 6.6), and Schedule 2 of the Conservation of Habitats and Species Regulations 2010, and are included under Section 41 of the NERC Act (Ref. 6.9), which identifies them as species of principal importance for the purpose of conserving biodiversity in England.

5.2.42 Distribution data for water voles demonstrates that the water vole population in Britain had suffered a long-term decline since 1900 (Ref. 6.106), with a 78% decline between 1989-1990 and 1996-1998 (Ref. 6.105). Further research suggests a further decrease by 50% for the period 1998-2016 (Ref. 6.105). Water vole are present within Sizewell Marshes SSSI which, in conjunction with Minsmere, has been identified as an NKS for water vole.

5.2.43 A review of the Suffolk's Priority Species and Habitats list identified water voles as a priority species for conservation action in the county (Ref. 6.11). Water voles are protected under Schedule 5 of the W&CA (Ref. 6.6), and are included under Section 41 of the NERC Act (Ref. 6.9), which identifies them as species of principal importance for the purpose of conserving biodiversity in England.

5.2.44 Incidental sightings were regularly made of brown hare within the Zol of the Site with a maximum of five individuals recorded on any one occasion. Similarly, incidental sightings were made of both red deer and muntjac deer within the Zol.

ii) Assessment

5.2.45 Given that the water vole:

- is a species of principal importance under the NERC Act (Ref. 6.9) and listed on the Suffolk's Priority Species and Habitats list as a priority species (Ref. 6.11);
- has in recent years undergone one of the most severe declines of any British mammal species (Ref. 6.97);
- the habitat within the Site boundary is sub-optimal and no evidence of water vole was confirmed;
- that Sizewell Marshes SSSI together with Minsmere forms a NKS for water vole;

- Sizewell Marshes SSSI provides good quality habitat for water voles with surveys recording water voles at densities above the national average with (to date) no evidence of persistent mink presence;
- within the ZoI of the Site, the water vole population comprises a small proportion of the population within Sizewell Marshes SSSI; and
- the Site boundary design has ensured that a buffer distance is maintained, where feasible, between the works and where water voles may be located within ditches to the north of the site, and between the Site and majority of Sizewell Marshes SSSI to the west.

5.2.46 then the population of this species within the ZoI of the Site would:

- not be a IEF under the CIEEM guidelines (Ref. 6.1); and
- of **low** importance following the EIA-specific assessment methodology.

5.2.47 Given that the remaining mammal assemblage:

- is, in the case of otter, legally protected, on Suffolk's Priority Species and Habitats list (Ref. 6.11) and a NERC Act species (Ref. 6.9), has an increasing population in England (Ref. 6.104) and Suffolk specifically (Ref. 6.97) and is absent from the Site;
- is, in the case of brown hare, on Suffolk's Priority Species and Habitats list (Ref. 6.11) and a NERC Act species (Ref. 6.9), has a stable and relatively widespread population across Suffolk (Ref. 6.107) and has been recorded at only low numbers within the Site;
- is, in the case of hedgehog, on Suffolk's Priority Species and Habitats list (Ref. 6.11) and a NERC Act species (Ref. 6.9), is considered to be widely distributed throughout Suffolk, although populations are becoming scarcer (Ref. 6.97), and with only a single record identified within the ZoI of the Site;
- is, in the case of harvest mice, on Suffolk's Priority Species and Habitats list (Ref. 6.11) and a NERC Act species (Ref. 6.9), is considered to be widely distributed throughout Suffolk, although populations are declining nationally (Ref. 6.108), and with only a single record identified within the ZoI of the Site; and
- is, in the case of deer, undergoing a period of substantial growth nationally (Ref. 6.109).

5.2.48 Then the otter population within the ZoI of the Site would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **low or very low** importance following the EIA-specific assessment methodology.

5.2.49 The remaining mammal assemblage within the ZoI of the Site would:

- not be an IEF under the CIEEM guidelines (Ref. 6.1); and
- be of **very low** importance following the EIA-specific assessment methodology.

5.3 Summary of ecological features/receptors

5.3.1 Following a review of the known baseline within the Zol, **Table 6.8** lists the ecological features/receptors and identified those which have been carried forward into the detailed assessment. Those carried forward are IEFs of sufficient conservation value (local/ low importance or above) with a potential to be affected by the Proposed Development, hence requiring further consideration within the ES.

5.3.2 There are a number of ecological receptors that, while not of significant nature conservation value within the Zol, do require some consideration because of the legislative protection afforded to them. While not taken forward for detailed assessment, these have been considered further in the ES, where appropriate secondary mitigation is prescribed to ensure legislative compliance.

Table 6.8. Determination of IEFs to be taken forward for detailed assessment

Ecological Receptor	Importance (CIEEM/ EIA Methodology)	Justification	Scope in/out
Statutory Designated Sites (excluding Sizewell Marshes SSSI).	International and National/High	Given the distance of these sites from the Site boundary and the implementation of the primary and tertiary mitigation measures detailed in **Section 6.5** of **ES Volume I: Chapter 6**, no direct or indirect impacts are anticipated on these statutory designated sites. In addition, the HRA Screening Report (Ref. 6.110) conducted an assessment into the Likely Significant Effect (LSE) on Minsmere to Walberswick Heaths and Marshes SPA, SAC, Ramsar site and SSSI, the Outer Thames Estuary SPA, and the Sandlings SPA. This assessment concluded that there would be no impact on these sites during construction or operation, either alone or in combination. Please see the HRA Screening Report for full details of this assessment. Minsmere to Walberswick Heaths and Marshes SPA, SAC, Ramsar site and SSSI, the Outer Thames Estuary SPA, and the Sandlings SPA have therefore been scoped out of the detailed assessment. Note that foraging marsh harrier and wintering wildfowl using Sizewell Marshes SSSI may include individual birds forming part of the Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI population. Whilst significant effects are not envisaged, this is fully assessed under the Sizewell Marshes bird assemblage (see below).	Scoped out
Sizewell Marshes SSSI	National/High	This SSSI contains a large area of lowland, unimproved wet meadows which support outstanding assemblages of invertebrates and breeding birds. Several nationally scarce plants are also present. A small section of Sizewell Marshes SSSI falls within the Site boundary along the proposed pedestrian footpath between the Outage Car Park and Coronation Wood Development Area. This designated site would be susceptible to both direct and indirect impacts and has therefore been scoped into the detailed assessment.	**IEF** **Scoped in**
Non-statutory designated sites	County/Medium	Given the distance of these sites from the Site boundary, the small -nature of the works at the closest point to CWS (Suffolk Shingle Beaches is 50m east of the Site boundary), and the implementation of the primary and tertiary mitigation measures detailed in **Section 6.5** of **ES Volume I: Chapter 6**, no direct or indirect impacts are anticipated on these statutory designated sites. All seven CWSs (Suffolk Shingle Beaches, Sizewell Rigs, Sizewell Levels and Associated Areas, Leiston Common, Southern Minsmere Levels, Dower House and Aldringham to Aldeburgh Disused Railway Line) have therefore been scoped out of the detailed assessment.	Scoped out
Coronation Wood	Local/Low	Coronation Wood is asssessed as species-poor and of limited ecological value and did not support any rare or notable plant species. While Coronation Wood would be lost due to the Proposed	**IEF** **Scoped in**

Ecological Receptor	Importance (CIEEM/ EIA Methodology)	Justification	Scope in/out
		Development, this loss will be mitigated through the primary mitigation detailed in **Section 6.5** of **ES Volume I: Chapter 6**; however, it would take some time before the primary mitigation (replacement planting) has established. In addition, Coronation Wood does provide support for some species. In order to ensure the impacts on this receptor are considered appropriately, it has been scoped into the detailed assessment.	
Grassland and scrub surrounding Coronation Wood	Local/Low	The grassland and scrub surrounding Coronation Wood are asssessed as species-poor and of limited ecological value and did not support any rare or notable plant species. These habitats have therefore been scoped out of the detailed assessment.	Scoped out
Grassland fields within stockpiling area	Local/Low	This area consists of made ground following the construction of Sizewell B station, divided by two narrow (less than 10m) belts of planted Alder. This area is species-poor and does not support any notable species. This habitat has therefore been scoped out of the detailed assessment.	Scoped out
Pillbox Field and surrounding habitats	Local/Low	Pillbox Field comprises former arable farmland that has been allowed to revert to grassland, with an area of willow scrub by a low-lying ditch to the south, and a defunct hedgerow along the southern and western boundaries of Pillbox Field. Semi-natural broadleaved woodland was identified between Pillbox Field and the Sizewell access road connecting to the strip of semi-natural broadleaved woodland to the south of Coronation Wood. This area is species-poor and does not support any notable species. This habitat has therefore been scoped out of the detailed assessment.	Scoped out
Invertebrate assemblage	Within Sizewell Marshes and coastal vegetation: National/High Within the Site boundary: Local/Low	Habitats within the Site boundary were assessed as suitable to support common invertebrate assemblages, typical of the habitats present. No notable or rare species were recorded from within the Site boundary. Sizewell Marshes SSSI, on the other hand, is cited for its invertebrate assemblage. Due to the primary and secondary mitigation detailed in **Section 6.5** of **ES Volume I: Chapter 6**, no significant impacts are predicted on the invertebrate assemblage within Sizewell Marshes SSSI and the Site boundary. This receptor has therefore been scoped out of the detailed assessment.	Scoped out
Reptile assemblage	Local/Low	The reptile assemblage within the ZoI of the Proposed Development, forms part of the reptile population within the wider EDF Energy (NGL) Sizewell Estate, which is reported to constitute a KRS; however, only low populations of reptiles were recorded within the Site boundary, reflecting the small extent of suitable habitat that will be directly affected. Reptiles were recorded throughout the ZoI and would be susceptible to habitat loss and incidental mortality. Four native reptile species (adder, common lizard, grass snake and slow-worm) are recorded as priority species on Suffolk's Priority Species and Habitats list (Ref. 6.11) and as species of principal importance Section 41 of the NERC Act (Ref. 6.9). The reptile assemblage has therefore been scoped into the detailed assessment.	**IEF** **Scoped in**

Ecological Receptor	Importance (CIEEM/ EIA Methodology)	Justification	Scope in/out
Bat assemblage	Local/Low	At least nine bat species have been recorded within the Site. Several trees were identified within Coronation Wood that have a high or medium potential to support roosting bats, as does the strip of woodland to the south of Coronation Wood. At Rosery Cottage (adjacent but outside the Site boundary) there was a desk-study record (from 1994) for common pipistrelle. The proposed works will also involve the demolition of a number of additional modern buildings associated with the existing Sizewell B power station facilities which will be relocated as part of the Proposed Development, likely to be sub-optimal for roosting bat species. A detailed external (and internal where possible) assessment of these buildings and their potential to support roosting bats was undertaken in March 2019. The results are not included here, but will be submitted to ESC separately. A detailed survey and confirmation of any roosting bats and their status will be carried out prior to any demolition works.. Bat activity within the Site boundary was generally low, and primarily consisted of common and soprano pipistrelle. All other species were recorded at low levels of activity (including the nationally rare barbastelle), with the timing and level of use suggesting occasional use of this habitat for foraging and commuting. The degree of sensitivity bats display varies between species; however, it is recognised that anthropogenic activities can negatively impact all bat species. All bat species in the UK are protected under Annex IV of the Habitats Directive (Ref. 6.3), transposed to UK law under the Conservation of Habitats and Species Regulations (Ref. 6.8). Additional relevant legislation includes the W&CA (Ref. 6.6) and the NERC Act (Ref. 6.9). While surveys demonstrated that the habitats within the Site boundary were not of significant value to bats, there is the risk to potential roost sites through the loss of Coronation Wood. The bat assemblage is therefore scoped into the detailed assessment.	**IEF Scoped in**
Bird assemblage using Sizewell Marshes SSSI	National/High	The breeding bird assemblage is cited as an interest feature for Sizewell Marshes SSSI. A total of 30 bird species of nature conservation importance were recorded during surveys. Sizewell Marshes SSSI provides functionally linked habitat for foraging marsh harrier during breeding season and wintering wildfowl, both of which are cited interest features for Minsmere to Walberswick SPA. Nesting and wintering birds within Sizewell Marshes SSSI has therefore been scoped into the detailed assessment. This includes marsh harrier and wintering wildfowl using Sizewell Marshes SSSI may include individual birds forming part of the Minsmere to Walberswick Heaths and Marshes SPA, Ramsar and SSSI population.	**IEF Scoped in**
Nesting and wintering birds	Within the Site boundary: Local/Low	The nesting and wintering bird assemblage identified within the Site boundary is representative of the habitats present, and the populations observed on site are comparable to the populations within	Scoped out

Ecological Receptor	Importance (CIEEM/ EIA Methodology)	Justification	Scope in/out
		the wider area. The bird species observed on site are not predicted to be significantly affected by construction or operational impacts from the Proposed Development due to the large areas of suitable nesting and foraging habitat present in close proximity. Black redstart and peregrine (both Schedule 1 species) have been recorded nesting within Sizewell A and B power stations, although outside the Site boundary. Anecdotal evidence indicates both species have been present during 2014 to 2017 during which construction and demolition activity occured at Sizewell A and B power stations. In addition, routine maintenance has occured on building roofs of Sizewell A and B power stations within 500m of nesting peregrine on the existing reactor buildings. Both species are therefore habituated to noise and visual disturbance. In addition, there is sufficient habitat along the coastal fringe, north of the Site, and areas of rough ground within Sizewell A and B nuclear power stations for foraging black redstart, whilst peregrines forage over a wide area not restricted to the immediate vicinity of the Sizewell A and B power stations. Nesting and wintering birds within the Site boundary are therefore scoped out of the detailed assessment. However, nesting birds are protected under the W&CA (Ref. 6.6). As such, there may be the potential for impacts on nesting birds, should works be undertaken during the nesting bird period (end of February to end of August inclusive). Secondary mitigation measures have therefore been described in **Section 6.7** of **ES Volume I: Chapter 6** to adequately protect this receptor.	
Water voles	Local/Low	Most the habitat within the Site boundary consists of hard standing or disturbed ground, largely unsuitable for water vole, however, the neighbouring Sizewell Marshes SSSI is known to harbour a significant population of this species. The Site boundary design has ensured that a 25m buffer distance is maintained between the works and where water voles may be located within ditches to the north of the Site, as well as maintaining a buffer area between the Proposed Development and majority of Sizewell Marshes SSSI to the west, and any other watercourses or ditches (with the exception of the proposed pedestrian footpath between Pillbox Field and Coronation Wood). In addition to this, the pedestrian footbridges that will connect the Outage Car Park with the Western Access Road at the Coronation Wood Development Area will be installed over two existing ditches that lie adjacent and connect to Sizewell Marshes SSSI. Surveys of ditches in this location identified sub-optimal habitat. The presence of water voles in this location cannot be ruled out; however, the number of water voles that may be affected by the Proposed Development will be low based on the sub-optimal habitat and would not be a significant contributor to the population within Sizewell Marshes SSSI. Water voles have therefore been scoped out of the detailed assessment. Water vole are listed on Schedule 5 of the W&CA (Ref. 6.6), as well as is listed as a priority species	Scoped out

Ecological Receptor	Importance (CIEEM/ EIA Methodology)	Justification	Scope in/out
		on Suffolk's Priority Species and Habitats list (Ref. 6.11) and as a species of principal importance under Section 41 of the NERC Act (Ref. 6.9). Therefore, to ensure compliance to the legal protection afforded to this species, appropriate secondary mitigation measures have been described in **Section 6.7** of **ES Volume I: Chapter 6**.	
Otters	Local/Low	Otters were not confirmed within the ZoI during baseline surveys; however; Sizewell Marshes SSSI is known to contain a breeding population and comprises a sizeable area suitable for otters. Due to the primary and tertiary mitigations described in **Section 6.** of **ES Volume I: Chapter 6**, the effects of the proposed development on this species are unlikely to be significant and otters have therefore been scoped out of the detailed assessment. Otters are protected under Schedule 5 and 6 of the W&CA (Ref. 6.6), and Schedule 2 of the Conservation of Habitats and Species Regulations (Ref. 6.8), and are included within Section 41 of the NERC Act (Ref. 6.9). Secondary mitigation has therefore been described in **Section 6.7** of **ES Volume I: Chapter 6** to adequately protect this receptor.	Scoped out
Hedgehog	Local/Very Low	Most the Site is suboptimal for hedgehogs and there were no records of hedgehogs within the Site footprint. Coronation Wood, the scrub and tree belts present provide potentially suitable habitat for hedgehogs and this species could be present within the Site boundary. While hedgehogs are likely to be found within or adjacent to the Site, there is sufficient adjacent habitat to support this species and the effects of the proposed development on this species is unlikely to be of significance. Hedgehog has therefore been scoped out of the detailed assessment. Hedgehog is a Suffolk Priority Species and Habitats species (Ref. 6.11) and is listed on Section 41 as a species of principal importance (Ref. 6.9).	Scoped out
Brown hare	Local/Very Low	Two to three individual brown hares were recorded on site during surveys. The population found within the Site boundary is not a significant contribution to the potential wider population within the ZoI. The effects of the proposed development on this highly mobile species are unlikely to be significant and brown hare have therefore been scoped out. The brown hare is a Suffolk Priority Species and Habitats priority species (Ref. 6.11) and is listed as a NERC Act (Ref. 6.9) species of principal importance for the purpose of conserving biodiversity.	Scoped out
Deer assemblage	Local/Very Low	Deer species such as red deer and muntjac are widespread and common across the EDF Energy (NGL) Sizewell Estate. The deer assemblage has therefore been scoped out of the detailed assessment.	Scoped out

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ANNEXES

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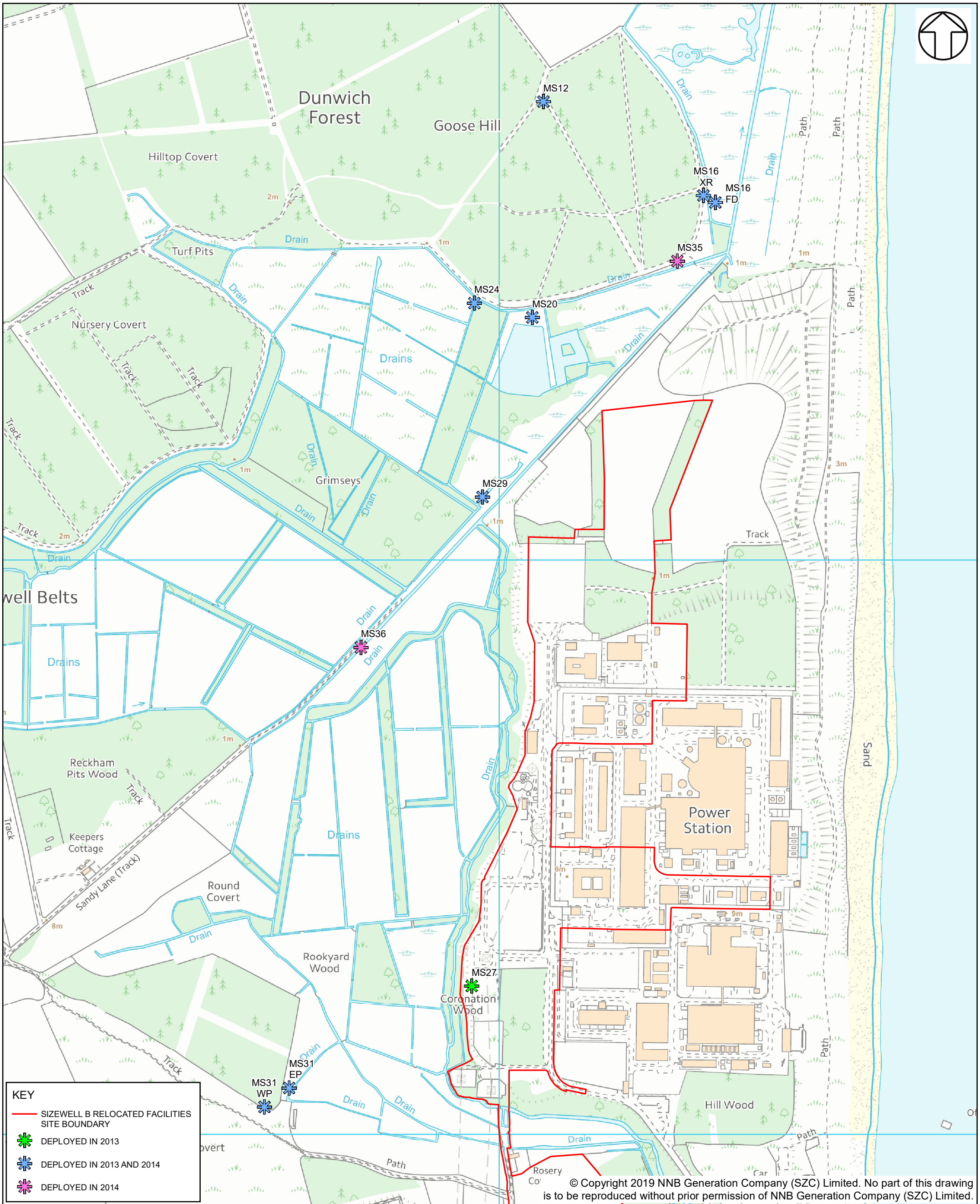
ANNEX 6.1 FIGURES



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DRAWN: R.M.

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DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
TERRESTRIAL ECOLOGY AND ORNITHOLOGY

SCALE BAR
0 50 100 150 200 250 300 M

EDF ENERGY
NUCLEAR GENERATION LIMITED

KEY

- SIZEWELL B RELOCATED FACILITIES SITE BOUNDARY
- OCTOBER 2015 COMMON PIPISTRELLE PASSES
- OCTOBER 2015 MYOTIS SPP PASSES
- OCTOBER 2015 SOPRANO PIPISTRELLE PASSES
- SEPTEMBER 2015 BROWN LONG-EARED PASSES
- SEPTEMBER 2015 COMMON PIPISTRELLE PASSES
- SEPTEMBER 2015 MYOTIS SPP PASSES
- SEPTEMBER 2015 NOCTULE PASSES
- SEPTEMBER 2015 NYCTALUS SPP PASSES
- SEPTEMBER 2015 SOPRANO PIPISTRELLE PASSES
- PILLBOX FIELD AND CORONATION WOOD TRANSECT ROUTE

DRAWING TITLE:
LOCATION OF BAT PASSES RECORDED DURING PILLBOX FIELD AND CORONATION WOOD TRANSECT IN SEPTEMBER AND OCTOBER 2015

NOT PROTECTIVELY MARKED

DRAWING NO:
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DATE: MAR 2019 | DRAWN: R.M. | SCALE : 1:3,000 @A3

DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
TERRESTRIAL ECOLOGY AND ORNITHOLOGY

SCALE BAR
0 50 100 150 200 M

EDF ENERGY
NUCLEAR GENERATION LIMITED

DRAWING TITLE:
TREES WITH BAT ROOST POTENTIAL

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 6.3

DATE: MAR 2019
DRAWN: R.M.
SCALE : 1:6,000 @A3

DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
TERRESTRIAL ECOLOGY AND ORNITHOLOGY

SCALE BAR
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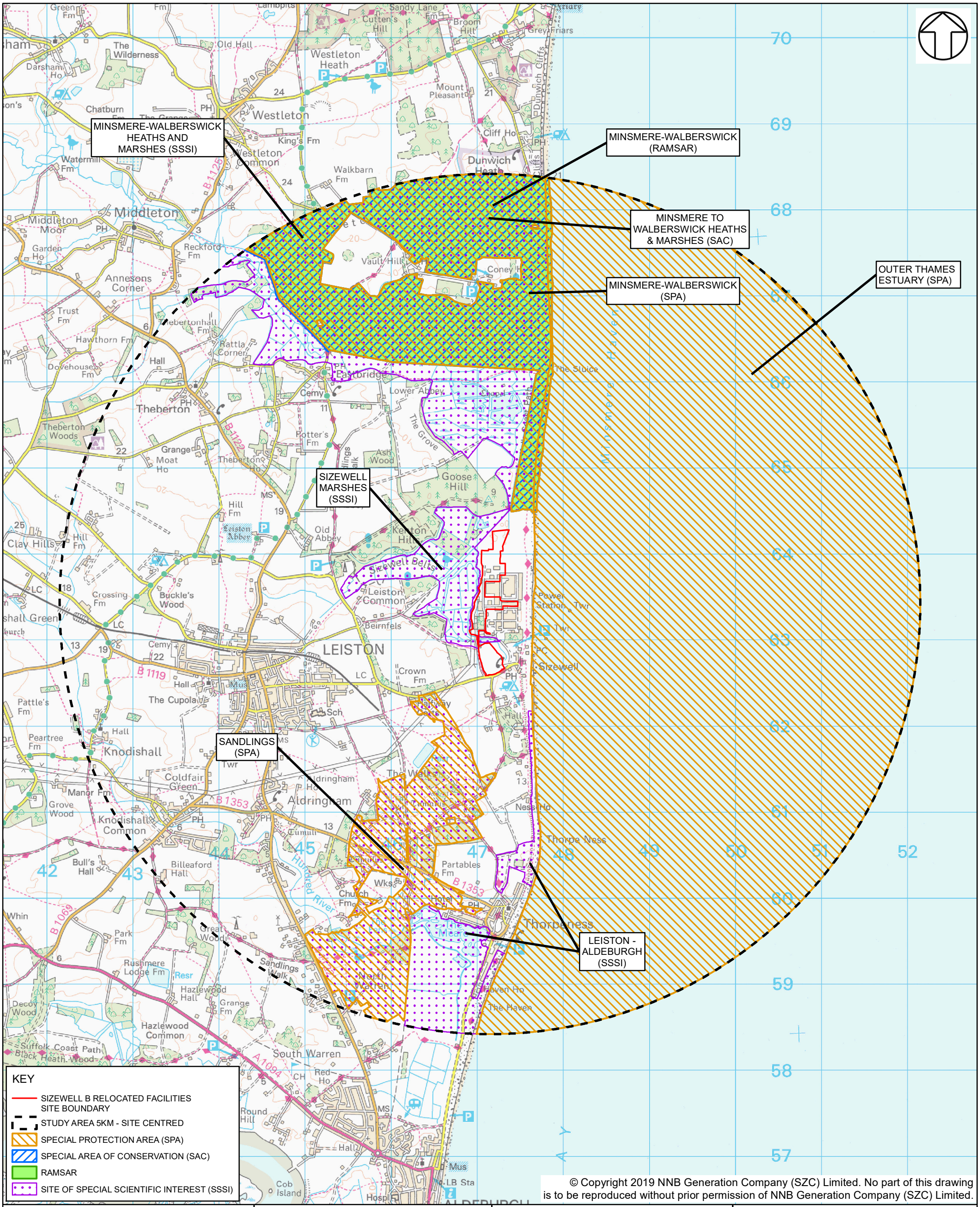
NUCLEAR GENERATION LIMITED



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STATUTORY DESIGNATED SITES WITHIN 5KM

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DATE: MAR 2019

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DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
TERRESTRIAL ECOLOGY AND ORNITHOLOGY

SCALE BAR
0 0.5 1 1.5 2 KM

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SOUTHERN MINSMERE LEVELS

SIZEWELL LEVELS AND ASSOCIATED AREAS

SUFFOLK SHINGLE BEACHES

LEISTON COMMON

SIZEWELL LEVELS AND ASSOCIATED AREAS

SIZEWELL RIGS

DOWER HOUSE

ALDRINGHAM TO ALDEBURGH DISUSED RAILWAY LINE

KEY

- SIZEWELL B RELOCATED FACILITIES SITE BOUNDARY
- STUDY AREA 2KM - SITE CENTRED
- COUNTY WILDLIFE SITES WITHIN 2KM

DRAWING TITLE:
COUNTY WILDLIFE SITES WITHIN 2KM

NOT PROTECTIVELY MARKED

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DATE: MAR 2019

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DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
TERRESTRIAL ECOLOGY AND ORNITHOLOGY

SCALE BAR
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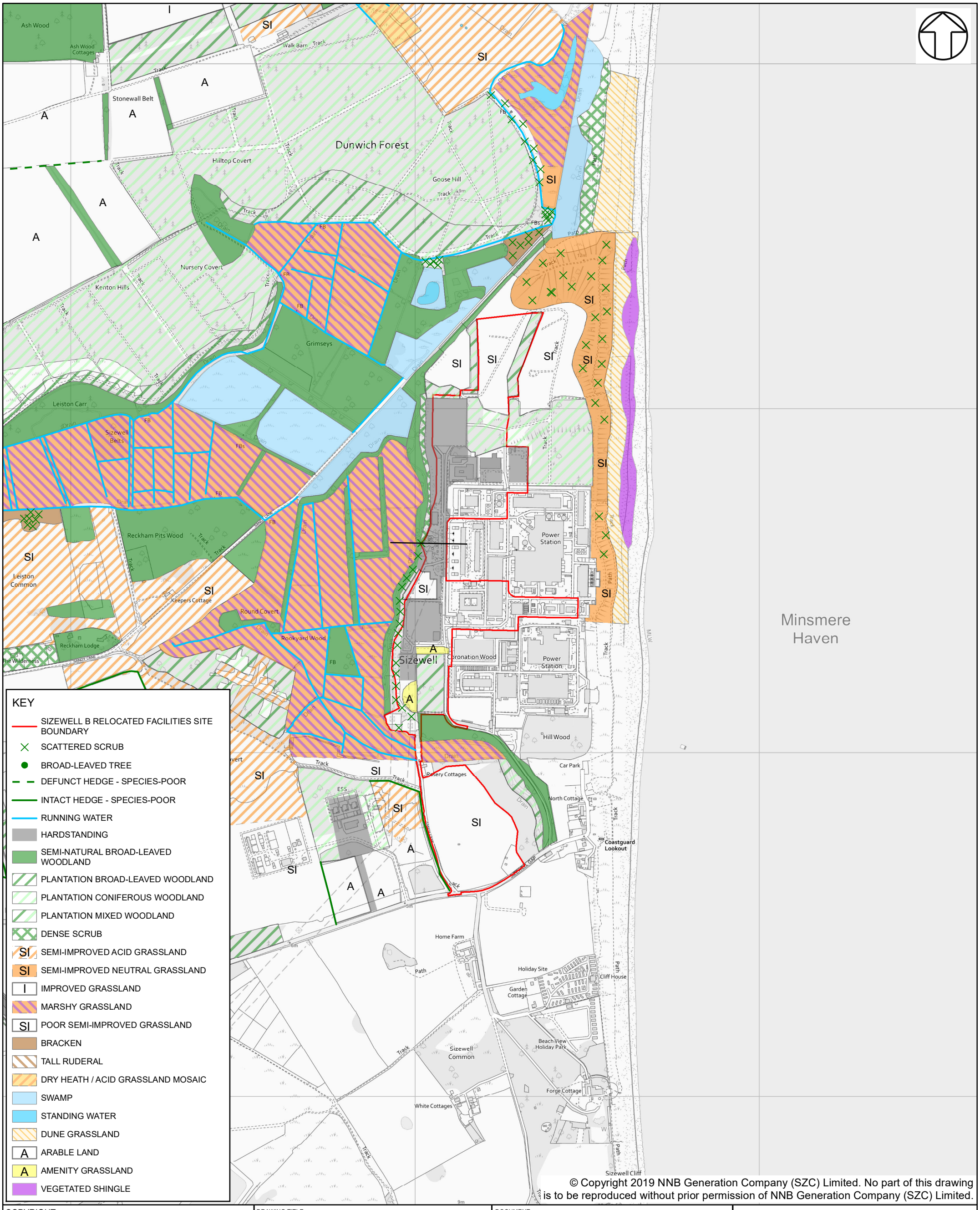
NUCLEAR GENERATION LIMITED



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DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
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SCALE BAR
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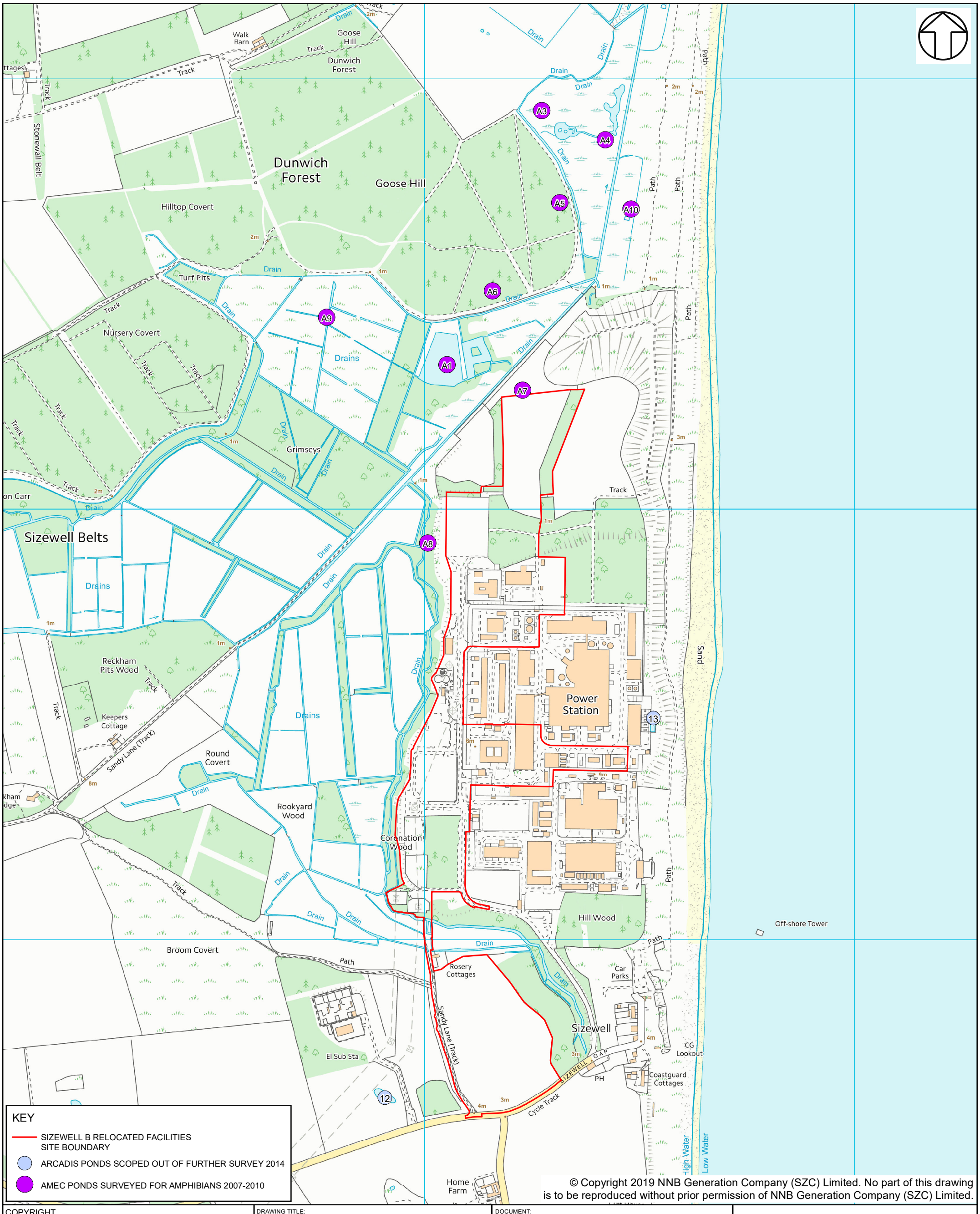
NUCLEAR GENERATION LIMITED



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AMPHIBIAN SURVEY LOCATIONS

NOT PROTECTIVELY MARKED

DRAWING NO:
FIGURE 6.7

DATE: MAR 2019 | DRAWN: R.M. | SCALE : 1:8,000 @A3

DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
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SCALE BAR
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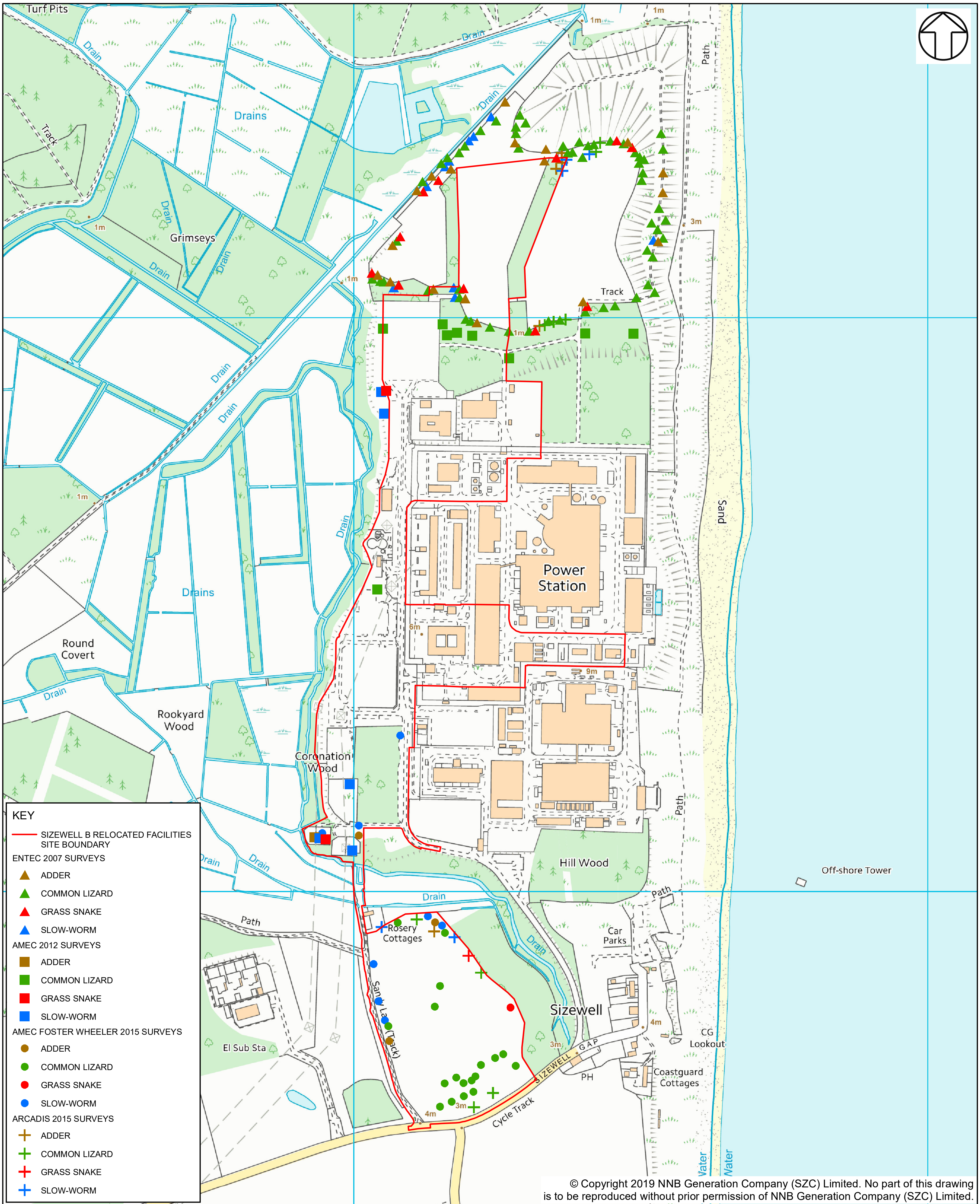
NUCLEAR GENERATION LIMITED



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REPTILE SURVEY RESULTS

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DRAWING NO:
FIGURE 6.8

DATE:	DRAWN:	SCALE :
MAR 2019	R.M.	1:6,000 @A3

DOCUMENT:
SIZEWELL B RELOCATED FACILITIES
ENVIRONMENTAL STATEMENT
CHAPTER 6
TERRESTRIAL ECOLOGY AND ORNITHOLOGY

SCALE BAR
0 50 100 150 200 250 300 M

NUCLEAR GENERATION LIMITED

ANNEX 6.2 METHODOLOGY

CONTENTS

TABLES

FIGURES

For figures please see **ES Volume II: Appendix 6.1, Annex 6.1**.

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1. INTRODUCTION

1.1 Purpose of Annex

1.1.1 This Annex sets out the methodologies employed during ecological surveys undertaken within the Site and/or the species-specific Zone of Influence (Zol). Survey work was primarily undertaken by Wood Group (formerly Entec and Amec Foster Wheeler) and Arcadis Consulting (UK) Limited (formerly Hyder Consulting and hereafter referred to as 'Arcadis'). Additional field data recorded from within the Site and/or each species-specific Zol was reviewed, this work having been undertaken by Corylus Ecology, Galloper Wind Farm Ltd, The Ecology Consultancy and Royal Haskoning DHV.

1.1.2 Where full details of the survey methodologies have been included within reports that have been produced separately, the full methodology has not been repeated here, although a summary has been provided. Published reports produced by Arcadis and Wood Group (and other secondary data sources) have been included within **Annex 6.5** and **6.6** respectively of **ES Volume II: Appendix 6.1**.

1.1.3 The legislation, baseline, assessment of potential effects, mitigation and monitoring relating to badgers has been reported within a separate confidential appendix (**ES Volume II: Appendix 6.2**).

1.2 Survey Area

1.2.1 Data considered during the ecological assessment of the Proposed Development and Zol has been drawn from a wide pool of ecological survey work. This work has been undertaken across a much wider area than that which has been considered within the **ES Volume I: Chapter 6: Terrestrial Ecology and Ornithology**. These survey data sources have been reviewed and information relevant to the Site and the receptor-specific Zols has been extracted. While only those elements of survey work which are relevant to the proposed activities have been taken from the available pool of survey work, it should be noted that it is not possible, in all scenarios, for this information to be considered in isolation from the ecological resources known to be present within the wider EDF Energy (NGL) Sizewell Estate.

2. FIELD SURVEYS - APPROACH

2.1.1 A wide variety of ecological survey work has been undertaken fully or partially within the Site boundary and/or its immediate surrounds (i.e. within the EDF Energy (NGL) Sizewell Estate), including within the species-specific ZoIs.

2.1.2 A full list of the data sources used to support the impact assessment is provided in **Table 6.2.1** below. Baseline data has been compiled from a wide variety of ecological survey work from 2007 to 2019. Evidence collated during the ten years of survey work demonstrates that there has been no material change to the Site and/or its immediate surrounds and that the distribution of habitats and species have not significantly altered over the ten year period. It therefore provides a comprehensive ecological baseline sufficient for ecological impact assessment purposes.

2.1.3 For further justification for survey data robustness for the purpose of this ES, please refer to **Table 6.7** within **ES Volume I: Chapter 6: Terrestrial Ecology and Ornithology.**

Table 6.2.1. Data sources reviewed, by species group

Species Group	Data Source (report or survey) *	Year
Plants and Habitats	Entec (Ref. 6.2.1) – Sizewell C Extended Phase 1 Survey Report	2008
	Entec (Ref. 6.2.2) – Sizewell C National Vegetation Classification (NVC) Report	2008
	Hyder (Ref. 6.2.3) – Sizewell C NVC Survey	2014
	Royal Haskoning (Ref. 6.2.4) – Sizewell B Power Station ISFSI and Car Park Extension Ecological Scoping Report	2008
	Vegetation Survey and Assessment (Ref. 6.2.5) – Sizewell C Nuclear Power Station Baseline Bryophyte Assessment.	2015
	Biocensus (Ref. 6.2.6) – Lichen Survey at Sizewell C Power Station	2015
	Arcadis (2015) – Relocated Facilities: Extended Phase 1 surveys of Pillbox Field, Coronation Wood and associated habitats**	2015
	Arcadis – Relocated Facilities: Phase 1 habitat survey of the pedestrian access options from Pillbox Field to Coronation Wood**	2019
Invertebrates	Amec (Ref. 6.2.7) – Sizewell C Invertebrate Survey Report	2012
	Mellings (Ref. 6.2.8) – Sizewell C Invertebrate Survey	2014
Amphibians	Entec (Ref. 6.2.9) – Sizewell C Great Crested Newt Survey Report	2008
	Hyder (Ref. 6.2.10) – Sizewell C Great Crested Newt Survey	2014
Reptiles	Entec (Ref. 6.2.11) – Sizewell C Reptile Survey Report	2008
	Amec (Ref. 6.2.12) – Relocated Facilities Coronation Wood Reptile Survey Report	2012
	Amec Foster Wheeler (Ref. 6.2.13) – Relocated Facilities Coronation Wood and Pillbox Field Survey Report	2015
	Arcadis (Ref. 6.2.14) – Sizwell C Reptile Mitigation Plan	2015

Species Group	Data Source (report or survey) *	Year
	Arcadis (Ref. 6.3.15) – Sizewell C Project Reptile Baseline Technical Appendix (in draft)	In draft, not dated
	Royal Haskoning (Ref. 6.2.16) – Sizewell B Power Station ISFSI and Car Park Extension Reptile Survey Report	2008
Ornithology	Entec (Ref. 6.2.17) – Sizewell C First Interim Bird Report	2008
	Entec (Ref. 6.2.18) – Sizewell C Marsh Harrier Survey Report	2008
	Entec (Ref. 6.2.19) – Sizewell C Breeding Bird Survey Report	2010
	Amec (Ref. 6.2.20) – Sizewell C Black Redstart Breeding Bird Report	2011
	Amec (Ref. 6.2.21) – Sizewell C Little Tern Report	2011
	Amec (Ref. 6.2.22) – Sizewell C Harrier and Bittern Survey Report	2011-2012
	Amec (Ref. 6.2.23) – Sizewell C Seabird Report	2012
	Amec (Ref. 6.2.24) – Sizewell C Arable Reversion Areas, Breeding Bird Survey Report	2012
	Hyder (Ref. 6.2.25) – Sizewell C Red-throated diver Survey Report	2013
	Hyder Sizewell C 2012 and 2013 seabird surveys**	2012 and 2013
	Arcadis Sizewell C 2014 and 2015 marsh harrier surveys**	2014 and 2015
	Arcadis (Ref. 6.2.26) – Relocated Facilities Coronation Wood Survey Report	2015
	Galloper Wind Farm Limited (Reg. 6.2.27) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014
Bats	Entec (Ref. 6.2.28) – Sizewell C Bat Survey Report	2007
	Entec (Ref. 6.2.29) – Sizewell C Bat Survey Report	2008
	Entec (Ref. 6.2.30) – Sizewell C Bat Survey Report	2009
	Entec (Ref. 6.2.31) – Sizewell C Bat Survey Report	2010
	Amec (Ref. 6.2.32) – Sizewell C Bat Survey Report	2011
	Amec (Ref. 6.2.33) – Relocated Facilities Coronation Wood Bat Survey Report	2012
	Arcadis (Ref. 6.2.34) – Sizewell C Ecology Automated (SM2) Bat Detector Monitoring Report 2013-2014	2013 and 2014
	Galloper Wind Farm Limited (Ref. 6.2.27) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014
	The Ecology Consultancy (Ref. 6.2.35) – Galloper Wind Farm, Sizewell, Suffolk Bat and Reptile Monitoring Report	2015
	Corylus Ecology (Ref. 6.2.36) – Sizewell C Radio-tracking Study	2016
	Arcadis (2015) – Relocated Facilities Pillbox Field and Coronation Wood Bat Activity Transects**	2015
	Arcadis (2015 and 2016) – Relocated Facilities Coronation Wood Tree Assessment Surveys**	2015 and 2016
	Arcadis (2016) – Relocated Facilities Stockpiling Area Tree Assessment Surveys**	2016

Species Group	Data Source (report or survey) *	Year
	Arcadis – Relocated Facilities: Bat survey in relation to pedestrian access from Pillbox Field**	2019
Other Mammals	Amec (Ref. 6.2.37) – Otter Survey Report	2015
	Amec (Ref. 6.2.38) – Water Vole Survey Report	2007 to 2010
	Hyder (Ref. 6.2.39) – Otter Survey Report	2007 to 2009
	Arcadis (2015) – Otter and Water Vole Survey in Sizewell Marshes SSSI**	2015
	Arcadis – Relocated Facilities: Water vole survey in relation to pedestrian access from Pillbox Field**	2019

*Details of the methodologies and results for these surveys are provided in the relevant reports detailed above and a summary is provided in the sections below.

**These surveys have not been reported separately. The relevant details of these surveys are provided in the sections below.

2.1.4 For a list of standards and guidance documents applicable to the surveys, please refer to **Section 6.2** within **ES Volume I: Chapter 6: Terrestrial Ecology and Ornithology.** Full details of the methodologies employed can be found in the relevant survey report(s) provided in **Annex 6.5** and **Annex 6.6** of **ES Volume II: Appendix 6.1** while a summary is provided below. For a small number of surveys, detailed reports have not been produced elsewhere. On these occasions, full details of the methodologies employed are provided here.

i. Plants and habitats

2.1.5 Habitats within the development footprint and surrounding area were surveyed in both 2007 and 2008 as part of a wider Phase 1 habitat survey carried out by Wood Group (Ref. 6.2.1); this information was updated on 18 August 2015 by Arcadis.

2.1.6 NVC surveys were undertaken across selected areas of the EDF Energy (NGL) Sizewell Estate by Wood Group in 2007 (Ref. 6.2.2) and along the coastal strip and the northern corner of Sizewell Marshes Site of Special Scientific Interest (SSSI) within the ZoI to the east and north of the Site boundary by Arcadis in 2014 (Ref. 6.2.3).

2.1.7 Additional surveys were undertaken along the coastal strip within the ZoI in 2015 to assess the bryophyte (Ref. 6.2.5) and lichen (Ref. 6.2.6) communities present.

2.1.8 Detailed methodologies are provided in the relevant reports in the Annexes specified in this section.

2.1.9 A detailed Phase 1 habitat survey was undertaken by Arcadis in 2019 in accordance with Joint Nature Conservation Committee (JNCC) guidelines (Ref. 6.2.40) to specifically look at the three footpath options from Pillbox Field. Note that the Phase 1 habitat survey undertaken for the three pedestrian footpath options from Pillbox Field was undertaken at a sub-optimal time of year. A further NVC survey of the Sizewell Marshes SSSI section to be impacted has been planned later in the year (considering seasonality requirements).

ii. Invertebrates

2.1.10 Extensive invertebrate surveys were undertaken by Wood Group in 2007, 2009 and 2010 (Ref. 6.2.7), and on behalf of Arcadis in 2014 (Ref. 6.2.8). Surveys have primarily been undertaken within Sizewell Marshes SSSI (which lies directly to the west of the Site boundary and is, in part, designated due to the presence of an outstanding assemblage of invertebrates) and the coastal strip directly to the east of the Site boundary.

2.1.11 Survey sampling methods employed at each sample site varied according to the circumstances and survey aim. These methods are detailed in the relevant reports specified in this section.

iii. Amphibians

2.1.12 No surveys for great crested newts (*Triturus cristatus*) were undertaken within the Site, due to the absence of suitable habitat; however, great crested newt surveys were undertaken within the ZoI for this species by Wood Group and Arcadis in 2008 and 2014 respectively. The locations of surveyed water bodies are illustrated on Figure 3.1 in Ref. 6.2.9 and Figure 4 in Ref. 6.2.10.

2.1.13 Ponds and ditches were initially identified from aerial photographs and Ordnance Survey (OS) maps, and a Habitat Suitability Index (HSI) assessment was then undertaken to identify the potential suitability of each water body for great crested newts. Where water bodies were identified for further assessment, presence/absence surveys were undertaken.

2.1.14 Each water body identified for further assessment was surveyed on a minimum of four occasions, with an additional two survey visits undertaken where great crested newts were found to be present, to allow an estimate of population size to be made. The three preferred standard survey methods (torchlight survey, bottle-trapping and egg search) were carried out on each visit to the ponds, wherever possible, although in some cases fewer survey techniques (the most appropriate one(s) to the pond) were used.

2.1.15 Full details of the methodologies employed during these surveys are provided in the relevant reports specified in this section.

iv. Reptiles

2.1.16 Within the Site, reptile surveys were undertaken on land to the north of Sizewell B (proposed for stockpiling during construction) (Ref. 6.2.14), Pillbox Field (Ref. 6.2.13 and Ref. 6.2.14), the area now consisting of the extended western car park and surrounding habitats (Ref. 6.2.16), and Coronation Wood (Ref. 6.2.12 and Ref. 6.2.13).

2.1.17 Forty-three reptile refugia were deployed in the area now consisting of the extended western car park and surrounding habitats, as illustrated on Figure 2.1 in Ref. 6.2.16, on 8 September 2008. Thirteen survey visits were subsequently undertaken between 12 September and 3 October 2008 (Ref. 6.2.16).

2.1.18 In 2012, reptile surveys were undertaken within Coronation Wood and the surrounding habitat. Fifty-four reptile refugia were deployed, as illustrated on Figure 3.1 in Ref. 6.2.12, on 4 July 2012 and seven survey visits were subsequently undertaken between

August and early October 2012. Further surveys were undertaken in 2015, during which 85 reptile refugia were deployed and 15 survey visits undertaken between 23 September and 2 November 2015 (Ref. 6.2.13).

2.1.19 In 2015, reptile surveys were undertaken within the area proposed for stockpiling during construction. For the purposes of these surveys, the area was split into the areas of grassland, and the planted mound immediately adjacent to the red-line boundary, and the area of planted conifer. One hundred reptile refugia were deployed at each of these locations in March 2015, and 32 survey visits were subsequently undertaken between March and October 2015 (Ref. 6.2.14).

2.1.20 An Extended Phase 1 survey of Pillbox Field and associated habitats was undertaken by Arcadis on 18 August 2015 and the presence of habitats suitable for reptiles considered. Subsequently, 45 reptile refugia were deployed in August 2015 and seven survey visits were undertaken between 8 September and 20 October 2015 (Ref. 6.2.14). An additional 94 tins were deployed in Pillbox Field by Wood Group in 2015, and 15 survey visits were undertaken between 23 September and 2 November 2015 (Ref. 6.2.13).

2.1.21 During the Galloper Wind Farm Eastern Super Grid Transformer Project, a reptile translocation programme was undertaken. This programme, undertaken, between June and mid-August 2013 entailed 71 visits (Ref. 6.2.27).

2.1.22 The reptile survey data was used to estimate the typical density of the four recorded reptile species within areas of reptile habitat within the Site and ZoI. Surveys within Coronation Wood and Pillbox Field were undertaken a little later than is considered optimal, and therefore calculation of the typical density and estimated numbers were instead based on data from the Galloper Wind Farm Eastern Super Grid Transformer Project (Ref. 6.2.27). These numbers were considered suitable proxy values for the habitat within Coronation Wood and Pillbox Field due to the proximity of the area and similarity of the habitats present, as well as the more suitable timing and extent of these surveys.

2.1.23 The ‘typical’ density per hectare (ha) for any area was calculated from the maximum number of adults of a given species which were recorded during a single survey of that area. This method was used following a literature review of other reptile surveys and translocation projects, as well as of studies of typical densities of reptiles in good and exceptional habitats in the UK (Ref. 6.2.41) (Ref. 6.2.42).

2.1.24 From this measure of typical density, an estimation of the number of reptiles of each species present within the areas to be lost was made:

- Where capture-mark-recapture (CMR) data was available, this calculation was made by multiplying the typical density by the area to be lost in hectares.
- Where CMR data was not available for all species in all areas, the typical density was multiplied by the area to be lost and then by five, in the case of grass snakes

(*Natrix natrix*) and adders (*Vipera berus*), and by ten in the case of common lizards (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*)[1].

2.1.25 Population assessments were undertaken using Froglife's population assessment methodology (Ref. 6.2.43).

v. Ornithology

2.1.26 Breeding bird surveys were undertaken on land within the EDF Energy (NGL) Sizewell Estate and its surrounds by Wood Group in 2008, 2010, 2011 and 2012 and by Arcadis in 2014 and 2015.

2.1.27 In 2008, surveys were undertaken between April and July using both territory mapping and species-specific survey methodologies (dabbling duck, hobby (*Falco subbuteo*), nightjar (*Caprimulgus europaeus*) and intertidal and inshore marine surveys). The study areas varied dependent on the survey method employed (see Figures 2.2 to 2.5 in Ref. 6.2.17).

2.1.28 In 2010, monthly breeding bird surveys were undertaken as illustrated on Figure 1.1 in Ref. 6.2.19. In 2011, breeding bird surveys specifically targeting black redstart (*Phoenicurus ochruros*) were undertaken between April and June across the Sizewell A and B Station complexes as well as Coronation Wood and associated habitats (see Figure 2.1 in Ref. 6.2.20). Surveys were undertaken monthly between April and July 2011.

2.1.29 In 2012, breeding bird surveys were undertaken across seven moderate to large arable or grassland fields, including Pillbox Field and Lover's Field, as illustrated on Figure 1.1 in Ref. 6.2.24. Surveys were undertaken on a single occasion in March and June and twice in May.

2.1.30 An update to survey work within Coronation Wood was carried out in 2014 and 2015 with additional breeding bird and wintering bird surveys undertaken by Arcadis (Ref. 6.2.26). Breeding bird surveys were undertaken monthly between April and June 2014, and wintering bird surveys on a bi-monthly basis between November 2014 and March 2015.

2.1.31 Ornithological surveys undertaken as part of the Galloper Wind Farm Eastern Super Grid Transformer Project in 2008 covered part of Sizewell Marshes SSSI, approximately 250m south-west of the Site boundary (Ref. 6.2.27).

2.1.32 On 18 August 2015, an Extended Phase 1 habitat survey of Pillbox Field and associated habitats was undertaken by Arcadis and the presence of habitats suitable for birds considered.

2.1.33 Further species-specific bird surveys undertaken at least partially within the ZoI include surveys principally undertaken within Sizewell Marshes SSSI and along the coastline as detailed below.

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[1] Details of how these measures (five for grass snakes and adders and 10 for common lizards and slow-worms) were determined are provided in Ref. 6.2.14.

2.1.34 In May and June 2008, Vantage Point (VP) surveys for marsh harrier (*Circus aeruginosus*) were undertaken within Sizewell Marshes SSSI by Wood Group, as illustrated on Figure 2.1 in Ref. 6.2.18. Further surveys to assess activity levels of bittern, hen harrier and marsh harrier within Sizewell Marshes SSSI were undertaken bi-monthly between April 2011 and March 2012 (see Figure 2.1 in Ref. 6.2.22). VP surveys were also undertaken within Sizewell Marshes SSSI and the reedbeds of Minsmere to Walberswick Special Protection Area (SPA) during this time (see Figure 2.2 in Ref. 6.2.22). An update to VP survey work within Sizewell Marshes SSSI and associated areas was undertaken by Arcadis in 2014 and 2015.

2.1.35 Ornithological surveys along the coast to the east of the Site boundary were undertaken by Wood Group in 2011 (Ref. 6.2.21) and 2012 (Ref. 6.2.23) and Arcadis in 2012/13 (Ref. 6.2.25). VP surveys (illustrated on Figure 2.1 in Ref. 6.2.23), assessing seabird assemblages were undertaken by Wood Group between March 2011 and April 2012. Species-specific surveys were also undertaken, focusing on little tern (*Sternula albifrons*) in 2011 (Ref. 6.2.21) on a fortnightly basis between May and July (see Figure 2.2 in Ref. 6.2.21 for the study area) and red-throated diver (*Gavia stellata*) over the Winter of 2012/13 by Arcadis (Ref. 6.2.25). An update to seabird survey work, including little tern, was undertaken by Arcadis in 2012 and 2013.

2.1.36 Full details of the methodologies employed during these surveys are provided in the relevant reports specified in this section.

vi. Bats

2.1.37 An assessment (by Wood Group) of all mature trees within Coronation Wood and the woodland strip to the south, running along the western edge of the Sizewell A and B Station access road, was undertaken on 13 September 2012, with all trees with a medium or higher potential to support roosting bats identified. The survey area considered is illustrated in Figure 3.1 in Ref. 6.2.33. Additionally, Wood Group conducted a single activity survey transect route, illustrated on Figure 2.1 in Ref. 6.2.33, undertaken on three occasions with an additional six locations monitored by static Anabat detectors SD1(s) and SD2(s) for a period of ten nights on three occasions (May, June/July, and August/September 2012). Static detector deployment locations are illustrated on Figure 2.1 in Ref. 6.2.33.

2.1.38 An update to this survey work was carried out in 2013 and 2015 with additional activity transects, static detector surveys and tree assessments undertaken by Arcadis.

2.1.39 As part of static bat detector surveys undertaken across the EDF Energy (NGL) Sizewell Estate in 2013, a single static, SM2 detector was positioned within the Site (Ref. 6.2.34). A further eight static SM2 detectors were deployed within the Zol for bats in 2013 and 2014 (Ref. 6.2.34). The location of these detectors are detailed in **Table 6.2.2** below and are illustrated on **Figure 6.1**.

Table 6.2.2. Location of static detectors.

Monitoring Station (MS)*	Ordnance Survey Grid Reference	Location Description	Years of Surveying
12	TM 470 647	Cross roads within Goose Hill towards the eastern edge	2013 + 2014
16	TM 473 646	Cross roads on edge of Goose Hill. One microphone on crossroad and one in adjacent field to east	2013 + 2014
20	TM 470 644	Junction between northern Sizewell Marshes SSSI and Goose Hill	2013 + 2014
24	TM 469 644	Junction between northern Sizewell Marshes SSSI and Goose Hill	2013 + 2014
27	TM 469 632	Within the Site to the west of Coronation Wood	2013
29	TM 469 641	Junction between Sizewell Marshes SSSI and Grimseys	2013 + 2014
31	TM 466 630	Fields to south. One microphone close to Broom Covert and one close to Rookyard Pit Woods	2013 + 2014
35	TM 473 645	Top north-eastern corner of Sizewell Marshes SSSI	2014
36	TM 467 638	Reedbed area to the south of Sizewell Marshes SSSI	2014

*Refer to **Figure 6.1** for location.

2.1.40 These detectors were deployed for a two-week period on three occasions per survey year as detailed in **Table 6.2.3** below.

Table 6.2.3. Summary of automated detector survey periods

Year	Season	Session	Dates
2013	1	1	29 May – 13 June
		2	11 June – 26 June
	2	1	15 July – 29 July
		2	30 July – 13 August
	3	1	10 September – 24 September
		2	24 September – 8 October
2014	1	1	28 May – 12 June
		2	11 June – 26 June
	2	1	15 July – 30 July
		2	28 July – 13 August
	3	1	3 September – 16 September
		2	16 September – 30 September

2.1.41 On 18 August 2015, an Extended Phase 1 habitat survey of Pillbox Field and associated habitats was undertaken by Arcadis and the presence of habitats suitable for bats assessed. Subsequently, a single activity transect was undertaken on two occasions, once in September and once in October 2015. This transect covered Pillbox

Field, the Sizewell Gap road between Pillbox Field and the Sizewell access road, the Sizewell access road and the boundaries of Coronation Wood, as illustrated on **Figure 6.2**.

2.1.42 Transects were undertaken for between 1.5 and 2 hours after sunset. Each transect was walked simultaneously by two surveyors each using a Pettersson D240x detector connected to a Roland R-05 MP3 digital recorder. Within each pair of surveyors, one surveyor listened at 30kHz and one surveyor listened at 50kHz, to ensure that all species present were recorded, in particular, those echolocating at lower frequencies, including barbastelle (*Barbastella barbastellus*). The starting point of the transect varied between the two survey visits to ensure that all areas of the transect were surveyed at a variety of times after sunset.

2.1.43 Further tree roost assessments were undertaken on 14 October 2015 and the 3 and 4 February 2016. In October 2015, an assessment of trees located within Coronation Wood, to the south of Coronation Wood within the gap in the Sizewell Marshes SSSI, and areas of the SSSI directly to the west and east of the gap, as well as land to the west of Coronation Wood between Coronation Wood and the Sizewell Marshes SSSI was undertaken. In February 2016, an assessment of trees located within the area proposed for stockpiling was undertaken. The survey areas considered are illustrated on **Figure 6.3**. All accessible trees were surveyed from the ground for the presence of tree features (including loose bark, cracks or splits or dense ivy) or bat signs (including staining or droppings) that might indicate suitability for or use by roosting bats.

2.1.44 Between 2007 and 2011, a number of bat surveys were undertaken by Wood Group across the area within the Site proposed for stockpiling and across directly adjacent habitat.

2.1.45 Transect surveys were undertaken across this area on four occasions in 2007 (Ref. 6.2.28)); one occasion in 2008 (Ref. 6.2.29); two occasions in 2009 (Ref. 6.2.30) and 2010 (Ref. 6.2.31) and on three occasions in 2011 (Ref. 6.2.32). Static detectors were deployed within the Site and adjacent habitats in 2007 (a single detector within the stockpiling area) (Ref. 6.2.28); 2010 (four static detectors within the stockpiling area, five within the adjacent Sizewell Marshes SSSI to the west and two on the edge of Goose Hill (Ref. 6.2.31) and 2011 (one static detector within the stockpiling area, one to the east of the stockpiling area, two within the adjacent SSSI to the west and four on the edge of Goose Hill) (Ref. 6.2.32).

2.1.46 Trapping and radio-tracking survey were undertaken across the EDF Energy (NGL) Sizewell Estate in 2010 (Ref. 6.2.31) and 2011 (Ref. 6.2.32) by Wood Group, and across the EDF Energy (NGL) Sizewell Estate and Minsmere in 2014 by Corylus Ecology (Ref. 6.2.36) on behalf of Arcadis.

2.1.47 Additional activity surveys were undertaken in relation to the Galloper Wind Farm Eastern Super Grid Transformer Project, approximately 250m to the south-west of the Coronation Wood, in 2006, 2007, 2011, 2013 (Ref. 6.2.27) and post-construction in 2015 (Ref. 6.2.35).

2.1.48 As part of the Phase 1 habitat survey of the footpath route options undertaken by Arcadis in 2019, the woodland to the west of Pillbox Field, which falls within pedestrian access Option 2, was inspected for the potential to support roosting bats.

vii. Other mammals

Brown hare (*Lepus europaeus*)

2.1.49 No specific surveys for brown hare have been undertaken; however, incidental sightings of this species have been recorded.

Harvest mouse (*Micromys minutus*)

2.1.50 No specific surveys for harvest mouse have been undertaken; however, incidental sightings of this species have been recorded.

Hedgehog (*Erinaceus europaeus*)

2.1.51 No specific surveys for Western European hedgehog (hereafter referred to as hedgehog) have been undertaken; however, incidental sightings of this species have been recorded.

Otter (*Lutra lutra*)

2.1.52 A survey of the gap in the Sizewell Marshes SSSI to the north of Pillbox Field as well as associated ditches and habitats directly to the east and west of the gap (outside of the Site boundary but within the Zol in the Sizewell Marshes SSSI), was undertaken on 14 October 2015 to identify the presence of habitat suitable for, and signs indicative of the presence of otter and water vole (*Arvicola amphibius*).

2.1.53 Incidental signs were also recorded by Wood Group during water vole surveys in 2007 (Ref. 6.2.**Error! Bookmark not defined.**).

Water Vole

2.1.54 Water vole surveys of the ditches and associated habitat within Sizewell Marshes SSSI were undertaken by: Wood Group in 2007 and 2009; Royal Holloway (reported in Wood Group reports) between 2001 and 2007 (Ref. 6.2.**Error! Bookmark not defined.**); and Arcadis in 2013 (Ref. 6.2.**Error! Bookmark not defined.**) and 2015. Surveys focused on ditches and habitats that were likely to be affected by the Proposed Development and likely to support water voles. The October 2015 survey included the ditch that would be crossed by the footbridge, north of Pillbox Field. Habitats that were assessed as unsuitable for water voles were not subject to a detailed survey.

2.1.55 As part of the Phase 1 habitat survey of the footpath route options undertaken by Arcadis in March 2019, the ditches in close proximity to the proposed footbridge locations (50m either side) were subject to a habitat suitability assessment. The banks were also inspected for signs of water voles (latrines, burrows, feeding signs); although surveys were undertaken at a sub-optimal time of year.

Other Mammal Species

Deer

2.1.56 No specific surveys for these species have been undertaken; however, incidental sightings of this species were recorded.

Additional small mammal surveys

2.1.57 No specific surveys for small mammals have been undertaken; however, incidental sightings were recorded.

REFERENCES

Ref. 6.2.1 Entec. Sizewell Extended Phase 1 Survey Report. British Energy Group PLC. 2008

Ref. 6.2.2 Entec. Sizewell National Vegetation Classification Report 2008. British Energy Group PLC. 2008

Ref. 6.2.3 Hyder. Sizewell C NVC Survey 2014. NGL. 2014

Ref. 6.2.4 Royal Haskoning. Sizewell Power Station ISFSI and Car Park Extension Extended Phase 1 and Habitat Survey Report 2008. Entec UK Limited. 2008

Ref. 6.2.5 Vegetation Surveys & Assessment. Sizewell C Nuclear Power Station Baseline Bryophyte Assessment. Hyder Cresswell. 2015

Ref. 6.2.6 Biocensus. Lichen Survey at Sizewell Power Station. Arcadis. 2015

Ref. 6.2.7 Amec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Invertebrate Survey Report 2007-2010. NGL. 2012

Ref. 6.2.8 Mellings., J. Sizewell C Invertebrate Surveys 2014. Arcadis. 2014

Ref. 6.2.9 Entec. Sizewell Great Crested Newt Survey Report 2007. British Energy Group PLC. 2008

Ref. 6.2.10 Hyder. Sizewell C Ecological Support Great Crested Newt Survey Report. NGL/NNB GenCo. 2014

Ref. 6.2.11 Entec. Sizewell Reptile Survey Report 2008. British Energy Group PLC. 2008

Ref. 6.2.12 Amec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Draft Coronation Wood Reptile Survey Report 2012. NGL. 2012

Ref. 6.2.13 Amec Foster Wheeler. Coronation Wood and Pillbox Field Reptile Survey Report. Freedom Group. 2015

Ref. 6.2.14 Arcadis. Sizewell C Project Reptile Mitigation Plan. NGL. 2015

Ref. 6.3.15 Arcadis. Sizewell C Project Reptile Baseline Technical Appendix. In Draft (N.D.)

Ref. 6.2.16 Royal Haskoning. Sizewell Power Station ISFSI and Car Park Extension Reptile Survey Report 2008. Entec UK Limited. 2008

Ref. 6.2.17 Entec. Sizewell First Interim Bird Report. British Energy Group PLC. 2008

Ref. 6.2.18 Entec. Sizewell Marsh Harrier Survey Report 2008. British Energy Group PLC. 2008

Ref. 6.2.19 Entec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Draft Breeding Bird Survey Report 2010. NGL. 2010

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Ref. 6.2.21 Amec. Sizewell Little Tern Report. EDF Development Company Ltd. 2011

Ref. 6.2.22 Amec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Draft Harrier and Bittern Survey Report 2011-12. NGL. 2012

Ref. 6.2.23 Amec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Draft Seabird Report 2011-12. NGL. 2012

Ref. 6.2.24 Amec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Draft Arable Reversion Areas, Breeding Bird Survey Report 2012. NGL. 2012

Ref. 6.2.25 Hyder. Sizewell C Nuclear Power Station Red-throated diver survey report. NGL. 2013

Ref. 6.2.26 Arcadis. Sizewell C Coronation Wood Survey Report. NNB GenCo. 2015

Ref. 6.2.27 Galloper Wind Farm Limited. Galloper Wind Farm Eastern Super Grid Transformer Project. Environmental Statement Chapter 5 Terrestrial Ecology. 2014

Ref. 6.2.28 Entec. Sizewell Bat Survey Report 2007. British Energy Group PLC. 2007

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Ref. 6.2.34 Arcadis. Sizewell C Ecology Automated SM2 Bat Detector Monitoring Report 2013/2014. NGL. 2015

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Ref. 6.2.36 Corylus Ecology. Sizewell Radio-tracking Report. Arcadis. 2016

Ref. 6.2.37 Amec. Sizewell C New Nuclear Power Station: Terrestrial and Freshwater Ecology, and Ornithology Draft Otter Survey Report 2007-2010. NGL. 2012

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Ref. 6.2.42 Reptiles & Amphibians of the UK. Communication in Reptiles & Amphibians of the UK (RAUK) web forum by Steve Langham - Chairman Surrey Amphibian & Reptile Group, and Lee Brady - Kent Herpetofauna Recorder/Independent Ecological Consultant. Unpublished, 2009. (Online) Available from: http://www.herpetofauna.co.uk/forum/carrying-capacities_topic3083.html

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ANNEX 6.3 RESULTS

CONTENTS

TABLES

FIGURES

For figures please see **ES Volume II: Appendix 6.1, Annex 6.1**.

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1. INTRODUCTION

1.1 Purpose of annex

1.1.1 This Annex sets out the results of ecological surveys undertaken within the Site and/or the species-specific Zones of Influence (Zol). Survey work was primarily undertaken by Wood Group (formerly Entec and Amec Foster Wheeler) and Arcadis Consulting (UK) Limited (formerly Hyder Consulting and hereafter referred to as 'Arcadis'). Additional field data recorded from within the Site and/or the species-specific Zol was undertaken by Corylus Ecology, Galloper Wind Farm Ltd, The Ecology Consultancy and Royal Haskoning DHV.

1.1.2 Where full details of the survey results have been included within reports that have been produced separately, full details of the results have not been repeated here, although a summary has been provided. Published reports produced by Arcadis and Wood Group (and other secondary data sources) have been included within **Annex 6.5** and **6.6** respectively **ES Volume II: Appendix 6.1**.

1.1.3 The legislation, baseline, assessment of potential effects, mitigation and monitoring relating to badgers has been reported within a separate confidential appendix (**ES Volume II: Appendix 6.2**).

1.2 Survey area

1.2.1 Data considered during the ecological assessment of the Proposed Development and Zol has been drawn from a wide pool of ecological survey work. This work has been undertaken across a much wider area than that which has been considered within the **ES Volume I: Chapter 6: Terrestrial Ecology and Ornithology**. These survey data sources have been reviewed and information relevant to the Proposed Development and the species-specific Zols has been extracted. While only those elements of survey work which are relevant to the proposed activities have been taken from the available pool of survey work, it should be noted that it is not possible, in all scenarios, for this information to be considered in isolation to the ecological resource known to be present within the wider EDF Energy (NGL) Sizewell Estate.

2. FIELD DATA

2.1 Overview

2.1.1 A full list of the data sources used to support the impact assessment is provided in **Table 6.3.1** below.

Table 6.3.1. Data sources reviewed, by species group

Species Group	Data Source (report or survey) *	Year
Plants and Habitats	Entec (Ref. 6.3.1) – Sizewell C Extended Phase 1 Survey Report	2008
	Entec (Ref. 6.3.2) – Sizewell C National Vegetation Classification Report	2008
	Hyder (Ref. 6.3.3) – Sizewell C NVC Survey	2014
	Royal Haskoning (Ref. 6.3.4) – Sizewell B Power Station ISFSI and Car Park Extension Ecological Scoping Report	2008
	Vegetation Survey and Assessment (Ref. 6.3.5) – Sizewell C Nuclear Power Station Baseline Bryophyte Assessment.	2015
	Biocensus (Ref. 6.3.6) – Lichen Survey at Sizewell C Power Station	2015
	Arcadis – Relocated Facilities Extended Phase 1 surveys of Pillbox Field, Coronation Wood and associated habitats**	2015
	Arcadis – Relocated Facilities: Phase 1 habitat survey of the pedestrian access options from Pillbox Field to Coronation Wood**	2019
Invertebrates	Amec (Ref. 6.3.7) – Sizewell C Invertebrate Survey Report	2012
	Mellings (Ref. 6.3.8) – Sizewell C Invertebrate Survey	2014
Amphibians	Entec (Ref. 6.3.9) – Sizewell C Great Crested Newt Survey Report	2008
	Hyder (Ref. 6.3.10) – Sizewell C Great Crested Newt Survey	2014
Reptiles	Entec (Ref. 6.3.11) – Sizewell C Reptile Survey Report	2008
	Amec (Ref. 6.3.12) – Relocated Facilities Coronation Wood Reptile Survey Report	2012
	Amec Foster Wheeler (Ref. 6.3.13) – Relocated Facilities Coronation Wood and Pillbox Field Survey Report	2015
	Arcadis (Ref. 6.3.14) – Sizewell C Reptile Mitigation Plan	2015
	Arcadis (Ref. 6.3.15) – Sizewell C Project Reptile Baseline Technical Appendix (in draft)	In draft, not dated
	Galloper Wind Farm Limited (Reg. 6.3.16) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014
	Royal Haskoning (Ref. 6.3.17) – Sizewell B Power Station ISFSI and Car Park Extension Reptile Survey Report	2008
Ornithology	Entec (Ref. 6.3.18) – Sizewell C First Interim Bird Report	2008
	Entec (Ref. 6.3.19) – Sizewell C Marsh Harrier Survey Report	2008
	Entec (Ref. 6.3.20) – Sizewell C Breeding Bird Survey Report	2010

Species Group	Data Source (report or survey) *	Year
	Amec (Ref. 6.3.21) – Sizewell C Black Redstart Breeding Bird Report	2011
	Amec (Ref. 6.3.22) – Sizewell C Little Tern Report	2011
	Amec (Ref. 6.3.23) – Sizewell C Harrier and Bittern Survey Report	2011-2012
	Amec (Ref. 6.3.24) – Sizewell C Seabird Report	2012
	Amec (Ref. 6.3.25) – Sizewell C Arable Reversion Areas, Breeding Bird Survey Report	2012
	Hyder (Ref. 6.3.26) – Sizewell C Red-throated diver Survey Report	2013
	Hyder Sizewell C 2012 and 2013 seabird surveys**	2012 and 2013
	Arcadis Sizewell C 2014 and 2015 marsh harrier surveys**	2014 and 2015
	Arcadis (Ref. 6.3.27) – Relocated Facilities Coronation Wood Survey Report	2015
	Galloper Wind Farm Limited (Reg. 6.3.16) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014
Bats	Entec (Ref. 6.3.28) – Sizewell C Bat Survey Report	2007
	Entec (Ref. 6.3.29) – Sizewell C Bat Survey Report	2008
	Entec (Ref. 6.3.30) – Sizewell C Bat Survey Report	2009
	Entec (Ref. 6.3.31) – Sizewell C Bat Survey Report	2010
	Amec (Ref. 6.3.32) – Sizewell C Bat Survey Report	2011
	Amec (Ref. 6.3.33) – Relocated Facilities Coronation Wood Bat Survey Report	2012
	Arcadis (Ref. 6.3.34) – Sizewell C Ecology Automated (SM2) Bat Detector Monitoring Report 2013-2014	2013 and 2014
	Galloper Wind Farm Limited (Ref. 6.3.16) – Galloper Wind Farm Eastern Super Grid Transformer Project Environmental Statement – Chapter 5 Terrestrial Ecology	2014
	The Ecology Consultancy (Ref. 6.3.35) – Galloper Wind Farm, Sizewell, Suffolk Bat and Reptile Monitoring Report	2015
	Corylus Ecology (Ref. 6.3.36) – Sizewell C Radio-tracking Study	2016
	Arcadis (2015) – Relocated Facilities Pillbox Field and Coronation Wood Bat Activity Transects**	2015
	Arcadis (2015 and 2016) – Relocated Facilities Coronation Wood Tree Assessment Surveys**	2015 and 2016
	Arcadis (2016) – Relocated Facilities Stockpiling Area Tree Assessment Surveys**	2016
	Arcadis – Relocated Facilities: Bat survey in relation to pedestrian access from Pillbox Field**	2019
Other Mammals	Amec (Ref. 6.3.37) – Sizewell C Otter Survey Report	2015
	Amec (Ref. 6.3.38) – Sizewell C Water Vole Survey Report	2007 to 2010
	Hyder (Ref. 6.3.39) – Sizewell C Otter Survey Report	2007 to 2009
	Arcadis (2015) – Sizewell C Otter and Water Vole Survey in	2015

Species Group	Data Source (report or survey) *	Year
	Sizewell Marshes Sites of Special Scientific Interest (SSSI)**	
	Arcadis – Relocated Facilities: Water vole survey in relation to pedestrian access from Pillbox Field**	2019

*Details of the methodologies and results for these surveys are provided in the relevant reports detailed above and a summary is provided in the sections below.

**These surveys have not been reported separately. The relevant details of these surveys are provided in the sections below.

2.1.2 Full details of the results gathered can be found in the relevant survey report(s) provided in **Annex 6.5** and **Annex 6.6** of **ES Volume II: Appendix 6.1** while a summary is provided below. For a small number of surveys, detailed reports have not been produced elsewhere. For these, full details of the results are provided.

2.2 Results

a) Plants and habitats

2.2.1 The results of Phase 1 habitat surveys within the Site boundary, Zol and wider EDF Energy (NGL) Sizewell Estate are illustrated on **Figure 6.6**.

2.2.2 The location of the area proposed for stockpiling during construction at the northern extent of the Site consists of poor semi-improved grassland (Ref. 6.3.1). National Vegetation Classification (NVC) surveys (Wood Group) identified three grassland communities: SD8 – *Festuca rubra – Galium verum* fixed dune grassland; OV23 – *Lolium perenne – Dactylis glomerata* open ground vegetation; and MG7 – *Lolium perenne* leys and associated grassland (Ref. 6.3.2). Two linear tree belts are also present.

2.2.3 Much of the area within the proposed Site boundary comprises hard-standing. At the western edge, an area of dense scrub including Alder (*Alnus glutinosa*), Grey Willow (*Salix cinerea*), Gorse (*Ulex* spp.), Broom (*Genisteae* spp.), Brambles (*Rubus fruticosus* agg.) and Dog-rose (*Rosa canina*) were identified. A strip of woodland was also recorded on both sides of the stream to the west of the western carpark adjacent to Sizewell Marshes Site of Special Scientific Interest (SSSI). This woodland strip comprises a range of broad-leaved species including Alder, Grey Alder (*Alnus incana*), Pedunculate Oak (*Quercus robur*), Grey Willow, Ash (*Fraxinus* spp.), Silver Birch (*Betula pendula*) and Hawthorn (*Crataegus monogyna*).

2.2.4 Coronation Wood comprises mixed woodland consisting primarily of Corsican Pine (*Pinus nigra* var. *maritima*), Scots Pine (*Pinus sylvestris*) and Sycamore (*Acer pseudoplatanus*). The majority of trees are of an even age, with approximately six more mature Pedunculate Oak and Scots pine identified. Ground flora is sparse and species-poor due to the lack of light permeating the canopy and the depth of the pine needles.

2.2.5 Strips of amenity grassland are located to the north, east and west of Coronation Wood. To the west, this area consists of an open sandy area supporting short-sward grassland. Surrounded by scrub, this area slopes away from Coronation Wood towards Sizewell Marshes SSSI. The slopes are dominated by dense bracken and scrub as far as the Alder-lined ditch on the edge of the Sizewell Marshes SSSI.

2.2.6 Directly to the south of Coronation Wood, the marshes comprise primarily species-rich marshy grassland with a small area of drier semi-improved grassland on the southern edge. Ditches present within the eastern section of this area of Sizewell Marshes SSSI are heavily shaded. No trees are present in the vicinity of ditches to the west of this area (outside the Site boundary), allowing the growth of emergent and aquatic vegetation.

2.2.7 Pillbox Field comprises species-poor semi-improved neutral grassland (Phase 1 habitat surveys: Wood Group (Ref. 6.3.1); Arcadis, 2015). An area of alder and willow scrub, and a low-lying ditch, is at the northern end of the field through which pedestrian access Options 1 and 3 are proposed. The ditch was found to support a limited number of plant species characteristic of wetland conditions namely Yellow Iris (*Iris pseudacorus*), Water Mint (*Mentha aquatica*) and Common Reed (*Phragmites australis*).

2.2.8 A stand of the non-native invasive plant Indian (also known as Himalayan) Balsam (*Impatiens glandulifera*) was identified growing in the gateway of the field immediately north of Pillbox Field, as well as along the ditches in the vicinity of the proposed footbridge. Indian Balsam is listed on Schedule 9 of the Wildlife and Countryside Act (W&CA) (Ref. 6.3.40) and it is an offence to encourage or facilitate the spread of the plant.

2.2.9 The section of Sizewell Marshes SSSI grassland, through which the pedestrian access will traverse for approximately 66m, comprises species-poor semi-improved neutral grassland. Grass species include Yorkshire-fog (*Holcus lanatus*), Cock's-foot (*Dactylis glomerata*) Fescue sp. (*Festuca* sp.). Forb species included Thistle sp. (*Cirsium* sp.), Ragwort (*Senecio jacobaea*), Red Dead-nettle (*Lamium purpureum*), Common Chickweed (*Stellaria media*) and Common Mouse-ear (*Cerastium fontanum*). The raised profile of this section of Sizewell Marshes SSSI has resulted in drier conditions in comparison to the rest of the SSSI.

2.2.10 The woodland between Pillbox Field and the Sizewell A and B power stations access road, through which the alignment for Option 2 of the pedestrian footpath is proposed, comprises a block of mixed plantation woodland dominated by Scots Pine and Alder. The plantation woodland grades into a block of semi-natural Alder carr nearer the existing access road. The wetter areas of the woodland support a limited ground flora comprising aquatic/wetland species, namely Yellow Iris, Hard Rush (*Juncus inflexus*) and Soft-rush (*Juncus effusus*). This woodland is connected to the south of Coronation Wood by a continuation of the carr woodland.

2.2.11 A mosaic of habitats was present outside of the Site boundary, within the Zol. To the north of the development, the Site boundary abuts a landscape mound (the Northern mound) densely planted with native species including Holly (*Ilex aquifolium*), Gorse, Silver Birch, Hornbeam (*Carpinus betulus*), Blackthorn (*Prunus spinosa*) and Hawthorn. Further to the north, within the Zol, habitats consist of marshy grassland and coastal sand dune vegetation.

2.2.12 The coastal vegetation present to the east of the Site boundary grows on either a sand or shingle substrate. The sand substrate gives rise to grassland dominated by species including Sand Sedge (*Carex arenaria*) and Marram grass (*Ammophila arenaria*), whilst the shingle substrate gives rise to scattered specialists of shingle habitat such as Sea Pea (*Lathyrus japonicus*).

2.2.13 Detailed surveys have been undertaken of the bryophyte and lichen assemblages present within the coastal habitats. The bryophyte survey identified a range of species characteristic of acidic grassland and shingle habitats. No scarce species were identified, and the bryophyte assemblage comprised common and widespread species only (Ref. 6.3.5).

2.2.14 The lichen flora was well developed with 64 species recorded. No species of high nature conservation importance were recorded, but several less common species were identified. The lichen flora, in particular that of the dune system, was considered to be of some nature conservation importance (Ref. 6.3.6).

2.2.15 Further south, the Site boundary abuts areas of hard standing and buildings associated with Sizewell A. An area of plantation coniferous woodland (Hill Wood) was also present within the ZoI, to the east of the Site boundary.

2.2.16 Sizewell Marshes SSSI, which lies adjacent to the western edge of the Site boundary, supports a range of habitats including fen meadow, reedbeds, wet woodland and a network of linear drainage ditches. NVC surveys (Ref. 6.3.2) assigned the majority of fen meadow within Sizewell Marshes SSSI to two sub-communities M22b (*Briza media – Trifolium sp*.) and M22d (*Iris pseudocorus*) of the M22 *Juncus subnodulosus – Cirsium palustre* fen meadow community. Sizewell Marshes SSSI is managed by Suffolk Wildlife Trust (SWT) in partnership with EDF Energy (NGL) through a combination of water level management and extensive cattle-grazing and is currently assessed as being in favourable nature conservation status (condition assessment dated 2009). Each of the broad habitat types present (fen meadow/grazing marsh, reedbed, wet woodland and ditches) are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (Ref. 6.3.41) as habitats of principal importance for biodiversity, whilst also being on Suffolk's Priority Species and Habitats list (Ref. 6.3.42).

2.2.17 To the south of Sizewell Marshes SSSI, habitats comprise acid grassland, broadleaved and mixed woodland and semi-improved species–poor grassland. A number of fields in this area were former arable fields that had been ploughed and sown since 2013 with a seed mix consisting of grass species characteristic of acid grassland. Several shallow depressions, occasionally holding water on an ephemeral basis, were noted.

b) Invertebrates

2.2.18 Habitats within the Site were assessed as suitable to support common invertebrate assemblages, typical of the habitats present.

2.2.19 Surveys within Sizewell Marshes SSSI (Ref. 6.3.7) recorded numerous invertebrate species on Suffolks Priority Species and Habitats list and Red Data Book (RDB), as well as a number of nationally scarce species. Identified species included the Nationally Endangered (Ref. 6.3.43) Norfolk hawker dragonfly and nationally rare (Ref. 6.3.44) greater silver water beetle (*Hydrophilus piceus*).

2.2.20 In particular, the ditches immediately to the west of the Site boundary support a diverse range of species including two RDB Category 2 soldierflies (*Odontomyia ornata* and *O. argentata*) (Ref. 6.3.45) and three nationally scarce species; the beetle

Ochthebius marinus, the cranefly *Limonia ventralis* and the soldierfly *Vanoyia tenuicornis*.

2.2.21 It was concluded that the ditches and reedbeds within the survey area are of high nature conservation value for invertebrates. This conclusion is supported by surveys undertaken in 2014 on behalf of Arcadis (Ref. 6.3.8).

c) Amphibians

2.2.22 No water bodies with the potential to support great crested newts (*Triturus cristatus*) have been identified within the Site.

2.2.23 Outside of the Site boundary, within the great crested newt ZoI, three ponds and eight ditch survey locations were identified. The location of these water bodies are indicated on **Figure 6.7**. Following surveys of these water bodies, only a single male smooth newt was identified, located within a ditch running north to south at the eastern extent of the Sizewell Marshes SSSI (Ref. 6.3.10). No great crested newts were identified, and this species is therefore considered to be absent from the Site boundary and a 500m ZoI.

d) Reptiles

2.2.24 The results of reptile surveys undertaken within the Site and ZoI for reptiles, by both Wood Group and Arcadis, are illustrated on **Figure 6.8**. In summary, reptiles have been found wherever habitat is suitable to support them. Full details are provided in the paragraphs below:

2.2.25 Within the northern extent of the Site, surveys by Wood Group in 2007 (Ref. 6.3.11) recorded all four widespread and native reptile species. Surveys in 2015 by Arcadis (Ref. 6.3.15) recorded adder (*Vipera berus*), common lizard (*Zootoca vivipara*) and slow-worm (*Anguis fragilis*) (Ref. 6.3.15). **Table 6.3.2** summarises the peak numbers recorded for a single survey within this area and the population classification assigned to each species based on Froglife guidelines (Ref. 6.3.46).

Table 6.3.2. Summary of the peak number of adult reptiles recorded within the stockpiling area.

Species	Adult peak number recorded		Overall population assessment
	2007	2015	
Adder	5	5	Low
Common lizard	15	15	Good
Grass snake	3	0	Low
Slow-worm	2	6	Low

2.2.26 It should be noted that the numbers provided in **Table 6.3.2** above cover both the area of the grassland to be used for stockpiling and the planted Northern mound outside of the Site boundary. Relatively few of the reptiles recorded were identified within the area outlined for stockpiling, while a large proportion of reptiles identified were recorded within the Northern mound located nearby.

2.2.27 Further surveys, by Arcadis in 2015, were undertaken in the planted landscape consisting largely of conifers to the south of the stockpiling area, both inside and

outside the Site boundary. The reptile numbers recorded in this area were notably lower, with only a maximum count of one adder and four common lizard recorded (Ref. 6.3.15).

2.2.28 Much of the habitat within the Site boundary south of the stockpiling area consists of hard-standing and was therefore sub-optimal for reptiles. Surveys were not undertaken in these areas, with the exception of the extended western car park, which recorded maximum counts of one common lizard, as well as a single potential juvenile grass snake (*Natrix natrix*) and a dead adder (Ref. 6.3.17).

2.2.29 Phase 1 surveys of Coronation Wood identified the area of scrub to its west as suitable for reptiles; however, habitat within the wood is heavily shaded and sub-optimal for reptiles. Reptile surveys which included the periphery of Coronation Wood were undertaken by Wood Group in 2012 (Ref. 6.3.12) and 2015 (Ref. 6.3.13). The refugia placed around the edge of Coronation Wood recorded maximum counts of two slow-worm, one adder, and one common lizard.

2.2.30 Surveys undertaken by Wood Group in 2015 (Ref. 6.3.13) within Pillbox Field recorded maximum counts of one adder, seven common lizards, one grass snake and two slow-worm. All recorded reptile species were recorded as having a low population classification. Arcadis 2015 surveys (Ref. 6.3.15) of Pillbox Field recorded maximum counts of two common lizard, two slow-worm, one grass snake, and one adder.

2.2.31 Surveys within the Galloper Wind Farm Eastern Super Grid Transformer Project were undertaken across a range of habitats including semi-improved grassland, boundary features and broad-leaved woodland plantation, outside the Site boundary, but within the ZoI. All four native, widespread reptile species were recorded with a total of 29 common lizards, 51 slow-worm, four adders and 12 grass snake identified (Ref. 6.3.16).

2.2.32 **Table 6.3.3** shows the estimated number of individuals of each identified reptile species within the areas of habitat to be lost, and their immediate surrounds, due to the Proposed Development, which have been calculated following this survey work.

Table 6.3.3. Estimated number of reptiles likely to be found in reptile suitable habitat within the Site

Proposed Development Area	Data Sources	Habitat	Area to be lost (ha)	Typical densities/ha**				Estimated number of individuals within affected habitat**			
				Common lizard	Slow-worm	Adder	Grass snake	Common lizard	Slow-worm	Adder	Grass snake
Stockpiling	Arcadis 2015 surveys	Open grass/scrub	3.0	15.7	8.6	32.0	0	471	258	96	0
Adjacent to stockpiling	Arcadis 2015 surveys	Landscape planting	1.7	5.0	0	1.3	0	85	0	12	0
Coronation Wood	Galloper Wind Farm translocations (Ref. 6.3.16)*	Woodland and scrub with open areas	1.6	4.5	7.8	0.6	1.8	7	12	1	3
Pillbox Field	Galloper Wind Farm translocations (Ref. 6.3.16)*	Grassland and scrub	6.8	4.5	7.8	0.6	1.8	31	53	4	12

*Surveys undertaken within Coronation Wood (and adjacent habitats) and Pillbox Field were unsuitable for use in the calculation of typical densities and the estimated number of reptiles present within this habitat. Therefore, data from reptile translocations undertaken for the Galloper Wind Farm Eastern Super Grid Transformer Project (Ref. 6.3.16) was used for these calculations. Full details are provided in **Annex 6.2**.

Details of how these measures have been calculated are provided in **Annex 6.2.

2.2.33 These areas, in combination with the wider EDF Energy (NGL) Sizewell Estate, are considered to represent a Key Reptile Site (KRS) based on the number of species and the size of the populations recorded; however, overall, the reptile populations for common lizard, grass snake, adder and slow-worm are low throughout the Site boundary.

e) Ornithology

2.2.34 Figures illustrating the results of surveys by Wood Group and of additional surveys undertaken by Arcadis are provided within the relevant reports (see Ref. 6.3.18, Ref. 6.3.19, Ref. 6.3.20, Ref. 6.3.21, Ref. 6.3.22, Ref. 6.3.23, Ref. 6.3.24, Ref. 6.3.25, Ref. 6.3.26, and Ref. 6.3.27).

2.2.35 A total of 23 bird species of nature conservation importance were identified during surveys undertaken by Wood Group and Arcadis, as detailed in **Table 6.3.4** below.

Table 6.3.4. Bird species of nature conservation importance recorded within the Site during surveys by Wood Group and Arcadis.

Conservation Concern Category	Species recorded within the Site
Qualifying feature of a European site	Teal (*Anas crecca*)
Assemblage feature/nationally notable feature of a European site	Herring gull (*Larus argentatus*)
Waterfowl and waders assemblage criteria of a European site	Greylag goose (*Anser anser*), snipe (*Gallinago gallinago*), little egret (*Egretta garzetta*), water rail (*Rallus aquaticus*)
Seabird assemblage criteria of a European site	Common gull (*Larus canus*)
Schedule 1 species*	Black redstart (*Phoenicurus ochruros*), peregrine falcon (*Falco peregrinus*), fieldfare (*Turdus pilaris*), redwing (*Turdus iliacus*)
Red List species**	Song thrush (*Turdus philomelos*), house sparrow (*Passer domesticus*), linnet (*Carduelis cannabina*), marsh tit (*Poecile palustris*), yellowhammer (*Emberiza citrinella*), skylark (*Alauda arvensis*)
Amber List species**	Dunnock (*Prunella modularis*), meadow pipit (*Anthus pratensis*), stock dove (*Columba oenas*), kestrel (*Falco tinnunculus*), willow warbler (*Phylloscopus trochilus*), reed bunting (*Emberiza schoeniclus*)

* W&CA (Ref. 6.3.40). **Birds of Conservation Concern (BoCC) (Ref. 6.3.47)

2.2.36 Habitat within the Site comprise largely made ground, with limited suitability for bird species. However, two species of particular note were recorded, black redstart and peregrine falcon, both using habitats within and adjacent to the existing Sizewell A and B power station complexes and the adjacent coast (within the Site boundary and ZoI); however, they were not observed using the fields to the north of the site. Breeding of these species was confirmed in 2015, with power station buildings used as nest sites.

2.2.37 Areas of scrub, mixed woodland and open grassland habitats within the Site were used by a variety of species during both the wintering and breeding seasons. These species included: fieldfare; redwing; song thrush; house sparrow; linnet; marsh tit;

dunnock; meadow pipit; stock dove; kestrel; willow warbler; yellowhammer; skylark; and reed bunting. Herring gull and common gull were only observed flying over the Site. Greylag goose, teal, snipe, little egret and water rail were recorded occasionally within areas of semi-improved grassland; however, these species were more commonly recorded in association with the wetland habitat within Sizewell Marshes SSSI directly adjacent to the west of the Site boundary.

2.2.38 To the west of the Site boundary, Sizewell Marshes SSSI comprises a mosaic of marshy grassland, ditch, reedbed and wet woodland habitats of considerable value to a diverse assemblage of birds. A total of 30 bird species of nature conservation importance were recorded during surveys by Wood Group and Arcadis within Sizewell Marshes SSSI, as detailed in **Table 6.3.5** below.

Table 6.3.5. Bird species of nature conservation importance recorded within Sizewell Marshes SSSI by Wood Group and Arcadis.

Conservation Concern Category	Species present within the Site
Qualifying feature of European site	Bittern (*Botaurus stellaris*), marsh harrier (*Circus aeruginosus*), hen harrier (*Circus cyaneus*)
Assemblage feature/nationally notable feature of European site	Gadwall (*Anas strepera*), shoveler (*Anas clypeata*), water rail, teal, black-tailed godwit (*Limosa limosa*), bearded tit (*Panurus biarmicus*), redshank (*Tringa totanus*)
Waterfowl and waders assemblage of a European site	Mallard (*Anas platyrhynchos*), little egret, little grebe (*Tachybaptus ruficollis*), snipe, woodcock (*Scolopax rusticola*)
Schedule 1 species*	Kingfisher (*Alcedo atthis*), barn owl (*Tyto alba*), Cetti's warbler (*Cettia cetti*), hobby (*Falco subbuteo*), goshawk (*Accipiter gentilis*), fieldfare, redwing
Red list species**	Marsh tit, song thrush, lesser redpoll (*Carduelis cabaret*), turtle dove (*Streptopelia turtur*)
Amber list species**	Stock dove, dunnock (*Prunella modularis*), willow warbler, reed bunting

* W&CA (Ref. 6.3.40). **BoCC (Ref. 6.3.47)

2.2.39 Sizewell Marshes SSSI has been used by foraging bittern in the Winter months, although no confirmed breeding attempts have been identified. Sizewell Marshes SSSI is also considered to provide a foraging resource for marsh harrier during both the wintering and breeding seasons. The marsh harrier foraging within this area are thought to be those nesting within Minsmere Royal Society for the Protection of Birds (RSPB) Reserve.

2.2.40 Bearded tit has been recorded within Sizewell Marshes SSSI during the Winter and passage periods; however, their presence during the breeding season appears to be limited, with the habitats present largely sub-optimal for breeding.

2.2.41 Kingfisher and barn owl were confirmed, during surveys, to be breeding within Sizewell Marshes SSSI with a further nine species considered likely to be breeding at this location: Cetti's warbler; marsh tit; song thrush; turtle dove; stock dove, dunnock; willow warbler; and reed bunting.

2.2.42 To the north of the Site boundary, woodland at Goose Hill and marshy grassland leading to the Minsmere South Levels fall partially within the ZoI for birds.

2.2.43 Goose Hill forms a complex of woodland habitat, which along with Kenton Hills, is dominated by conifer plantation. This area is considered to comprise an important foraging and breeding habitat for a range of species typical of this habitat including 15 species of nature conservation importance, as detailed in **Table 6.3.6** below.

Table 6.3.6. Bird species of nature conservation importance recorded within or flying over Goose Hill/Kenton Hills by Wood Group and Arcadis.

Conservation Concern Category	Species Present within the Site
Qualifying feature of European site	Bitter, marsh harrier
Assemblage feature/nationally notable feature of European site	Herring gull
Schedule 1 species*	Hobby (*Falco subbuteo*), goshawk, firecrest (*Regulus ignicapillus*), crossbill (*Loxia curvirostra*)
Red list species**	Marsh tit, song thrush, mistle thrush (*Turdus viscivorus*), tree pipit (*Anthus trivialis*), wood warbler (*Phylloscopus sibilatrix*)
Amber list species **	Dunnock, stock dove, bullfinch (*Pyrrhula pyrrhula*)

* W&CA (Ref. 6.3.40). **BoCC (Ref. 6.3.47)

2.2.44 Surveys confirmed the presence of breeding hobby within this woodland complex, while a further seven species of nature conservation importance (marsh tit, song thrush, tree pipit, dunnock, stock dove, mistle thrush and bullfinch) were considered likely to be breed in this location. Records of bittern, marsh harrier and herring gull represent commuting flights due to the sub-optimal nature of this habitat for these species.

2.2.45 The Minsmere South Levels, occurring primarily within the Minsmere to Walberswick SSSI to the north of the Site boundary, are largely outside of the Zol for birds, with only an area of marshy grassland between Goose Hill and the coastal strip falling within the Zol. However, bird species using habitat within the Minsmere to Walberswick Ramsar, SPA and SSSI are likely to use adjacent habitats and therefore are considered here.

2.2.46 A total of 33 bird species of nature conservation importance were recorded within the Minsmere South Levels, as detailed in **Table 6.3.7** below.

Table 6.3.7. Bird species of nature conservation importance recorded within the Minsmere South Levels by Wood Group and Arcadis.

Conservation Concern Category	Species Present within the Site
Qualifying feature of European site	Marsh harrier, hen harrier, bittern, woodlark (*Lullula arborea*)
Assemblage feature/nationally notable feature of European sites	Herring gull, black-headed gull (*Chroicocephalus ridibundus*), lesser black-backed gull (*Larus fuscus*), avocet (*Recurvirostra avosetta*), gadwall, white-fronted goose (*Anser albifrons*), teal, shoveler, pintail (*Anas acuta*), water rail, shelduck (*Tadorna tadorna*), little egret, spoonbill (*Platalea leucorodia*), barnacle goose (*Branta leucopsis*), brent goose (*Branta bernicla*), wigeon (*Anas penelope*), lapwing (*Vanellus vanellus*), black-tailed godwit, bearded tit
Waterfowl and waders assemblage	Greylag goose, oystercatcher *(Haematopus ostralegus),*

Conservation Concern Category	Species Present within the Site
of a European site	bar-tailed godwit *(Limosa lapponica),* curlew *(Numenius arquata),* woodcock
Seabird assemblage of a European site	Common gull
Schedule 1 species*	Kingfisher, Cetti's warbler
Red list species**	Song thrush, whinchat (*Saxicola rubetra*)

* W&CA (Ref. 6.3.40). **BoCC (Ref. 6.3.47)

2.2.47 The majority of the wader and wildfowl species are associated with the coastal floodplain grassland of the Minsmere South Levels and are therefore unlikely to be present within the footprint of the Site.

2.2.48 To the east of the site was a mosaic of shingle, sand dune, dune grassland and scrub habitat, with part of this area, to the north of the development footprint, occurring within the Minsmere to Walberswick SPA. Thirty-three bird species of nature conservation importance were recorded, as detailed in **Table 6.3.8** below.

Table 6.3.8. Bird species of nature conservation importance recorded along the coast by Wood Group and Arcadis.

Conservation Concern Category	Species Present within the Site
Qualifying feature of European site	Brent goose, avocet, teal, shoveler, gadwall, dunlin (*Calidris alpina*), little tern (*Sternula albifrons*), sandwich tern (*Sterna sandvicensis*)
Assemblage feature/nationally notable feature of European sites	Herring gull, black-headed gull, lesser black-backed gull, wigeon, shelduck, pintail, lapwing, bar tailed godwit
Waterfowl and waders assemblage of a European site	Oystercatcher, ringed plover (*Charadrius hiaticula*), turnstone (*Arenaria interpres*), whooper swan (*Cygnus cygnus*), greylag goose, barnacle goose, curlew
Seabird assemblage of a European site	Arctic tern (*Sterna paradisaea*), *common* gull
Schedule 1 species*	Black redstart
Red list species**	Linnet, skylark, starling (*Sturnus vulgaris*), song thrush, house sparrow
Amber list species**	Dunnock, meadow pipit

* W&CA (Ref. 6.3.40). **BoCC (Ref. 6.3.47)

2.2.49 Again, the majority of these species are either associated with the coastal floodplain habitat of the Minsmere South Levels, or the coast and offshore environment and are therefore unlikely to be present within the footprint of the Site. Of the species identified, this location may provide a foraging resource for bird species breeding within the wider landscape including: meadow pipit; linnet; house sparrow; skylark; and starling.

2.2.50 Further to the east offshore, but within the Zol, 30 bird species of nature conservation importance were recorded, as detailed in **Table 6.3.9** below.

Table 6.3.9. Bird species of nature conservation importance recorded out to sea by Wood Group and Arcadis.

Conservation Concern Category	Species Present within the Site
Qualifying feature of European site	Red-throated diver (*Gavia stellata*), little tern, sandwich tern, avocet, teal
Assemblage feature/nationally notable feature of European sites	Herring gull, black-headed gull, Mediterranean gull (*Larus melanocephalus*), lesser black-backed gull, pintail, shelduck
Waterfowl and waders assemblage of a European site	Turnstone, oystercatcher, ringed plover, curlew
Seabird assemblage of a European site	Common scoter (*Melanitta nigra*), eider (*Somateria mollissima*), fulmar (*Fulmarus glacialis*), sooty shearwater (*Puffinus griseus*), gannet (*Morus bassanus*), arctic tern, kittiwake (*Rissa tridactyla*), common gull, great black-backed gull (*Larus marinus*), arctic skua (*Stercorarius parasiticus*), long-tailed duck (*Clangula hyemalis*), velvet scoter (*Melanitta fusca*), goldeneye (*Bucephala clangula*), razorbill (*Alca torda*), guillemot (*Uria aalge*)

2.2.51 The majority of seabirds, waterfowl and waders sighted at this location were recorded commuting along the coast, with small numbers of little tern and sandwich tern recorded foraging offshore. The Sizewell Rigs County Wildlife Site (CWS) supports an important kittiwake breeding population. Again, these species are associated with coastal habitat and therefore highly unlikely to be present within the footprint of the Site.

f) Bats

2.2.52 Within the area proposed for stockpiling during construction, activity and static detector surveys undertaken by Wood Group between 2007 and 2011 (Ref. 6.3.28, Ref. 6.3.29, Ref. 6.3.30, Ref. 6.3.31, Ref. 6.3.32 and Ref. 6.3.33) indicated consistent low-level activity by a limited number of species including: *Myotis* spp.; noctule (*Nyctalus noctula*) common pipistrelle (*Pipistrellus pipistrellus*); soprano pipistrelle (*Pipistrellus pygmaeus*); and barbastelle (*Barbastella barbastellus)*. An assessment of the trees present within this area in 2016 found no potential for roosting bats.

2.2.53 Between 2013 and 2015 no surveys were specifically undertaken within this area. However, two static detectors, positioned to monitor the wider estate, were located directly adjacent to the Site (Monitoring Station (MS) 29 and MS35) (see **Table 6.2.2** in **Annex 6.2** and **Figure 6.1** for location details) (Ref. 6.3.33).

2.2.54 Except for notable early activity from 'big bat' spp[1] in Season (S) 1 of 2014, only low levels of bat activity were recorded at MS35. Bat activity at MS29 was greater, with this monitoring location potentially recording bat activity from the northern extent of the Sizewell Marshes SSSI. MS29 was identified as a bat 'hotspot'[2] in S2 of 2014;

[1] The 'big bat' spp. group consists of noctule, Leisler's bat (*Nyctalus leisleri*) and serotine.

[2] A monitoring station was classified as a bat 'hotspot' where overall bat activity (i.e. mean passes per night (mppn) for a single recording season from all species combined) exceeded 300. Three hundred passes in a ten-hour night equates to one bat pass every two minutes (30 passes/hour in a ten-hour night). Nights in S1 were shorter than this, nights in S3 longer than this, but the same figure has been used throughout to denote a

pipistrelle activity dominated, with *Myotis* spp. accounting for 6% of total activity and barbastelle for 3%[3]. Extended periods of raised *Myotis* spp. activity were additionally recorded throughout 2013 and 2014, with the exception of S1 2013.

2.2.55 Habitat within the Site consist largely of made ground, with limited suitability for bat species, and as such bat surveys did not focus on these areas.

2.2.56 Activity within Coronation Wood and its surrounds primarily consisted of common and soprano pipistrelle recordings, with all other recorded species (*Myotis* spp., noctule, Leisler's bat (N*yctalus leisleri*)[4], Nathusius' pipistrelle (*Pipistrellus nathusii*), serotine; barbastelle, (*Eptesicus serotinus*), and brown long-eared bat (*Plecotus auritus*) occurring at only low levels. A single common pipistrelle pass was recorded, in October 2015, in the 20 minutes after sunset at the south-west corner of Coronation Wood, although not observed, it was considered that this pass may have represented an individual emerging from Coronation Wood.

2.2.57 Tree assessments in 2012 (Ref. 6.3.33) and 2016 identified 11 trees with the potential to support roosting bats within Coronation Wood (one high, seven medium and three of low potential) and a further four medium and six high potential trees located within the woodland strip to the south of Coronation Wood. This area was outside of the Site boundary but within the ZoI, that runs to the west of the Sizewell A and B Station access road as far as the Sizewell Gap road.

2.2.58 Further assessment of the trees present between Coronation Wood and Pillbox Field in 2015 identified a group of Willow (*Salix* spp.) within an area of wet woodland with a number of features potentially suitable for roosting bats. While a detailed assessment of this area could not be undertaken, some features were considered to have high potential to support roosting bats.

2.2.59 The results of tree assessments within the Site are illustrated on **Figure 6.3**.

2.2.60 The 2019 Phase 1 habitat survey undertaken for eastward Option 2 of the pedestrian footpath identified the carr woodland to the east of Pillbox Field to have a number of trees with some potential to support roosting bats. Please note that as Option 2 has not been taken forward, the location of these trees with bat roost potential have not been included on **Figure 6.3**.

2.2.61 Activity transect surveys undertaken at Pillbox Field and Coronation Wood (as illustrated on **Figure 6.2**) recorded four species (noctule, common pipistrelle, soprano pipistrelle, and brown long-eared bat) as well as recordings of unidentified *Myotis* spp. and *Nyctalus* spp. Overall activity levels were notably higher during the September transect (at 28 bat passes per hour (B/h)) compared to levels recorded in

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bat 'hotspot'. Bat passes do not relate to numbers of bats, but to bat activity. This is an arbitrary threshold, based on levels of activity recorded at Sizewell (an arbitrary threshold is necessary because levels of activity vary considerably between projects, geographies, equipment and the definition of activity (passes) used).

3 These percentages do not take account of the varying detectability of different species/groups.

4 The identification of Leisler's bat from echolocation calls can be extremely difficult due to the considerable overlap in the characteristics of the two *Nyctalus* spp. (noctule and Leisler's bat) as well as overlap between the calls of Leisler's bat and serotine.

October (at 8.6B/h). It was considered that this was at least in part due to the 5°C temperature difference noted between the two survey visits. Activity was dominated by common pipistrelle, with activity levels of the second most frequently encountered species, soprano pipistrelle, notably lower. *Myotis* spp. showed increased levels of relative activity during the October transect compared to the September transect. *Myotis* spp. were also the only species/species group recorded within Pillbox Field. Recorded activity was greater along the Sizewell A and B power stations access road and eastern, southern and western edges of Coronation Wood compared to other sections of the transect route. The results of these transects are illustrated on **Figure 6.2**.

2.2.62 During bat surveys undertaken within the Zol for bats, species recorded included Daubenton's bat (*Myotis daubentonii*), Natterer's bat, noctule, common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, serotine, barbastelle, and brown long-eared bat, as well as potential Leisler's bat recordings[5] and recordings assigned to three species groups (*Myotis* spp., *Pipistrellus* spp. and *Nyctalus* spp.).

2.2.63 A further six static SM2 detectors deployed by Arcadis in 2013 and/or 2014 were located within the Zol for bats (Ref. 6.3.34) (see **Figure 6.1**). Of these locations, notable barbastelle activity levels were recorded at three (MS16, MS20 and MS31), with more than 10% of the total number of bat calls from barbastelle on at least one occasion at MS16 and MS31. Activity levels and the timing of recordings at MS31 suggest the potential presence of a barbastelle roost in the vicinity of Broom Covert.

2.2.64 Notable activity levels of 'big bat' spp. were recorded at MS12 and MS36 with activity levels and the timing of recordings at both locations suggesting the presence of a nearby roost. Notable *Myotis* spp. activity levels were recorded at MS20.

2.2.65 MS16 and MS24 were noted for levels of Nathusius' pipistrelle activity, although the timing of these passes did not suggest the presence of a nearby roost. Brown long-eared bat were considered to be under-represented throughout static detector and activity surveys due to the quiet nature of their echolocation calls; however, MS16, MS20 and MS31 all recorded higher levels of relative activity of brown long-eared bat passes (greater than five mean passes per night (mppn)[6]) in at least one Season during static detector surveys in 2013 and 2014.

2.2.66 Full details of the activity levels of recorded bat species at these MS locations are detailed in **Table 6.3.10** to **Table 6.3.15** in **Annex 6.3.1** of this Annex. These tables show the number of survey nights undertaken at each location during S1, S2 and S3 in 2013 and 2014. Also indicated in these tables is a measure of bat activity for the six bat groups considered (barbastelle; *Myotis* spp.; 'big bat' spp.; Nathusius' pipistrelle; all pipistrelle spp. combined; and long-eared bats) in the form of mppn.

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[5] The identification of Leisler's bat from echolocation calls can be extremely difficult due to the considerable overlap in the characteristics of the two *Nyctalus* spp. (noctule and Leisler's bat) as well as overlap between the calls of Leisler's bat and serotine.

[6] The number of passes recorded demonstrates only relative bat activity, and not bat numbers. It is not possible, from automated recorders, to distinguish between twenty bats passing once, and one bat passing twenty times. Relative bat activity is used to determine the importance of different areas to bat species/species groups, and should not be used to infer where the greatest number of individuals may be found.

2.2.67 Additional surveys within the Site boundary and immediately adjacent habitats identified mature riparian trees with the potential to support roosting bats within the area of Sizewell Marshes SSSI, and associated gap in the Sizewell Marshes SSSI, (between Coronation Wood and Pillbox Field). Further potential roost locations assessed included the pillbox located within Pillbox Field and Rosery Cottage located at the northern edge of Pillbox Field. The pillbox was assessed as being too light and airy to be suitable as a bat roost and no evidence of current occupation was identified. A detailed inspection of Rosery Cottage was not possible due to access restrictions; however, although a distant external inspection of the main building did not reveal any obvious access points for bats, there is a desk-study record (from 1994) for common pipistrelle associated with this property. A small garage at Rosery cottage is due to be demolished as part of the Proposed Development. This comprised a small, timber framed structure with tin, corrugated side panels and a transparent acrylic, corrugated roof. This structure did not have any potential for roosting bats. From transect surveys, foraging activity within Pillbox Field itself was limited, with only two bat passes recorded, both of which were *Myotis* spp.

2.2.68 Three roost locations were identified within the ZoI during radio-tracking surveys undertaken by Wood Group in 2010 (Ref. 6.3.31) and 2011 (Ref. 6.3.32) and on behalf of Arcadis in 2014 (Ref. 6.3.36). All three roost locations (R4, R35 and R36) were located within Grimseys Wood and used by barbastelle. Due to safety restrictions, it was not possible to identify the specific tree(s) in which these roosts were located.

2.2.69 Surveys undertaken in relation to the Galloper Wind Farm Eastern Super Grid Transformer Project within Sizewell Marshes SSSI in 2006, 2007, 2011 and 2013 (Ref. 6.3.16) identified the presence of four bat tree roosts, used by unspecified species) and a further 38 trees with the potential for use by roosting bats. A programme of tree felling, under licence, has subsequently been undertaken, during which a roosting Natterer's bat was identified.

2.2.70 Surveys undertaken following construction works at this location in 2015 (Ref. 6.3.35) recorded similar levels of species diversity and activity levels to those identified pre-development, although three species (Leisler's bat[7], Nathusius' pipistrelle and barbastelle) previously recorded at low levels were not recorded in 2015. Installed bat boxes were found to be used by common and soprano pipistrelle and droppings considered likely to be Natterer's bat were identified.

g) Other mammals

i. Brown hare (*Lepus europaeus*)

2.2.71 Incidental records of brown hare were recorded within the area proposed for stockpiling during construction and the surrounding habitats during reptile surveys undertaken by Arcadis (Ref. 6.3.14).

[7] The identification of Leisler's bat from echolocation calls can be extremely difficult due to the considerable overlap in the characteristics of the two *Nyctalus* spp. (noctule and Leisler's bat) as well as overlap between the calls of Leisler's bat and serotine.

ii. Harvest mouse (*Micromys minutus*)

2.2.72 No harvest mouse sightings were identified within the survey records of Wood Group or Arcadis.

iii. Hedgehog (*Erinaceus europaeus*)

2.2.73 No hedgehog sightings were identified within the survey records of Wood Group or Arcadis.

iv. Otter (*Lutra lutra*)

2.2.74 During surveys by Arcadis (Ref. 6.3.39) in 2013 and 2015, no confirmed otter holts were identified, although a log pile located within Sizewell Marshes SSSI to the south of Coronation Wood was considered to have limited potential to be used by otter. Despite the absence of evidence for the presence of otters identified during this survey, incidental records of otter signs, recorded by Wood Group during water vole surveys in 2007, were considered to indicate that the wider EDF Energy (NGL) Sizewell Estate and its surrounding habitats are a well-used otter resource throughout the year (Ref. 6.3.37). The occasional use by otters of the watercourse and wet woodland between Coronation Wood and Pillbox Field cannot therefore be discounted.

v. Water vole (*Arvicola amphibius*)

2.2.75 Water vole surveys by Wood Group in 2007 and 2009 (Ref. 6.3.38) and Arcadis (Ref. 6.3.39) indicated that water vole occur widely within Sizewell Marshes. Updated water vole surveys were undertaken by Arcadis in 2015 of the ditches within and adjacent to Sizewell Marshes SSSI directly to the south of Coronation Wood, where the two footbridges are proposed. Of the four ditches identified, one was potentially suitable for water vole, although there was an absence of water vole field signs that would indicate current occupation, and the low banks suggested that it may be prone to flooding. The remaining three ditches were shaded or heavily shaded and were therefore assessed as having low or very low potential to support water vole.

2.2.76 The 2019 Phase 1 habitat survey revisited the ditches surveyed in 2015 and confirmed the earlier findings and no water vole field signs (burrows, latrines, feeding signs) were identified.

vi. Deer

2.2.77 Extensive evidence of deer activity within the Site, notably within the area proposed for stockpiling during construction, as well as within the Zol and wider landscape were seen, including muntjac (*Muntiacus reevesi*) and red deer (*Cervus elaphus*).

ANNEX 6.3.1 – BAT ACTIVITY LEVEL TABLES

Table 6.3.10. Arcadis static detector results within the Site and ZoI in S1 2013 showing the mppn for the considered bat species/species groups.

Session	Monitoring Station	Microphone Location	Number of functional nights	Barbastelle	*Myotis* spp.*	Big Bat spp.**	Nathusius' pipistrelle***	*Pipistrellus* spp.****	Long-eared bat*****	Total
2	12	TM 470 647	13	7.54	2.23	18.69	4.92	153.46	0.85	187.69
2	16	TM 473 646	14	0.79	17.71	4.86	14.93	482.93	1.57	522.79
		TM 473 646		12.50	6.00	2.57	8.50	453.29	0.64	483.50
2	20	TM 470 644	13	70.15	4.77	4.23	6.15	758.00	1.38	844.69
2	24	TM 469 644	13	4.46	8.46	9.54	4.85	514.69	0.85	542.85
2	27	TM 469 632	14	1.86	2.07	0.71	8.57	395.79	1.14	410.14
2	29	TM 469 641	13	4.00	3.15	8.62	9.38	133.38	1.38	159.92
N/A	31	Not monitored in Season 1 2013								
N/A	35	Not monitored in Season 1 2013								
N/A	36	Not monitored in Season 1 2013								

* *Myotis* spp. includes those calls identified by SonoChiro specifically as Natterer's and Bechstein's bats, in addition to those identified to a group level as *Myotis* spp. It is not possible to identify the majority of *Myotis* calls to species, and Suffolk is in any case outside of the known range of Bechstein's bat..

** Big Bat spp. includes those calls identified by SonoChiro specifically as noctule, serotine and northern bat in addition to those identified to a group level as *Eptesicus/Nyctalus*.

*** Nathusius' pipistrelle includes those calls identified by SonoChiro specifically as Nathusius' pipistrelle in addition to those identified as Nathusius'/Kuhl's/Savi's pipistrelle and those as Kuhl's pipistrelle but which manual checks showed to be Nathusius' pipistrelle.'

**** Pipistrelle spp. includes those calls identified by SonoChiro specifically as common and soprano pipistrelles in addition to those identified to these at a group level.

***** Long-eared bats include those calls identified by SonoChiro specifically as brown or grey long-eared bats in addition to those identified to a group level as long-eared bats.

Table 6.3.11. Arcadis static detector results within the Site and Zol in S2 2013 showing the mppn for the considered bat species/species groups.

Session	Monitoring Station	Microphone Location	Number of functional nights	Barbastelle	*Myotis* spp.*	Big Bat spp.**	Nathusius' pipistrelle***	*Pipistrellus* spp.****	Long-eared bat*****	Total
2	12	TM 470 647	11	6.82	9.09	326.00	1.27	412.91	2.27	758.36
2	16	TM 473 646	14	12.86	14.36	11.71	1.43	178.00	4.36	222.71
		TM 473 646		16.29	4.14	4.29	1.00	429.86	1.71	457.29
2	20	TM 470 644	11	11.64	14.64	2.18	1.18	173.64	1.45	204.73
2	24	TM 469 644	14	1.36	15.00	3.21	1.36	134.29	0.93	156.14
2	27	TM 469 632	12	0.75	10.00	3.83	4.58	1064.33	3.83	1087.33
2	29	TM 469 641	14	0.79	21.21	6.43	2.43	113.86	4.14	148.86
N/A	31	Not monitored in Season 2 2013								
N/A	35	Not monitored in Season 2 2013								
N/A	36	Not monitored in Season 2 2013								

* *Myotis* spp. includes those calls identified by SonoChiro specifically as Natterer's and Bechstein's in addition to those identified to a group level as *Myotis* spp. . It is not possible to identify the majority of *Myotis* calls to species, and Suffolk is in any case outside of the known range of Bechstein's bat.. .

** Big Bat spp. includes those calls identified by SonoChiro specifically as noctule, serotine and northern bat in addition to those identified to a group level as *Eptesicus/Nyctalus*.

*** Nathusius' pipistrelle includes those calls identified by SonoChiro specifically as Nathusius' pipistrelle in addition to those identified as Nathusius'/Kuhl's/Savi's pipistrelle and those as Kuhl's pipistrelle but which manual checks showed to be Nathusius' pipistrelle.'

**** Pipistrelle spp. includes those calls identified by SonoChiro specifically as common and soprano pipistrelles in addition to those identified to these at a group level.

***** Long-eared bats include those calls identified by SonoChiro specifically as brown or grey long-eared bats in addition to those identified to a group level as long-eared bats.

Table 6.3.12. Arcadis static detector results within the Site and Zol in S3 in 2013 showing the mppn for the considered bat species/species groups.

Session	Monitoring Station	Microphone Location	Number of functional nights	Barbastelle	*Myotis* spp.*	Big Bat spp.**	Nathusius' pipistrelle***	*Pipistrellus* spp.****	Long-eared bat*****	Total
2	12	TM 470 647	14	4.71	9.36	0.93	3.29	416.93	2.00	437.21
2	16	TM 473 646	14	0.86	0.50	0.64	1.21	67.50	1.07	71.79
		TM 473 646	14	15.14	1.21	0.36	1.21	231.71	0.00	249.64
2	20	TM 470 644	4	1.50	1.50	4.50	0.00	18.50	0.25	26.25
2	24	TM 469 644	14	9.57	24.64	0.21	4.86	461.36	3.14	503.79
2	27	TM 469 632	6	0.17	11.00	1.67	1.50	102.00	5.00	121.33
2	29	TM 469 641	14	13.50	18.86	2.57	5.36	230.29	5.36	275.93
2	31	TM 466 630	5	0.00	0.00	0.60	0.40	2.20	0.20	3.40
		TM 465 630		56.20	13.80	12.40	3.60	294.20	17.00	397.20
N/A	35	Not monitored in Season 3 2013								
N/A	36	Not monitored in Season 3 2013								

* *Myotis* spp. includes those calls identified by SonoChiro specifically as Natterer's and Bechstein's in addition to those identified to a group level as *Myotis* spp. It is not possible to identify the majority of *Myotis* calls to species, and Suffolk is in any case outside of the known range of Bechstein's bat.

** Big Bat spp. includes those calls identified by SonoChiro specifically as noctule, serotine and northern bat in addition to those identified to a group level as *Eptesicus/Nyctalus*.

*** Nathusius' pipistrelle includes those calls identified by SonoChiro specifically as Nathusius' pipistrelle in addition to those identified as Nathusius'/Kuhl's/Savi's pipistrelle and those as Kuhl's pipistrelle but which manual checks showed to be Nathusius' pipistrelle.'

**** Pipistrelle spp. includes those calls identified by SonoChiro specifically as common and soprano pipistrelles in addition to those identified to these at a group level.

***** Long-eared bats include those calls identified by SonoChiro specifically as brown or grey long-eared bats in addition to those identified to a group level as long-eared bats.

Table 6.3.13. Arcadis static detector results within the Site and Zol in S1 2014 showing the mppn for the considered bat species/species groups.

Session	Monitoring Station	Microphone Location	Number of functional nights	Barbastelle	*Myotis* spp.*	Big Bat spp.**	Nathusius' pipistrelle***	*Pipistrellus* spp.****	Long-eared bat*****	Total
2	12	TM 470 647	7	9.00	1.43	137.71	7.29	497.57	0.71	653.71
2	16	TM 473 646	15	6.53	2.20	23.27	23.53	137.93	3.67	197.13
		TM 473 646		32.53	1.80	4.27	15.73	249.67	0.07	304.07
2	20	TM 470 644	14	15.43	2.93	8.50	6.36	178.43	0.86	212.50
2	24	TM 469 644	14	0.36	4.93	5.14	2.29	247.14	0.29	260.14
2	27	TM 469 632	Not monitored in Season 1 2014							
2	29	TM 469 641	14	0.14	3.86	8.57	4.14	63.93	1.00	81.64
2	31	TM 466 630	13	0.00	2.54	2.62	2.46	48.15	0.69	56.46
		TM 460 648		0.69	3.08	11.69	1.92	66.92	1.00	85.31
2	35	TM 473 645	14	4.57	0.71	16.79	4.93	94.86	0.36	122.21
2	36	TM 467 638	14	0.00	2.71	26.14	3.43	282.07	2.36	316.71

* *Myotis* spp. includes those calls identified by SonoChiro specifically as Natterer's and Bechstein's in addition to those identified to a group level as *Myotis* spp. . It is not possible to identify the majority of *Myotis* calls to species, and Suffolk is in any case outside of the known range of Bechstein's bat.

** Big Bat spp. includes those calls identified by SonoChiro specifically as noctule, serotine and northern bat in addition to those identified to a group level as *Eptesicus/Nyctalus*.

*** Nathusius' pipistrelle includes those calls identified by SonoChiro specifically as Nathusius' pipistrelle in addition to those identified as Nathusius'/Kuhl's/Savi's pipistrelle and those as Kuhl's pipistrelle but which manual checks showed to be Nathusius' pipistrelle.'

**** Pipistrelle spp. includes those calls identified by SonoChiro specifically as common and soprano pipistrelles in addition to those identified to these at a group level.

***** Long-eared bats include those calls identified by SonoChiro specifically as brown or grey long-eared bats in addition to those identified to a group level as long-eared bats.

Table 6.3.14. Arcadis static detector results within the Site and ZoI in S2 2014 showing the mppn for the considered bat species/species groups.

Session	Monitoring Station	Microphone Location	Number of functional nights	Barbastelle	*Myotis* spp.*	Big Bat spp.**	Nathusius' pipistrelle***	*Pipistrellus* spp.****	Long-eared bat*****	Total
2	12	TM 470 647	14	6.21	4.36	48.29	0.57	605.07	1.50	666.00
2	16	TM 473 646	13	14.00	5.00	5.00	0.77	126.62	1.08	152.46
		TM 473 646		11.00	0.85	0.23	0.31	234.85	1.00	248.23
2	20	TM 470 644	14	20.86	9.50	7.50	0.43	205.21	3.86	247.36
2	24	TM 469 644	14	2.64	7.29	2.14	1.00	226.93	0.93	240.93
2	27	TM 469 632	Not monitored in Season 2 2014							
2	29	TM 469 641	13	10.23	21.77	6.08	2.46	291.69	7.00	339.23
2	31	TM 466 630	9	1.11	3.89	9.11	1.33	70.11	0.67	86.22
		TM 460 648	9	0.33	2.78	1.78	2.00	31.67	0.78	39.33
2	35	TM 473 645	13	0.54	0.31	0.00	0.08	7.69	0.00	8.62
2	36	TM 467 638	2	0.50	2.50	11.00	0.00	42.00	0.00	56.00

* *Myotis* spp. includes those calls identified by SonoChiro specifically as Natterer's and Bechstein's in addition to those identified to a group level as *Myotis* spp. . It is not possible to identify the majority of *Myotis* calls to species, and Suffolk is in any case outside of the known range of Bechstein's bat.

** Big Bat spp. includes those calls identified by SonoChiro specifically as noctule, serotine and northern bat in addition to those identified to a group level as *Eptesicus/Nyctalus*.

*** Nathusius' pipistrelle includes those calls identified by SonoChiro specifically as Nathusius' pipistrelle in addition to those identified as Nathusius'/Kuhl's/Savi's pipistrelle and those as Kuhl's pipistrelle but which manual checks showed to be Nathusius' pipistrelle.'

**** Pipistrelle spp. includes those calls identified by SonoChiro specifically as common and soprano pipistrelles in addition to those identified to these at a group level.

***** Long-eared bats include those calls identified by SonoChiro specifically as brown or grey long-eared bats in addition to those identified to a group level as long-eared bats.

Table 6.3.15. Arcadis static detector results within the Site and Zol in S3 2014 showing the mppn for the considered bat species/species groups.

Session	Monitoring Station	Microphone Location	Number of functional nights	Barbastelle	*Myotis* spp.*	Big Bat spp.**	Nathusius' pipistrelle***	*Pipistrellus* spp.****	Long-eared bat*****	Total
2	12	TM 470 647	13	5.15	9.69	6.46	1.62	217.77	1.15	241.85
2	16	TM 473 646	13	1.92	2.92	3.62	3.69	230.92	5.38	248.46
		TM 473 646		3.23	2.00	2.00	2.15	362.54	1.00	372.92
2	20	TM 470 644	14	8.71	14.64	4.00	3.79	816.79	7.79	855.71
2	24	TM 469 644	4	0.25	3.75	1.25	0.50	269.00	2.75	277.50
2	27	TM 469 632	Not monitored in Season 3 2014							
2	29	TM 469 641	13	0.54	3.92	2.85	0.92	99.62	0.69	108.54
2	31	TM 466 630	7	3.14	6.43	5.29	2.00	162.57	0.29	179.71
		TM 460 648		1.71	2.00	3.00	0.43	37.57	0.57	45.29
2	35	TM 473 645	13	1.31	1.46	3.08	2.15	52.62	0.46	61.08
2	36	TM 467 638	14	0.93	8.36	6.29	2.50	185.07	0.00	203.14

* *Myotis* spp. includes those calls identified by SonoChiro specifically as Natterer's and Bechstein's in addition to those identified to a group level as *Myotis* spp. It is not possible to identify the majority of *Myotis* calls to species, and Suffolk is in any case outside of the known range of Bechstein's bat.

** Big Bat spp. includes those calls identified by SonoChiro specifically as noctule, serotine and northern bat in addition to those identified to a group level as *Eptesicus/Nyctalus*.

*** Nathusius' pipistrelle includes those calls identified by SonoChiro specifically as Nathusius' pipistrelle in addition to those identified as Nathusius'/Kuhl's/Savi's pipistrelle and those as Kuhl's pipistrelle but which manual checks showed to be Nathusius' pipistrelle.'

**** Pipistrelle spp. includes those calls identified by SonoChiro specifically as common and soprano pipistrelles in addition to those identified to these at a group level.

***** Long-eared bats include those calls identified by SonoChiro specifically as brown or grey long-eared bats in addition to those identified to a group level as long-eared bats.

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ANNEX 6.4 DESK STUDY

CONTENTS

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1. METHODOLOGY

1.1.1 This annex presents the desk study records of protected or otherwise notable species of conservation interest within 500m of the Sizewell B Relocated Facilities site boundary (hereafter referred to as the 'Site') for great crested newts, birds and bats, and 200m for plants, invertebrates, other amphibians, reptiles and other terrestrial mammals. Data were obtained from Suffolk Biodiversity Information Service (SBIS) in December 2014 and September 2018.

1.1.2 It should be noted that no desk study records were identified for great crested newts within 500m of the Proposed Development, or for other amphibian species within the 200m Zone of Influence (Zol) of the Site.

2. PLANTS

2.1.1 **Table 6.4.1** below summarises the desk study results for plants within the 200m ZoI of the Site.

Table 6.4.1. Desk study records for plants.

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Annual Beard Grass	*Polypogon monspeliensis*	Sizewell	Shingle around power station buildings	TM4718663694	2016	Within Site boundary
Clustered Clover	*Trifolium glomeratum*	Sizewell	Bridleway	TM470627	2000	60m west of Site boundary
Corn Spurrey	*Spergula arvensis*	Sizewell	Not given	TM4662	2000	N/A*
Curled Dock	*Rumex crispus subsp. uliginosus*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
Deptford Pink	*Dianthus armeria*	Sizewell	Between Sizewell B & C sites	TM474639	2014	70m east of Site boundary
Harebell	*Campanula rotundifolia*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
Henbane	*Hyoscyamus niger*	Sizewell	In garden	TM475628	2006	200m east of Site boundary
Man Orchid	*Aceras anthropophorum*	Sizewell	Rabbit grazed lawn in Power Station	TM4763	2005	N/A*
Mossy Stonecrop	*Crassula tillaea*	Sizewell	Sizewell Beach	TM4762	2010	N/A*
Sea Bindweed	*Calystegia soldanella*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
Sea Holly	*Eryngium maritimum*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Sea Kale	*Crambe maritima*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
Sea Pea	*Lathyrus japonicus*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
		Sizewell		TM4662	2000	N/A*
Sheep's-bit	*Jasione montana*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
Smooth Cat's-ear	*Hypochaeris glabra*	Sizewell	Bridleway	TM470627	2000	60m west of Site boundary
Yellow Horned-poppy	*Glaucium flavum*	Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary

* Insufficient information provided in grid reference to enable the specific location of this record within the 200m ZoI to be determined. Desk study data with insufficient detail of location are included on a precautionary basis.

3. INVERTEBRATES

3.1.1 **Table 6.4.2** below summarises the desk study results for invertebrates within the 200m ZoI of the Site.

Table 6.4.2. Desk study records for invertebrates.

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Autumnal Rustic	*Eugnorisma glareosa*	Sizewell		TM4762	2006	N/A*
Blood-Vein	*Timandra comae*	Sizewell		TM4762	2006	N/A*
		Sizewell		TM475628	2005	200m east of Site boundary
		Sizewell	Sizewell Belts	TM4663	1998	N/A*
		Sizewell		TM4764	1997	N/A*
		Sizewell		TM4664	1996	N/A*
Brown-spot Pinion	*Agrochola litura*	Sizewell		TM4762	2006	N/A*
Buff Ermine	*Spilosoma luteum*	Sizewell	Sizewell Belts	TM4663	1998	N/A*
Bulrush Veneer	*Calamotropha paludella*	Sizewell		TM4664	1996	N/A*
Cinnabar	*Tyria jacobaeae*	Sizewell	Sizewell Beach	TM475634	2017	15m east of Site boundary
		Sizewell	Sizewell Belts	TM4663	2009	N/A*
		Sizewell	Sizewell Beach	TM4763	2000	N/A*
		Sizewell		TM4664	1996	N/A*
Dark-barred Twin-spot Carpet	*Xanthorhoe ferrugata*	Sizewell		TM4664	1996	N/A*
N/A	*Dioxyna bidentis*	Sizewell		TM4662	2001	N/A*
Feathered Gothic	*Tholera decimalis*	Sizewell		TM4762	2006	N/A*
Flame Wainscot	*Mythimna flammea*	Sizewell		TM4664	1996	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Garden Tiger	*Arctia caja*	Sizewell		TM4664	1996	N/A*
		Sizewell		TM4763	1996	N/A*
		Sizewell	Sizewell Levels and Associated Areas	TM4764	1995	N/A*
Ghost Moth	*Hepialus humuli*	Sizewell	Sizewell Belts	TM4663	1998	N/A*
Grayling	*Hipparchia semele*	Sizewell		TM476635	2016	140m east of Site boundary
		Sizewell	Sizewell Dunes	TM475638	2016	170m east of Site boundary
		Sizewell	Sizewell Dunes	TM475642	2016	N/A*
		Sizewell	Sizewell Belts	TM4763	2016	N/A*
		Sizewell	Sizewell Beach	TM47626354	2015	150m east of Site boundary
		Sizewell		TM4764	2015	N/A*
		Sizewell	Sizewell Power Station	TM4763	2015	N/A*
		Sizewell	Sizewell Belts	TM4663	2013	N/A*
		Sizewell		TM4664	2013	N/A*
		Sizewell	Sizewell Power Station	TM4763	2008	N/A*
		Sizewell	Sizewell Beach N	TM4764	2008	N/A*
		Sizewell		TM4762	2006	N/A*
		Sizewell		TM470628	2003	30m west of Site boundary
Hedge Rustic	*Tholera cespitis*	Sizewell		TM4762	2006	N/A*
		Sizewell		TM4664	1996	N/A*
Large Wainscot	*Rhizedra lutosa*	Sizewell		TM4762	2006	N/A*
		Sizewell		TM474629	2001	150m east of Site boundary
Latticed Heath	*Chiasmia clathrata*	Sizewell		TM4664	1996	N/A*
N/A	*Lithobius (Lithobius)*	Sizewell	Sizewell Beach	TM4672	1994	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
	lapidicola					
Long-horned soldier fly	*Vanoyia tenuicornis*	Sizewell	Sizewell Belts	TM4663	1999	N/A*
Long-legged Tabby	*Synaphe punctalis*	Sizewell		TM475628	2005	200m east of Site boundary
Marbled Clover	*Heliothis viriplaca*	Sizewell	Sizewell Beach	TM4763	1999	N/A*
Marbled Yellow Pearl	*Evergestis extimalis*	Sizewell		TM475628	2005	200m east of Site boundary
Mottled Rustic	*Caradrina morpheus*	Sizewell	Sizewell Belts	TM4663	1998	N/A*
Mouse Moth	*Amphipyra tragopoginis*	Sizewell		TM4664	1996	N/A*
Norfolk Hawker	*Aeshna isosceles*	Sizewell Belts	Sizewell Belts SWT Reserve	TM4663	2010	N/A*
Oak Hook-tip	*Watsonalla binaria*	Sizewell		TM4762	2006	N/A*
		Sizewell		TM4664	1996	N/A*
Orange-rayed Pearl	*Nascia cilialis*	Sizewell		TM4664	1996	N/A*
Rosy Minor	*Mesoligia literosa*	Sizewell		TM475628	2005	200m east of Site boundary
		Sizewell		TM4664	1996	N/A*
Rosy Rustic	*Hydraecia micacea*	Sizewell		TM4664	1996	N/A*
Rustic	*Hoplodrina blanda*	Sizewell		TM4762	2006	N/A*
		Sizewell		TM4763	1996	N/A*
Shaded Broad-bar	*Scotopteryx chenopodiata*	Sizewell		TM4764	2005	N/A*
		Sizewell		TM4664	1996	N/A*
Shoulder-striped Wainscot	*Mythimna comma*	Sizewell		TM4664	1996	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Small Heath	*Coenonympha pamphilus*	Sizewell		TM476635	2016	140m east of Site boundary
		Sizewell	Sizewell Shore	TM4764	2016	N/A*
		Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell	Sizewell Beach	TM476634	2013	130m east of Site boundary
		Sizewell	Sizewell Beach	TM4763	2013	N/A*
		Sizewell	Sizewell Beach N	TM4764	2008	N/A*
		Sizewell	Sizewell Beach	TM4762	2003	N/A*
Small Phoenix	*Ecliptopera silaceata*	Sizewell		TM475628	2005	200m east of Site boundary
		Sizewell		TM4664	1996	N/A*
Small Square-spot	*Diarsia rubi*	Sizewell		TM4762	2006	N/A*
		Sizewell		TM474629	2001	150m east of Site boundary
		Sizewell	Sizewell Belts	TM4663	1998	N/A*
		Sizewell		TM4664	1996	N/A*
Tychius squamulatus	*Tychius squamulatus*	Sizewell		TM475637	2017	180m east of Site boundary
Wall	*Lasiommata megera*	Sizewell	Sizewell Beach	TM4764	2003	N/A*
		Sizewell	Sizewell area	TM4662	2003	N/A*
		Sizewell	Sizewell area	TM4663	2003	N/A*
White Ermine	*Spilosoma lubricipeda*	Sizewell		TM475628	2005	200m east of Site boundary
		Sizewell	Sizewell Belts	TM4663	1998	N/A*
		Sizewell		TM4664	1996	N/A*
White-line Dart	*Euxoa tritici*	Sizewell		TM475628	2005	200m east of Site boundary
		Sizewell		TM4664	1996	N/A*

* Insufficient information provided in grid reference to enable the specific location of this record within the 200m ZoI to be determined. Desk study data with insufficient detail of location are included on a precautionary basis.

4. REPTILES

4.1.1 **Table 6.4.3** below summarises the desk study results for reptiles within the 200m ZoI of the Site.

Table 6.4.3. Desk study results for reptiles.

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Adder	*Vipera berus*	Sizewell	Sizewell Beach Strip	TM476633	2011	160m east of Site boundary
		Sizewell	Coastal Strip	TM476635	2011	140m east of Site boundary
		Sizewell	Beach in front of power station	TM476634	2010	130m east of Site boundary
		Sizewell	Sizewell Beach and dunes	TM4762	2005	N/A*
Common Lizard	*Zootoca vivipara*	TM461633	Sizewell Dunes	TM476635	2013	150m east of Site boundary
		Sizewell	Goose Hills, Sizewell	TM472642	2012	Within the Site boundary
		Sizewell	Sizewell Belts, Sizewell	TM475628	2008	200m east of Site boundary
		Sizewell	Goose Hill, Sizewell	TM472644	2012	130m north of the Site boundary
		Sizewell	On coastal strip	TM475626	2011	200m south-east of the Site boundary
Grass Snake	*Natrix natrix*	Sizewell	Bank south of Sizewell A power station	TM470631	2005	Within the Site boundary
		Sizewell	Sizewell - On access road to Powers Stations	TM474628	2005	100m east of the Site boundary

* Insufficient information provided in grid reference to enable the specific location of this record within the 200m ZoI to be determined. Desk study data with insufficient detail of location are included on a precautionary basis.

5. BIRDS

5.1.1 **Table 6.4.4** below summarises the desk study results for birds within the 500m ZoI of the Site.

Table 6.4.4. Desk study results for birds.

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Arctic Skua	*Stercorarius parasiticus*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Arctic Tern	*Sterna paradisaea*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell		TM4762	2012	N/A*
		Sizewell Rigs		TM4763	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Balearic Shearwater	*Puffinus mauretanicus*	Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM4762	2008	N/A*
Barn Owl	*Tyto alba*	Sizewell Levels and Associated Areas	Sizewell Belts	TM4664	1999	N/A*
		Sizewell Common	Sizewell Common	TM4761	1999	N/A*
		Sizewell Levels and Associated Areas	Sizewell Belts	TM4663	1996	N/A*
		Sizewell Marshes		TM466638	1994	460m west of the Site boundary
Barn Swallow	*Hirundo rustica*	Sizewell		TM4664	2008	N/A*
		Sizewell		TM4762	2008	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Black-headed Gull	*Chroicocephalus ridibundus*	Sizewell		TM4763	2016	N/A*
		Sizewell		TM4764	2015	N/A*
Black Redstart	*Phoenicurus ochruros*	Sizewell	Sizewell Power Station	TM475631	2016	370m east of the Site boundary
		Sizewell	Pillbox field south of Sizewell Power Station	TM4763	2016	N/A*
		Sizewell	Sizewell Power Station	TM4763	2012	N/A*
		Sizewell	Sizewell Power Station	TM4763	2012	N/A*
		Sizewell		TM4762	2011	N/A*
		Sizewell		TM4664	2008	N/A*
		Sizewell	Sizewell Beach	TM476632	1994	330m east of the Site boundary
		Sizewell		TM475629	1994	240m east of the Site boundary
Black Tern	*Chlidonias niger*	Sizewell Rigs		TM4763	2015	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell Rigs		TM4763	2012	N/A*
		Sizewell		TM4762	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Black-throated Diver	*Gavia arctica*	Sizewell		TM4664	1995	N/A*
Blue Tit	*Cyanistes caeruleus*	Sizewell		TM4762	2007	N/A*
Bohemian Waxwing	*Bombycilla garrulus*	Sizewell Common		TM4762	2010	N/A*
Brambling	*Fringilla montifringilla*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell	Sizewell Goose Hill	TM4664	2011	N/A*
		Sizewell		TM4762	2009	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Brent Goose	*Branta bernicla*	Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM4762	2007	N/A*
		Sizewell		TM4664	1995	N/A*
Cetti's Warbler	*Cettia cetti*	Sizewell		TM472644	2015	140m north of Site boundary
		Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
		Sizewell		TM4762	2007	N/A*
Coal Tit	*Periparus ater*	Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
		Sizewell		TM4762	2007	N/A*
Common Bullfinch	*Pyrrhula pyrrhula*	Sizewell	Sizewell Broom Covert	TM4662	2011	N/A*
Common Crossbill	*Loxia curvirostra*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell	Sizewell Goose Hill	TM4664	2012	N/A*
		Sizewell	Sizewell Power Station	TM4763	2008	N/A*
		Sizewell	Sizewell Goose Hill (east)	TM4764	2008	N/A*
Common Cuckoo	*Cuculus canorus*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell	Sizewell Beach (north)	TM4764	2012	N/A*
		Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
		Sizewell		TM4762	2010	N/A*
Common Greenshank	*Tringa nebularia*	Sizewell	Sizewell Beach	TM4763	2011	N/A*
Common Gull	*Larus canus*	Sizewell		TM4763	2016	N/A*
Common Kestrel	*Falco tinnunculus*	Sizewell		TM4763	2015	N/A*
		Sizewell	Sizewell	TM475628	1997	210m east of the Site boundary

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
		Sizewell	Rackham Pits Wood, Sizewell	TM466637	1996	440m west of the Site boundary
		Leiston	St James Covert	TM466633	1996	360m west of the Site boundary
		Sizewell	Broom Covert	TM4664	1995	N/A*
		Sizewell Levels and Associated Areas	Sizewell Belts	TM466638	1995	450m west of the Site boundary
Common Kingfisher	*Alcedo atthis*	Sizewell	Sizewell South Marsh	TM4663	2011	N/A*
		Sizewell	Sizewell Goose Hill	TM4664	2011	N/A*
		Sizewell	Sizewell Goose Hill (east)	TM4764	2008	N/A*
Common Linnet	*Carduelis cannabina*	Sizewell	Sizewell Power Station	TM4763	2015	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
		Sizewell		TM4762	2007	N/A*
		Sizewell	Sizewell	TM4664	1999	N/A*
Common Nightingale	*Luscinia megarhynchos*	Sizewell	Sizewell Power Station	TM4763	2012	N/A*
		Sizewell	Sizewell South Marsh	TM4663	2011	N/A*
Common Redpoll	*Acanthis flammea*	Sizewell	Sizewell Power Station	TM4763	2011	N/A*
		Sizewell		TM4762	2009	N/A*
Common Redstart	*Phoenicurus phoenicurus*	Sizewell		TM4762	2009	N/A*
Common Scoter	*Melanitta nigra*	Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4762	2009	N/A*
		Sizewell		TM4664	1995	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Common Shelduck	*Tadorna tadorna*	Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
Common Starling	*Sturnus vulgaris*	Sizewell		TM4763	2015	N/A*
		Sizewell		TM474628	2014	110m east of the Site boundary
Common Swift	*Apus apus*	Sizewell Rigs		TM4763	2015	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell		TM4664	1995	N/A*
Common Tern	*Sterna hirundo*	Sizewell		TM4763	2015	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell Rigs		TM4763	2012	N/A*
		Sizewell		TM4762	2011	N/A*
		Sizewell	Sizewell outfall	TM478635	2010	340m east of the Site boundary
		Sizewell		TM4664	1995	N/A*
Cormorant	*Phalacrocorax carbo*	Sizewell		TM4764	2015	N/A*
Corn Bunting	*Emberiza calandra*	Sizewell	Sizewell	TM4664	1999	N/A*
Curlew Sandpiper	*Calidris ferruginea*	Sizewell		TM4762	2011	N/A*
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
Dartford Warbler	*Sylvia undata*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell		TM4664	1994	N/A*
Dunnock	*Prunella modularis*	Sizewell		TM4763	2016	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell		TM4762	2007	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Eurasian Hobby	*Falco subbuteo*	Sizewell		TM4763	2015	N/A*
		Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
		Sizewell	Sizewell Goose Hill	TM4664	2011	N/A*
		Sizewell		TM4762	2010	N/A*
Eurasian Marsh Harrier	*Circus aeruginosus*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell Levels and Associated Areas	Sizewell Belts	TM468635	1996	195m west of the Site boundary
		Sizewell		TM4664	1995	N/A*
		Sizewell Levels and Associated Areas	Sizewell Belts	TM467635	1995	290m west of the Site boundary
		Sizewell Levels and Associated Areas	Goose Hill	TM468645	1995	445m north-west of the Site boundary
Eurasian Siskin	*Spinus spinus*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4762	2010	N/A*
		Sizewell	Sizewell Goose Hill	TM4664	2007	N/A*
Eurasian Treecreeper	*Certhia familiaris*	Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
Eurasian Wryneck	*Jynx torquilla*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4664	1994	N/A*
European Bee-eater	*Merops apiaster*	Sizewell Common		TM4762	2007	N/A*
European Goldfinch	*Carduelis carduelis*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4762	2007	N/A*
		Sizewell		TM4762	2007	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
European Honey-buzzard	*Pernis apivorus*	Sizewell		TM4762	2008	N/A*
		Sizewell	Sizewell Power Station	TM4763	2008	N/A*
European Robin	*Erithacus rubecula*	Sizewell		TM4762	2007	N/A*
		Sizewell		TM4664	1994	N/A*
European Serin	*Serinus serinus*	Sizewell	Sizewell B site	TM4664	1994	N/A*
European Shag	*Phalacrocorax aristotelis*	Sizewell		TM4762	2008	N/A*
		Sizewell Rigs		TM4763	2008	N/A*
European Storm-petrel	*Hydrobates pelagicus*	Sizewell		TM4762	2007	N/A*
European Turtle Dove	*Streptopelia turtur*	Sizewell		TM4762	2007	N/A*
		Sizewell Levels and Associated Areas	Sizewell Belts	TM4663	1998	N/A*
Fieldfare	*Turdus pilaris*	Sizewell	Sizewell Beach	TM4763	2009	N/A*
Firecrest	*Regulus ignicapilla*	Sizewell		TM4762	2012	N/A*
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell	Dunes	TM4664	1994	N/A*
Fulmar	*Fulmarus glacialis*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Gannet	*Morus bassanus*	Sizewell		TM4763	2016	N/A*
Glaucus Gull	*Larus hyperboreus*	Sizewell Rigs		TM4763	2016	N/A*
Goldcrest	*Regulus regulus*	Sizewell	Sizewell South Marsh	TM4663	2011	N/A*
		Sizewell		TM4762	2007	N/A*
Great Black Backed Gull	*Larus marinus*	Sizewell		TM4763	2016	N/A*
		Sizewell		TM4764	2015	N/A*
Great Egret	*Ardea alba*	Sizewell		TM4762	2010	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
	Ardea alba	Sizewell		TM4762	2009	N/A*
Great Northern Diver	*Gavia immer*	Sizewell		TM4664	1994	N/A*
Great Spotted Woodpecker	*Dendrocopos major*	Sizewell	Sizewell South Marsh	TM4663	2012	N/A*
		Sizewell		TM4762	2007	N/A*
		Sizewell		TM4664	1995	N/A*
Guillemot	*Uria aalge*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Great Skua	*Stercorarius skua*	Sizewell		TM4763	2015	N/A*
Great Tit	*Parus major*	Sizewell		TM4762	2007	N/A*
Greater White-fronted Goose	*Anser albifrons*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4762	2007	N/A*
		Sizewell		TM4664	1995	N/A*
Green Sandpiper	*Tringa ochropus*	Sizewell		TM4664	1994	N/A*
Green Woodpecker	*Picus viridis*	Sizewell		TM4762	2007	N/A*
		Sizewell	Sizewell Belts	TM4664	1995	N/A*
		Sizewell		TM475629	1994	235m east of the Site boundary
Greenland Wheatear	*Oenanthe oenanthe subsp. leucorhoa*	Sizewell		TM4664	1995	N/A*
Grey Partridge	*Perdix perdix*	Sizewell	Sizewell Belts	TM4664	1995	N/A*
		Sizewell		TM4762	1994	N/A*
Grey Wagtail	*Motacilla cinerea*	Sizewell	Sizewell Power Station	TM4763	2015	N/A*
		Sizewell	Broom Covert	TM4664	1995	N/A*
Hawfinch	*Coccothraustes coccothraustes*	Sizewell		TM4664	1994	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Hen Harrier	*Circus cyaneus*	Sizewell	Sizewell Power Station	TM4763	2015	N/A*
		Minsmere	South Levels	TM469640	2015	Adjacent
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM4762	2009	N/A*
		Sizewell		TM4664	1994	N/A*
Herring Gull	*Larus argentatus*	Sizewell Rigs		TM4763	2016	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell		TM4664	1994	N/A*
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
Horned Lark	*Eremophila alpestris*	Sizewell		TM4664	1995	N/A*
House Martin	*Delichon urbicum*	Sizewell		TM4764	2015	N/A*
		Sizewell	Sizewell Power Station	TM4763	2008	N/A*
		Sizewell		TM4664	1995	N/A*
House Sparrow	*Passer domesticus*	Sizewell		TM4764	2015	N/A*
		Sizewell	Dunes	TM4664	1994	N/A*
Iceland Gull	*Larus glaucoides*	Sizewell Rigs		TM4763	2016	N/A*
Kittiwake	*Rissa tridactyla*	Sizewell		TM4763	2016	N/A*
		Sizewell Rigs		TM477630	2015	400m east of the Site boundary
		Sizewell		TM4764	2015	N/A*
Lapland Longspur	*Calcarius lapponicus*	Sizewell		TM4664	1995	N/A*
Leach's Storm-petrel	*Oceanodroma leucorhoa*	Sizewell	Sizewell Beach	TM4763	2012	N/A*
Lesser Black	*Larus fuscus*	Sizewell		TM4763	2016	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
backed Gull		Sizewell		TM4764	2015	N/A*
Lesser Redpoll	*Acanthis cabaret*	Sizewell		TM4763	2015	N/A*
		Sizewell		TM4762	2010	N/A*
Lesser Spotted Woodpecker	*Dendrocopos minor*	Sizewell		TM4664	1994	N/A*
Little Auk	*Alle Alle*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Little Egret	*Egretta garzetta*	Sizewell		TM4763	2015	N/A*
Little Gull	*Hydrocoloeus minutus*	Sizewell		TM4764	2015	N/A*
		Sizewell		TM4762	2012	N/A*
		Sizewell Rigs		TM4763	2012	N/A*
		Sizewell	Sizewell outfall	TM478635	2010	340m east of the Site boundary
		Sizewell		TM480633	1995	500m east of the Site boundary
		Sizewell		TM4664	1995	N/A*
Little Owl	*Athene noctua*	Sizewell		TM4762	2007	N/A*
		Sizewell	Sizewell Belts	TM468629	1996	220m west of the Site boundary
		Sizewell	Broom Covert	TM4664	1995	N/A*
		Sizewell		TM466631	1995	310m west of the Site boundary
Little Tern	*Sternula albifrons*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell Rigs		TM4763	2011	N/A*
		Sizewell	Sizewell	TM4664	1999	N/A*
Long-tailed Duck	*Clangula hyemalis*	Sizewell	Sizewell Beach	TM4763	2016	N/A*
		Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4762	2007	N/A*
Manx Shearwater	*Puffinus puffinus*	Sizewell	Sizewell Beach	TM4763	2011	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
		Sizewell		TM4762	2008	N/A*
		Sizewell		TM4664	1995	N/A*
Meadow pipit	*Anthus pratensis*	Sizewell		TM4763	2016	N/A*
Mediterranean Gull	*Larus melanocephalus*	Sizewell Rigs		TM4763	2016	N/A*
		Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4762	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Merlin	*Falco columbarius*	Sizewell		TM4762	2010	N/A*
		Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4764	1995	N/A*
		Sizewell		TM4664	1995	N/A*
Montagu's Harrier	*Circus pygargus*	Sizewell		TM4762	2012	N/A*
Nightingale	*Luscinia megarhynchos*	Sizewell		TM4763	2015	N/A*
Northern Goshawk	*Accipiter gentilis*	Sizewell	Sizewell	TM4762	1997	N/A*
		Sizewell		TM4664	1995	N/A*
		Sizewell Levels and Associated Areas	Goose Hill	TM470650	1995	N/A*
Northern Lapwing	*Vanellus vanellus*	Sizewell		TM474628	2014	110m east of the Site boundary
		Sizewell	Sizewell South Marsh	TM4663	2007	N/A*
Northern Wheatear	*Oenanthe oenanthe*	Sizewell		TM4762	2012	N/A*
		Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Pale-Breasted Brent Goose	*Branta bernicla subsp. hrota*	Sizewell	Sizewell Beach	TM4763	2011	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Peregrine Falcon	*Falco peregrinus*	Sizewell	Sizewell Power Station	TM4763	2016	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell	Sizewell Power Station	TM4763	2012	N/A*
		Sizewell		TM4762	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Pied Avocet	*Recurvirostra avosetta*	Sizewell	Sizewell Beach	TM4763	2011	N/A*
Pied Flycatcher	*Ficedula hypoleuca*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Pied Wagtail	*Motacilla alba*	Sizewell		TM4664	1995	N/A*
Purple Sandpiper	*Calidris maritima*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
Red-footed Falcon	*Falco vespertinus*	Sizewell		TM4762	2010	N/A*
Red-necked Phalarope	*Phalaropus lobatus*	Sizewell		TM4664	1995	N/A*
Red-throated Diver	*Gavia stellata*	Sizewell		TM4664	1995	N/A*
Redwing	*Turdus iliacus*	Sizewell	Sizewell Beach	TM4763	2012	N/A*
Reed Bunting	*Emberiza schoeniclus*	Sizewell		TM4763	2015	N/A*
		Sizewell	Sizewell South Marsh	TM4663	2011	N/A*
		Sizewell		TM4762	2007	N/A*
		Sizewell		TM4664	1995	N/A*
Ring Ouzel	*Turdus torquatus*	Sizewell	Sizewell Goose Hill	TM4664	2011	N/A*
		Sizewell		TM4762	2010	N/A*
Ringed Plover	*Charadrius hiaticula*	Sizewell		TM4763	2015	N/A*
Roseate Tern	*Sterna dougallii*	Sizewell Rigs		TM4763	2011	N/A*
		Sizewell		TM4664	1995	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Sabine's Gull	*Xema sabini*	Sizewell		TM4762	2011	N/A*
		Sizewell	Sizewell Beach	TM4763	2009	N/A*
Sanderling	*Calidris alba*	Sizewell	Sizewell Beach	TM4763	2012	N/A*
Sandwich Tern	*Sterna sandvicensis*	Sizewell		TM4763	2015	N/A*
		Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4762	2008	N/A*
		Sizewell		TM4664	1994	N/A*
Shelduck	*Tadorna tadorna*	Sizewell		TM4764	2015	N/A*
Short-eared Owl	*Asio flammeus*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM476641	1995	330m east of the Site boundary
Siskin	*Spinus spinus*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Skylark	*Alauda arvensis*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell		TM4764	2015	N/A*
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM4762	2007	N/A*
Snow Bunting	*Plectrophenax nivalis*	Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Song Thrush	*Turdus philomelos*	Sizewell	Sizewell South Marsh	TM4663	2011	N/A*
		Sizewell		TM4762	2007	N/A*
Sooty Shearwater	*Puffinus griseus*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4762	2008	N/A*
Spotted Flycatcher	*Muscicapa striata*	Sizewell		TM4763	2015	N/A*
		Sizewell		TM4762	2010	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
		Sizewell	Sizewell	TM4664	1999	N/A*
Stonechat	*Saxicola torquata*	Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4762	2008	N/A*
		Sizewell	Broom Covert	TM4664	1995	N/A*
Tawny Owl	*Strix aluco*	Sizewell		TM472644	2015	140m north of Site boundary
Tree Pipit	*Anthus trivialis*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell		TM4664	1994	N/A*
Tundra Swan	*Cygnus columbianus*	Sizewell	Sizewell Beach	TM4763	2012	N/A*
		Sizewell		TM4664	1995	N/A*
Velvet Scoter	*Melanitta fusca*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell		TM4762	2008	N/A*
		Sizewell		TM4664	1994	N/A*
Whimbrel	*Numenius phaeopus*	Sizewell	Sizewell Beach	TM4763	2016	N/A*
		Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM4762	2011	N/A*
		Sizewell		TM4664	1995	N/A*
Whinchat	*Saxicola rubetra*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
		Sizewell		TM4762	2011	N/A*
		Sizewell	Sizewell Beach	TM4763	2010	N/A*
		Sizewell		TM4664	1995	N/A*
White Wagtail	*Motacilla alba subsp. alba*	Sizewell	Sizewell Beach	TM4763	2011	N/A*
		Sizewell		TM4762	2010	N/A*
		Sizewell		TM4664	1995	N/A*

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Winter Wren	*Troglodytes troglodytes*	Sizewell		TM4762	2007	N/A*
Woodcock	*Scolopax rusticola*	Sizewell	Sizewell Beach	TM4763	2015	N/A*
Wood Lark	*Lullula arborea*	Sizewell		TM4762	2007	N/A*
		Sizewell	Sizewell Beach	TM4763	1999	N/A*
		Sizewell	Sizewell	TM4664	1999	N/A*
		Sizewell Common	Sizewell Common	TM4761	1999	N/A*
Yellow Wagtail	*Motacilla flava*	Sizewell	Sizewell Power Station	TM4763	2015	N/A*
		Sizewell		TM4762	2009	N/A*
Yellowhammer	*Emberiza citrinella*	Sizewell		TM4763	2015	N/A*
		Sizewell		TM4762	2007	N/A*
Yellow-legged Gull	*Larus cachinnans*	Sizewell Rigs		TM4763	2011	N/A*
		Sizewell		TM4762	2007	N/A*

* Insufficient information to identify the precise location provided in grid reference to enable the specific location of this record within the 500m ZoI to be determined. Desk study data with insufficient detail of location are included on a precautionary basis.

6. BATS

6.1.1 **Table 6.4.5** below summarises the desk study results for bats within the 500m ZoI of the Site.

Table 6.4.5. Desk study results for bats.

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
Bat spp.		Sizewell	Sizewell Wents	TM467628	2011	320m west of the Site boundary
Brown Long-eared Bat	*Plecotus auritus*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Leisler's Bat	*Nyctalus leisleri*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Myotis spp.	*Myotis* spp.	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Nathusius's Pipistrelle	*Pipistrellus nathusii*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Natterer's Bat	*Myotis nattereri*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Noctule	*Nyctalus noctula*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Common pipistrelle	*Pipistrellus pipistrellus*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
		Sizewell	Rosary Cottage	TM471629	1994	Immediately adjacent to Site boundary
Serotine	*Eptesicus serotinus*	Sizewell	Sizewell Wents	TM467628	2012	320m west of the Site boundary
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary
Barbastelle	*Barbastella barbastellus*	Sizewell	Sizewell Wents	TM467628	2013	320m west of the Site boundary

7. TERRESTRIAL MAMMALS

7.1.1 **Table 6.4.6** below summarises the desk study results for terrestrial mammals within the 200m ZoI of the Site.

Table 6.4.6. Desk study results for terrestrial mammals.

Species Common Name	Species Latin Name	Location	Site Detail	Grid Reference	Year	Approximate distance from Site boundary
European Otter	*Lutra lutra*	Sizewell		TM4705063504	2012	Within the Site boundary
		Sizewell Marshes	Sizewell Belts	TM4684963157	2005	100m west of the Site boundary
		Sizewell	Leiston ditch, Sizewell Belts	TM474645	1996	200m north of the Site boundary
European Water Vole	*Arvicola amphibius*	Sizewell Marshes	Sizewell Belts	TM4697462983	2005	30m west of the Site boundary
		Sizewell Marshes	Sizewell Belts	TM4667663258	2005	130m west of the Site boundary
		Sizewell Marshes	Sizewell Belts	TM4664763500	2005	190m west of the Site boundary
		Sizewell Marshes	Sizewell Belts	TM4684963157	2005	85m west of the Site boundary
		Sizewell Marshes	Sizewell Belts	TM4673263822	2005	200m west of the Site boundary
		Sizewell	Leiston ditch, Sizewell Belts	TM474645	1996	200m north of the Site boundary
Harvest Mouse	*Micromys minutus*	Sizewell	Sizewell Belts	TM468636	1996	200m west of Site boundary
Western European Hedgehog	*Erinaceus europaeus*	Sizewell		TM475628	1996	200m east of the Site boundary

ANNEX 6.5 ARCADIS REPORTS

Sizewell C NVC Survey 2014

Sizewell C Great Crested Newt Survey

Coronation Wood Bird Report

Red throated diver survey report

Sizewell C Ecology: Automated (SM2) bat detector monitoring report 2013/2014

Sizewell Radiotracking Report 2016

Sizewell C Otter Survey Report

ANNEX 6.6 WOOD GROUP AND OTHER SECONDARY DATA REPORTS

Sizewell Extended Phase 1 Habitat Survey Report 2008

Sizewell National Vegetation Classification Report 2008

Invertebrate Survey Report 2007-2010

Sizewell Great Crested Newt Survey Report 2007

Coronation Wood Reptile Survey Report 2012

Coronation Wood and Pillbox Field Reptile Survey Report 2015

Sizewell Power Station ISFI and Car Park Extension Reptile Survey Report 2008

Sizewell Reptile Survey Report 2008

Arable Reversion Areas, Breeding Bird Survey Report 2012

Black Redstart Breeding Bird Report 2011

Breeding Bird Survey Report 2010

Harrier and Bittern Survey Report 2011-2012

Sizewell First Interim Bird Report 2008

Sizewell Little Tern Report 2010

Sizewell Marsh Harrier Survey Report 2008

Seabird Report 2011-2012

Sizewell Bat Survey Report 2007

Sizewell Bat Survey Report 2008

Sizewell Bat Survey Report 2009

Sizewell Bat Survey Report 2010

Bat Survey Report 2011

Coronation Wood Bat Survey Report 2012

Otter Survey Report 2007-2010

Water Vole Survey Report 2007-2009

Sizewell Power Station ISFSI and Car Park Extension Ecological Scoping Report 2008

Sizewell Baseline Bryophyte Assessment 2015

Lichen Survey at Sizewell Power Station 2015

Sizewell Power Station ISFI and Car Park Extension Reptile Survey Report 2008

Galloper Wind Farm, Environmental Statement Chapter 5 Terrestrial Ecology 2014

Galloper Wind Farm, Bat and Reptile Monitoring Report 2015

ANNEX 6.7 DESIGNATED SITE CITATIONS