



# The Sizewell C Project

## 9.88 Estate Wide Management Plan for the EDF Energy Estate

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Applicable Regulation: Regulation 5(2)(q)  
PINS Reference Number: EN010012

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September 2021

Planning Act 2008  
Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009



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## 1 INTRODUCTION

1.1.1 This Estate Wide Management Plan ('EWMP') for the Estate has been prepared in respect of the application for a Development Consent Order ('DCO') to the Planning Inspectorate ('PINS') under the Planning Act 2008 ('the Application') for the proposed Sizewell C Project.

1.1.2 This plan is supported by **Figures** provided at the end of the document.

### 1.2 Purpose

1.2.1 The purpose of this EWMP is to provide an overarching framework of how the Estate will be managed to deliver the landscape vision set out within the Sizewell C DCO Application.

1.2.2 The implementation of, and compliance with, the EWMP by SZC Co. is secured pursuant to Requirement 5C of the DCO.



## 2 THE ESTATE

### 2.1 Existing Site Context

2.1.1 As illustrated on **Figure 1**, the Estate is located on the Suffolk coast, approximately halfway between Felixstowe and Lowestoft. It is approximately 14km south of Southwold, 7km north of Aldeburgh and 2km east of Leiston.

2.1.1 The Estate is approximately 733ha and includes the operational Sizewell B power station site, Upper and Lower Abbey Farms, and Aldhurst Farm as shown on **Figure 2**. The “Estate” is made up of land owned by SZC Co. or EDF Nuclear Generation Limited (ENGL) who are currently both part of the EDF Group. It comprises a variety of land uses including arable farmland, areas of coniferous, deciduous and wet woodland, grazing marshes and reed beds, Sandlings heathland and grassland. The coastal frontage comprises the coastal defence features adjacent to Sizewell B and a shingle beach and dune features.

2.1.2 The Estate and much of the surrounding landscape is of high environmental value. It is located partly within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) and the Suffolk Heritage Coast. The Sizewell Marshes Site of Special Scientific Interest (SSSI) is wholly in the Estate and parts of the Minsmere and Walberswick Marshes and Heaths SSSI also lie within the Estate boundary. **Figure 2** shows the extent of landscape and seascape designations within the Estate, while **Figure 3** shows the extent of non-statutory and statutory biodiversity designations.

2.1.3 The Estate is currently managed under a series of voluntary agreements, drawing on expertise from Suffolk Wildlife Trust and other specialists, in accordance with a series of management plans covering specific areas and habitat types within the Estate. These plans are already cognisant of the Sizewell C proposals and include early preparatory works and mitigation measures to support the Application. Further information on the existing management regimes is provided in **Section 3**.

### 2.2 Estate Vision

2.2.1 SZC Co. and ENGL have agreed an ambitious vision for the future of the Estate to mitigate the effects of the new power station and enhance the character, ecology and amenity of the local landscape. The vision for the Estate is set out in **Chapter 8** of the **Design and Access Statement (DAS)** [[REP5-073](#)] and includes the replacement of existing arable farmland and plantation woodland with semi-natural landscape habitat types that are



characteristic of the local Sandlings and will support a wider range of ecological communities.

2.2.2 The Vision is described as follows:

*[The vision for the EDF Energy Estate is to establish] the Suffolk Coast and Heaths AONB landscape in microcosm by creating a mosaic of some of its most valued landscapes such as extensive Suffolk Sandlings grasslands, areas of farmland, large scale forestry, coastal dunes and shingle ridges and the open sea as well as an appropriate landscape setting for the existing and proposed power station structures, that reflects the way that the existing Sizewell A and Sizewell B structures behave. The design also seeks to reflect a subtle transition from the organised farmland landscape to the west to the more open, expansive and natural coastline and adjacent seascape (DAS, paragraph 8.2.3).*

2.2.3 The Vision seeks to deliver a landscape that is resilient to the effects of a changing climate; can be managed in a sustainable, non-intensive manner; and can be adapted over time to respond to changing circumstances, such as climate change and other natural, social and economic pressures.

2.2.4 The vision is illustrated on the **Composite Operational Landscape Masterplan** (shown in **Figure 4**). The landscape proposals are informed by a detailed understanding of the Estate and its surrounding context. They have been developed in consultation with local stakeholders and local authorities and with reference to guidance published, and within the framework of the Sizewell C Design Principles set out in **Chapter 5** of the **MDS DAS** [\[REP5-070\]](#).

## 2.3 Delivering the Vision

2.3.1 Sizewell C will be accommodated on the Sizewell C main power station platform, located on land immediately north of the existing Sizewell B power station. Beyond the main power station platform, a larger area of land (including land not within the Estate) is required for temporary developments to support construction of Sizewell C. This includes the accommodation campus and green rail route. The areas of the Estate which are required for the temporary construction works are within the Main Development Site (MDS) which is shown on **Figure 2**.

2.3.2 Following construction of Sizewell C, the temporary elements would be removed and the land within the Estate which had been used for this would

be repurposed to deliver new landscapes and habitats as identified within the Estate vision, **illustrative Landscape Masterplan** [REP5-012] and the **oLEMP** [REP1-010]. This would not simply restore the land within the DCO order limits which has been temporarily used to its current landscape of arable farmland and plantations but seek to create a mosaic of locally rare and threatened characteristic Sandlings and coastal habitats. This will significantly enhance the ecological, landscape and amenity value of the area, complementing the landscapes to the north at the RSPB Minsmere Reserve and National Trusts Dunwich Heath and south of the Sizewell Gap at The Walks and Aldringham Common.

2.3.3 SZC Co. is responsible for the delivery of the vision set out in section 8.2 of the **DAS**, with Requirement 14 securing a landscape and ecology scheme for the main development site which will set out the detailed design of the works and the Landscape and Ecology Management Plan. Some of these areas are already being actively managed in accordance with the **Composite Operational Landscape Masterplan** (shown in **Figure 4**) demonstrating commitment to the Estate vision. This includes advanced planting and habitat creation schemes designed to mitigate the effects of the new power station and trial studies aimed at developing robust methodologies for habitat creation.

2.3.4 In relation to the land within the Estate which sits outside the DCO boundary, SZC Co. must maintain the land and implement the necessary landscaping measures to deliver the vision as shown on the Composite Operational Landscape Masterplan (shown in Figure 4). This will be delivered through private agreement with ENGL. The principle has been agreed and will be documented as part of the wider commercial transaction between the parties.

### 3 CONSTRUCTION MANAGEMENT REGIMES

#### 3.1 Estate land within the Order Limits

3.1.1 During the construction period the landscape of the MDS will be managed in accordance with the following plans and documents secured under the DCO (in addition to other off-site provision (e.g. the fen meadow plan)):

- the **Code of Construction Practice** [[REP5-078](#)] secured by Requirement 2;
- Ecological Monitoring and Mitigation Plan secured by Requirement 4;
- Site Clearance Plans secured by Requirement 6;
- Landscape and ecology Scheme (Chapter 5, Chapter 8 and Table A.1 of the **DAS** [[REP5-070](#)]) and the Approved Plans (Schedule 7), such as the **Main Development Site Landscape retention plan** [[REP5-016](#)], secured by Requirement 14;
- the **Associated Development Design Principles** [[REP3-023](#)] (for rail works) secured by Requirement 18;
- the marsh harrier implementation plan (pursuant to Requirement 14C); and
- the wet woodland plan (pursuant to Requirement 14B).

#### 3.2 Estate land outside the Order Limits

3.2.1 The Estate outside the MDS will (where necessary to deliver the vision) continue to be managed by ENGL and SZC Co. in accordance with the existing management regimes, specifically:

- The Sizewell Estate – management plans to ensure that the land is managed in the most sustainable and effective manner given the constraints presented by the operational requirements of Sizewell B, the new build programme for Sizewell C and third party objectives; there are accurate and current records of baseline information of the Estate and frameworks for producing specific land management objectives, policies and plans.
- Aldhurst Farm – an Aldhurst Farm Ecology and Landscape Management Plan has been approved by ESC under an extant



planning permission, and will be updated in the future as required (first updated expected in 2021). This plan presents the management objectives for the establishment phase of habitat creation (up to 10 years from commencement) and defines a number of attributes, targets and management actions (including monitoring and verification measures) to ensure they are delivered. The management objectives set out within the Aldhurst Farm ELMP are aligned to the vision as set out in **Chapter 8** of the **DAS** and aim to deliver an enhanced recreational, ecological and landscape habitat mosaic which reflects the distinctive land-use, topography and vegetation typologies that are characteristic of the Suffolk Coast and Heaths AONB. These management objectives will continue to be implemented throughout the construction and operation of Sizewell C.

- Reptile mitigation – the **Reptile Mitigation Strategy** (Appendix A) sets out commitments to prepare and manage a number of areas across the Estate as reptile receptor areas which will be used to receive reptiles when they are translocated from the footprint of the power station and the temporary construction areas in advance of construction. The areas include former arable fields which have already been converted to acid grassland and heathland and are now being optimised ahead of the translocation exercise.

**3.2.2** The spatial extent of these existing management regimes is set out in **Figure 5** and these regimes have been developed collaboratively between ENGL and SZC Co. in cognisance and anticipation of the Sizewell C Project. As above, SZC Co. will ensure their continuation and management going forward through private agreement with ENGL where relevant.

## 4 POST-CONSTRUCTION (OPERATIONAL PHASE) MANAGEMENT REGIMES

### 4.1 Estate land within the main development site

4.1.1 Following completion of Sizewell C, the areas of the MDS which were used temporarily will be restored in phases in accordance with the landscape and ecology scheme to be approved by ESC under Requirement 14 of the **DCO**. This scheme will set out details of restoration landscape and ecology works, and a landscape and ecology management plan (LEMP). The design should be developed having regard to **Chapter 5** and **Chapter 8** of the **DAS** and the management arrangements must be in general accordance with the **oLEMP [REP1-010]**.

4.1.2 The LEMP will provide clear objectives and principles for the establishment and long-term management of the proposed landscape and ecological mitigation. It will include details of new habitats to be created and relevant ongoing monitoring and management arrangements. SZC Co. will discuss the LEMP with the Environment Working Group before submitting it to ESC.

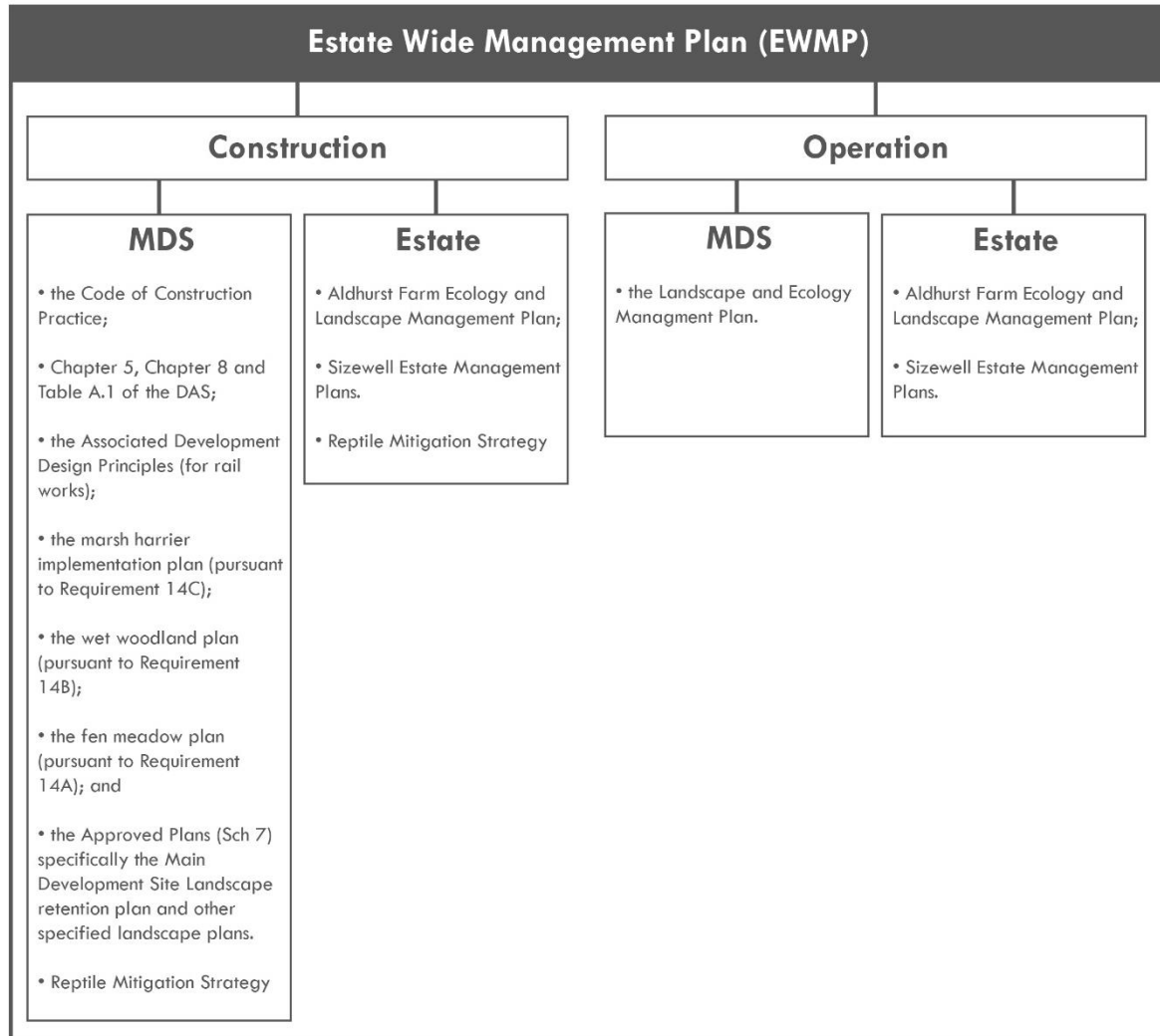
### 4.2 Estate land outside the main development site

4.2.1 During operation of the Sizewell C Project, the land within the Estate outside the MDS will continue to be managed as set out in **section 3.2**. This commitment is made through Requirement 5C of the DCO and secures with confidence that which is currently the subject of voluntary agreements.

## 5 MANAGEMENT FRAMEWORK SUMMARY

5.1.1 **Figure 6** shows the hierarchy of the EWMP in relation existing and forthcoming management plans.

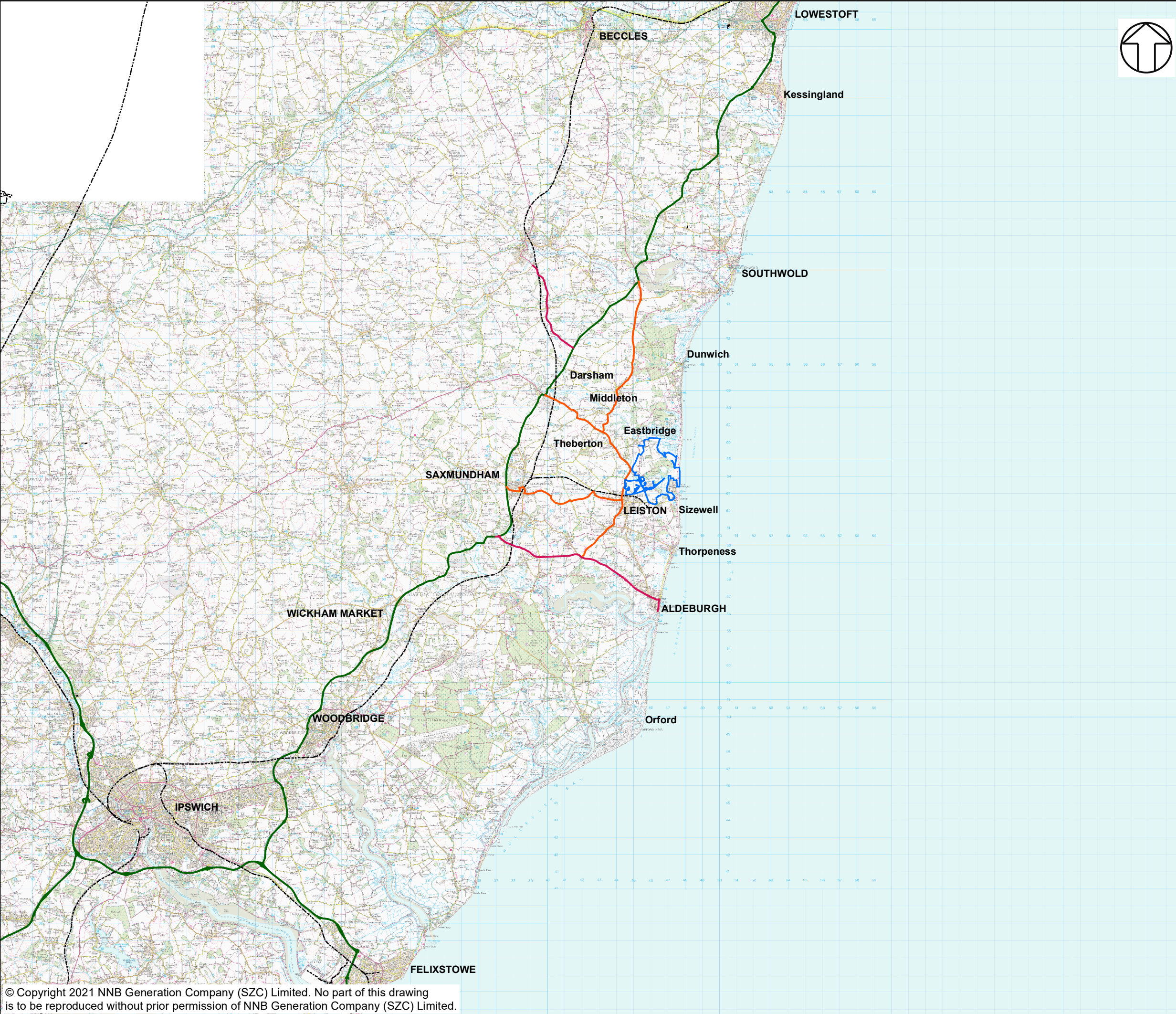
Figure 6: Management Plan Framework










## 6 FIGURES 1 – 5





NOTES

KEY

-  ESTATE BOUNDARY
-  PRIMARY ROAD
-  A ROAD
-  B ROAD
-  RAILWAY LINE

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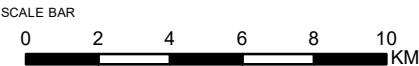


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ESTATE WIDE MANAGEMENT PLAN

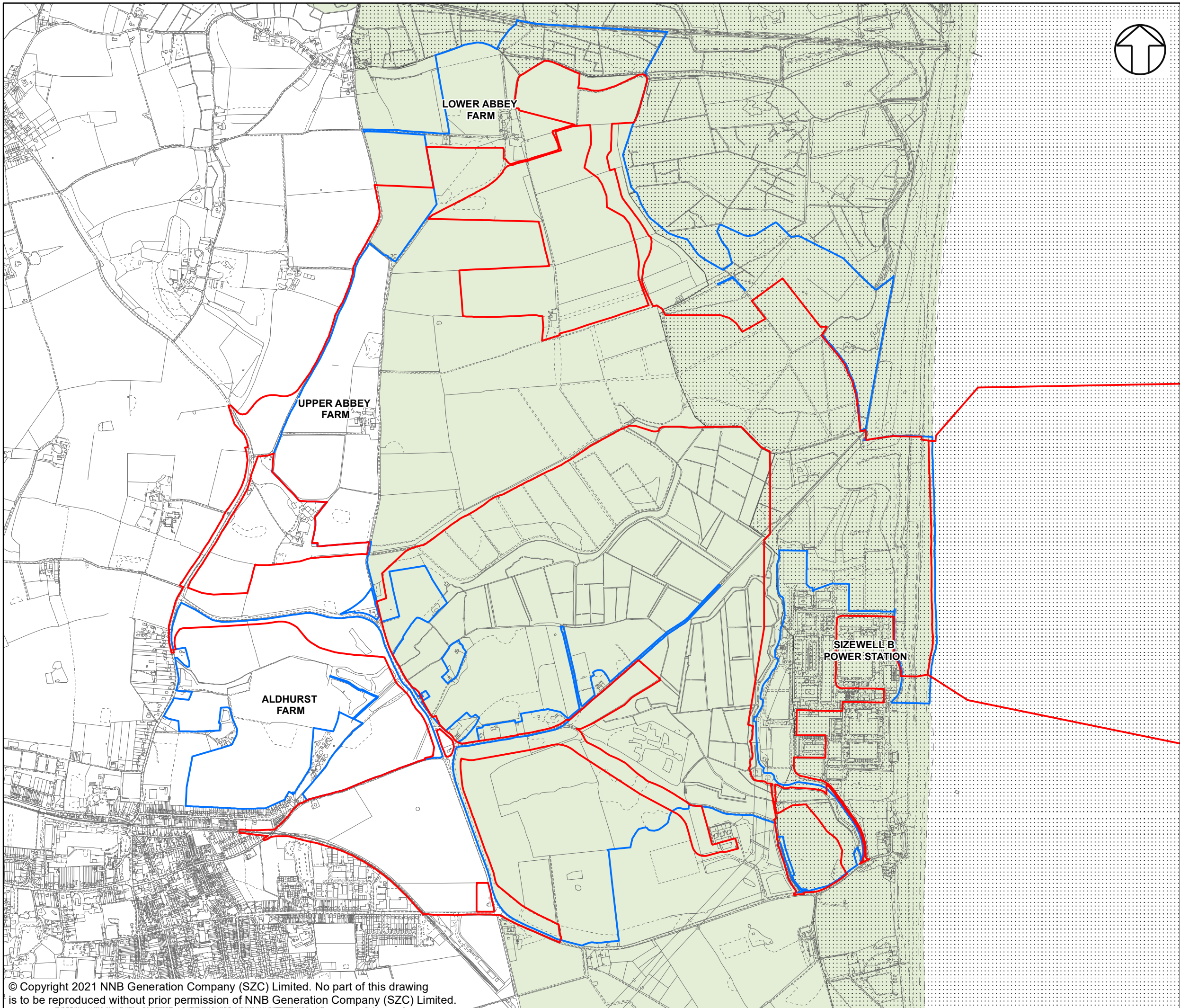
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LOCATION PLAN

DRAWING NO:  
FIGURE 1

DATE: JULY 2021	DRAWN: S.M.	SCALE : 1:210,000 @A3	REV: 01
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NOTES

KEY

- ESTATE BOUNDARY
- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- HERITAGE COAST
- AREA OF OUTSTANDING NATURAL BEAUTY (AONB)

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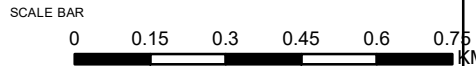


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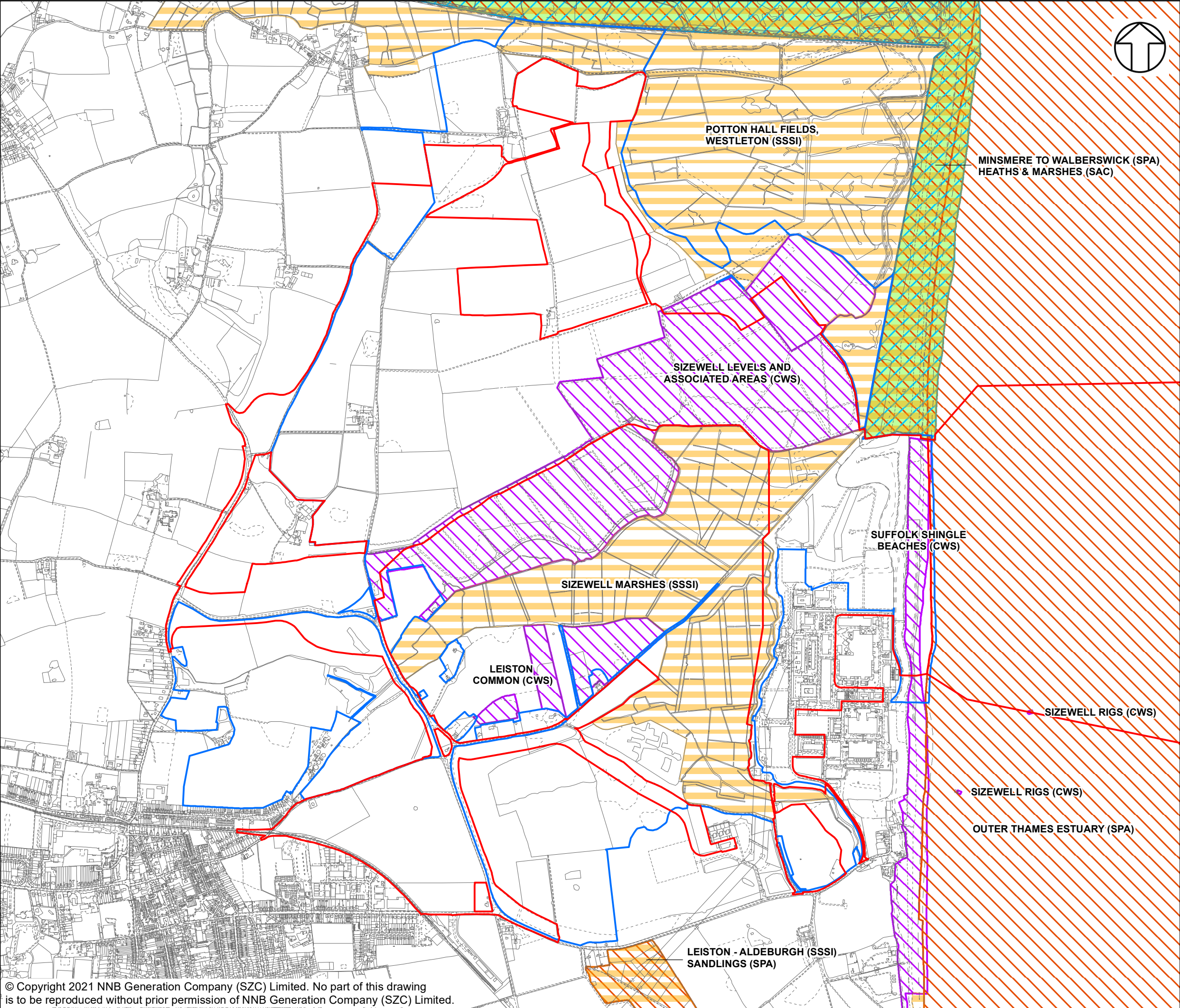
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THE ESTATE, INCLUDING LANDSCAPE  
AND SEASCAPE DESIGNATIONS

**DRAWING NO:**  
FIGURE 2

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JULY 2021	S.M.	1:15,000 @A3	01







- NOTES**
- KEY**
- ESTATE BOUNDARY
  - SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
  - SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
  - SPECIAL PROTECTION AREA (SPA)
  - COUNTY WILDLIFE SITE
  - RAMSAR
  - SPECIAL AREA OF CONSERVATION (SAC)

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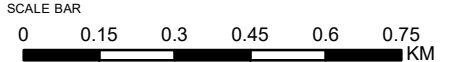


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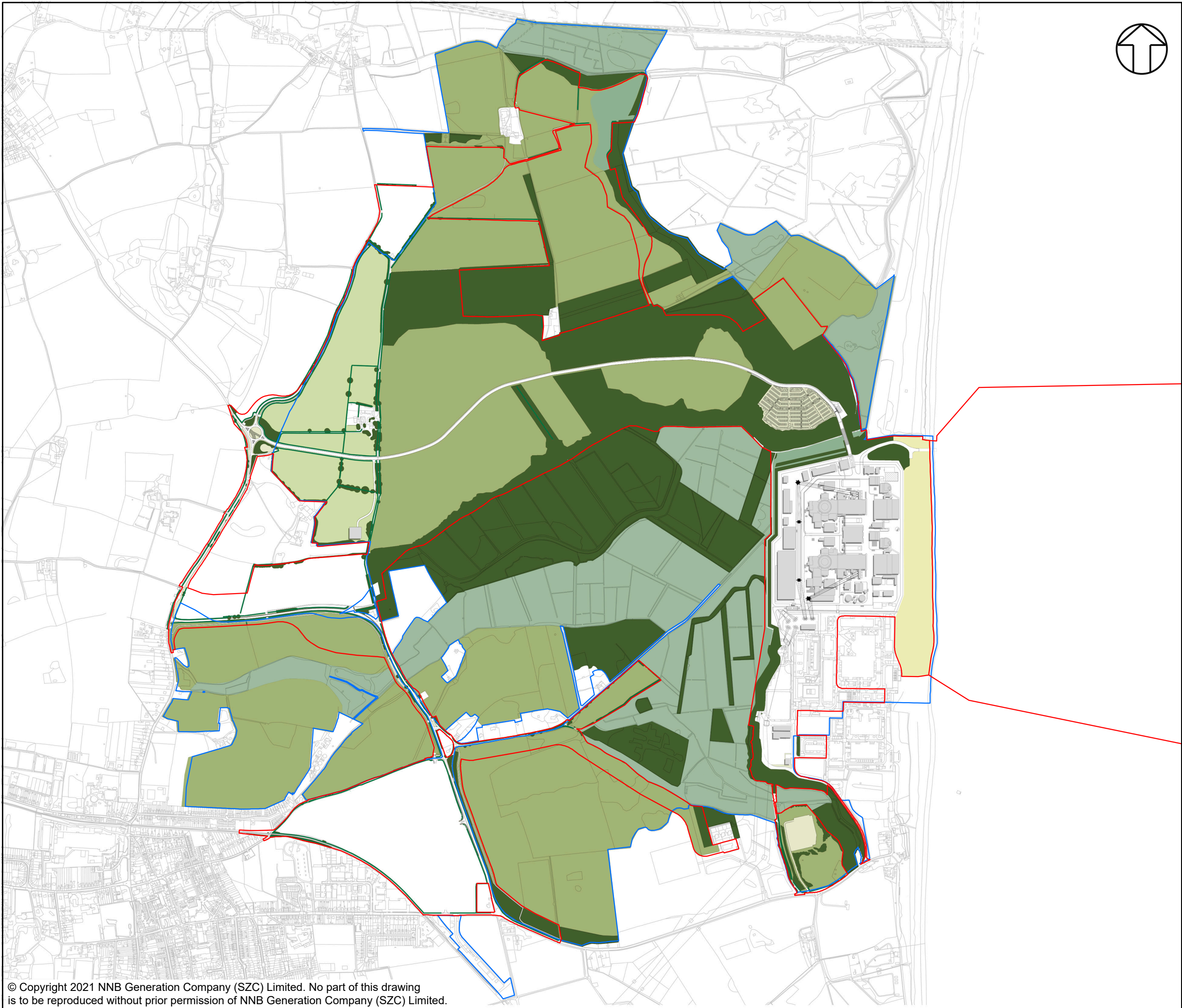
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BIODIVERSITY DESIGNATIONS

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FIGURE 3

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NOTES

KEY

- ESTATE BOUNDARY
- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- MIXED WOODLAND
- DRY SANDLING GRASSLAND
- SEMI-IMPROVED GRASSLAND
- AMENITY LANDSCAPE
- WETLAND HABITAT
- VEGETATED DUNES AND SHINGLE BEACH

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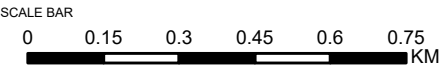


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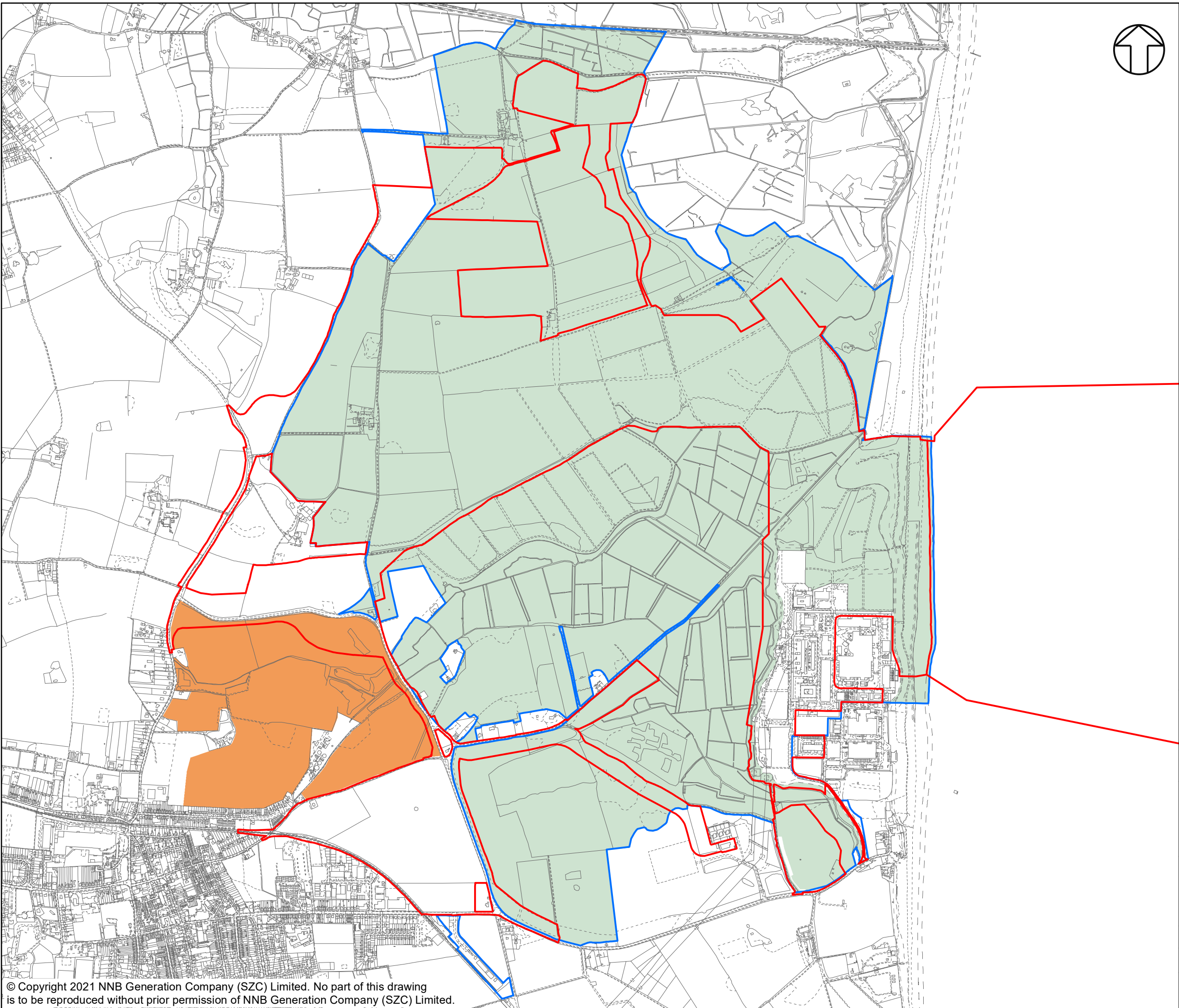
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COMPOSITE OPERATIONAL  
LANDSCAPE MASTERPLAN (INDICATIVE)

DRAWING NO:  
FIGURE 4

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NOTES

KEY

- ESTATE BOUNDARY
- ALDHURST FARM ECOLOGY AND LANDSCAPE MANAGEMENT PLAN (ALDHURST FARM ELM)
- SIZEWELL ESTATE MANAGEMENT PLANS

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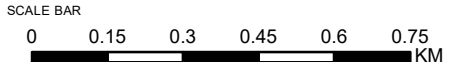


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EXISTING MANAGEMENT REGIMES

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FIGURE 5

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## APPENDIX A: REPTILE MITIGATION STRATEGY

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# SIZEWELL C MAIN DEVELOPMENT SITE REPTILE MITIGATION STRATEGY

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## 1. Introduction and Background

### 1.1 Introduction

1.1.1 SZC Co. is proposing to build and operate a new nuclear power station on the Suffolk coast, known as Sizewell C power station (hereafter referred to as Sizewell C) located to the north of the existing Sizewell B power station.

1.1.2 This Reptile Mitigation Strategy, dated August 2021, outlines the key approaches to mitigating potential impacts to reptiles on the main development site and supersedes, but makes reference to content within, the version submitted as part of the Development Consent Order (DCO) application (included as **Volume 2, Chapter 14, Appendix 14C2A** of the **ES [APP-252]**). The proposed mitigation solution has been devised based on the survey data collected to date and the impacts outlined in **Volume 2, Chapter 14** of the **Sizewell C Project Environmental Statement (ES) [AS-033]**. This document should be read alongside the following documents:

- **Volume 2, Chapter 14, Appendix 14A6** of the **ES [APP-235]**, which presents the reptile baseline for the main development site;
- **Volume 2, Chapter 14** of the **ES [AS-033]** which assessed the potential impacts on reptiles and outlines the requirements for mitigation and the residual effects;
- **Volume 2, Chapter 14, Appendix 14C2B** of the **ES (Reptile Method Statement) [APP-252]** which sets out the key approaches to mitigating potential impacts to the reptile populations present within or adjacent to the Sizewell C main development site during construction; and,
- **Reptile Survey Report 2020 [AS-036]** which provided an update to the reptile baseline and reviewed earlier population assessments.

1.1.3 This Reptile Mitigation Strategy will be updated prior to construction and prior to any reptile translocation and the updated strategy will need to be agreed with the Ecology Working Group (EWG). The EWG has a variety of roles in this strategy in approving future variations to the approach and these are set out where relevant below.

### 1.2 Baseline and Impact Assessment

1.2.1 Four species of reptiles are known to be present within the main development site, namely: adder (*Vipera berus*), slow-worm (*Anguis fragilis*), grass snake

(*Natrix helvetica*<sup>1</sup>) and common lizard (*Zootoca vivipara*). **Appendix 1** summarises the legislative framework for these four species of reptiles.

- 1.2.2 Reptile surveys were undertaken by Wood Group between 2007 and 2012 and by Arcadis in 2014 to 2016 and 2020. The results of the surveys from 2007 to 2016 are presented within **Volume 2, Chapter 14, Appendix 14A6** of the **ES** [APP-235] which also includes survey and assessment of prey availability in identified donor and receptor sites. Population sizes were initially estimated using results from the 2015-2016 surveys (see **Volume 2, Chapter 14, Appendix 14A, Annex 14C2B** of the **ES** [APP-252]) and this process was updated following the 2020 surveys (see **Reptile Survey Report 2020** [AS-036] which also includes a summary of the 2007 to 2016 data).
- 1.2.3 **Volume 2, Chapter 14** of the **ES** [AS-033] assessed the potential impacts on reptiles and outlines the requirements for mitigation and the residual effects. The results of the 2020 updated surveys supported the assessment in the **ES** which was based on the earlier survey data.
- 1.2.4 In summary, the main development site and its zone of influence was considered to constitute a “Key Reptile Site” as defined by Froglife criteria (Ref 1.1), as it fulfils all of the first four criteria; that is: supports three or more reptile species; supports two snake species (grass snake and adder); supports an exceptional population of one species (adder); and supports an assemblage of species scoring at least 4.
- 1.2.5 The reptile assemblage as a whole (rather than the four individual species) was therefore considered to be of regional importance under CIEEM guidelines (Ref 1.2) and of medium importance under the EIA-specific assessment methodology (see **Volume 1, Chapter 6, Appendix 6J** for further details [APP-171]).
- 1.2.6 Please refer to **Appendix A** for a series of diagrams that highlight the location of all reptiles records (within a heat map) collected since 2007. The figures also highlight the location of the reptile donor sites and corresponding receptor sites (these are discussed further within **Section 2**).
- 1.2.7 Based on survey records and an assessment of habitat suitability, reptile presence across the main development site can be separated into distinct areas that are affected by the proposals. These are described within **Table 1-1**.

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<sup>1</sup> The grass snake in the UK was reclassified as *Natrix helvetica helvetica* rather than *Natrix natrix helvetica* (Kindler *et al.* (2017)).

**Table 1-1: Areas with reptile presence affected by the proposals.**

Site name and Total Area affected within RLB (approximate ha)	Details
Sizewell C Main Platform including the SSSI Triangle (38ha)	<p>This area comprises predominately semi-improved grassland with rabbit and deer grazed turf supporting <i>Cladonia</i> lichen communities in places which is sub-optimal for reptiles due to its lack of structural diversity. Two strips of broadleaved plantation woodland run north to south through the grassland and frequently flood in winter and there is a block of young conifer plantation at the southern extent, which are also largely sub-optimal for reptiles except for the edge habitats. There is a large bund running along the east and north edge which contains east and south facing slopes, brash piles and scattered and dense scrub with diverse vegetation structure valuable to reptiles. The whole area is accessed by Sizewell C workers and is exposed to minor disturbance.</p> <p>The SSSI triangle lies to the north-west of the above separated by the Sizewell Drain. This is part of the of Sizewell Marshes SSSI and comprises a mosaic of wet and dry reedbed, open water and wet woodland dissected by red deer tracks. Vegetation structure is diverse throughout this section, which is not accessible to the public. This section floods heavily particularly during winter however is suitable for reptiles and provides important foraging habitat.</p> <p>It supports populations of adder (high), grass snake (low), common lizard (moderate) and slow worms (high).</p>
Goose Hill Complex (52ha)	<p>This area comprises areas of dense coniferous plantation woodland that is generally unsuitable for reptiles. Nevertheless, woodland edge habitats in this area comprise a variety of suitable and unsuitable reptile habitats. The value of this area for reptiles lies within the open sandy woodland rides that cross Goose Hill, which contain grassland and scrub vegetation, dead wood/brash piles and a band of native scrub planting along the southern edge of the woodland (adjacent to the north of the SSSI Triangle).</p> <p>Goose Hill is bordered by arable fields to the north dissected by hedgerows and lines of trees. The fields are largely unsuitable for reptiles however the linear features provide suitable habitat for reptiles, particularly those moving through the site.</p> <p>This area has been found to support populations of adder (high), grass snake (low), common lizard (moderate) and slow worms (high).</p>
Retsom's Field (3.2ha)	<p>This field comprises grazed pasture that is largely unsuitable for reptiles. However, small patches of gorse and heather to the north-west provide habitat structure, and the field is the subject of a mitigation strategy for natterjack toad (<i>Epidalea calamita</i>) [REP5-053]. The removal of any natterjack toads from that area of the proposed water management zone in this area will also be used to capture any reptiles present in this footprint. Surveys have not been undertaken within this area for reptiles however presence (albeit in low numbers based on patch quality), is assumed.</p>

Site name and Total Area affected within RLB (approximate ha)	Details
Black Walks and Fields to South of Sandpytle Plantation (6.2ha)	This area comprises rabbit grazed semi-improved acid grassland with short turf, the majority of which is sub-optimal for reptiles. There is a band of scattered scrub, woodland blocks, scattered trees and bracken through the centre of Black Walks which provide habitat structure that is suitable for reptiles, and the margins of Black Walks and Sandpytle Plantation provide further reptile habitat. It supports populations of adder (low), grass snake (moderate), common lizard (low) and slow worms (moderate).
Northern Arable Fields, 'Campus' Area, Land North of Lovers Lane and Ashwood (125ha)	The vast majority of this area comprises arable fields which are largely unsuitable for reptiles however the hedgerows provide opportunities for reptiles, particularly those moving through the site. There are also two old borrow pits which have scrubbed over providing islands of suitable reptile habitat in this area. Populations of grass snake (moderate) and slow worm (moderate) have been recorded in this area.
Land Associated with National Grid Cabling (11ha)	This area comprises compartments of semi-improved grassland some with patches of Bracken, Bramble scrub and scattered trees. The turf is short throughout and is grazed heavily by rabbits. The edges of the longer vegetation provide the most suitable habitat for reptiles within this area. This area supports populations of adder (low), grass snake (low), common lizard (low) and slow worms (low).
Hedgerows associated with the Southern Arable Fields (29ha)	<p>These arable fields are sub-optimal for reptiles as the hedgerows are species poor, lack diverse structure and there are only narrow field margins. There is an area of grassland scrub mosaic along the north boundary, which is suitable for reptiles, providing good vegetation structure from rabbit grazed bare ground to dense scrub and scattered trees.</p> <p>Surveys have not been undertaken by Sizewell C co within this area for reptiles however presence is assumed, particularly within the northern strip.</p>
Total area: 264ha (with 32ha of optimal habitat)	

## 1.3 Mitigation Strategy Overview

### 1.3.1 In summary, the proposed strategy involves:

- preparation and management of receptor sites to receive translocated reptiles (see **Section 2**);
- the identification of donor sites (as described above and discussed further in **Section 2**) and capture/exclusion of reptiles from the construction footprint to avoid incidental mortality (see **Section 3**); and

- pre-, during- and post-construction monitoring of reptile populations (see **Section 4**).

1.3.2 **Table 1-2** outlines the proposed construction and operational phases in relation to reptile mitigation and incorporates habitat improvement measures as part of the mitigation measures.

**Table 1-2: Construction and Operational Phases in relation to reptile mitigation**

Phase	Specific action	Timing
<b>Preliminary works</b> - activities proposed prior to a DCO being granted, to expedite the delivery of the works.	Selection, preparation and management of potential receptor sites.	2012-present
	Reptile surveys and suitability monitoring at receptor sites.	2014-present
	Commencement of reptile translocation.	TBC
<b>Construction phase</b> - construction will commence with establishment of the site and preparations for the main earthworks, focussing on securing and clearing the site and provision of early access routes.  As the main construction phases conclude, temporary facilities would start to be removed and the temporary construction site areas restored to the habitats defined within the <b>Outline Landscape and Ecological Management Plan (OLEMP)</b> <a href="#">[REP1-010]</a>	Completion of reptile translocation and destructive searches to provide reptile-free construction footprint.	Y1
	On-going monitoring programme as per the <b>Terrestrial Ecological Monitoring and Mitigation Plan (TEMMP)</b> <a href="#">[REP5-088]</a> .	Y1-12
<b>Operational phase</b>	On-going monitoring programme at receptor sites as per the <b>TEMMP</b> <a href="#">[REP5-088]</a> .	Y13 – Y17



## 2. Receptor Sites

### 2.1 Overview

2.1.1 With all species translocations there is the risk of underestimating the number of reptiles that would need to be captured and translocated from the construction footprint. This has been addressed by SZC Co. by ensuring that the translocation is underpinned by sufficiently large receptor areas of high-quality habitat. The approach to the mitigation solution presented within this strategy has been to ensure an increase in area of better-quality habitat and that these habitats are well connected to the wider landscape. Suitable habitat creation was considered fundamental to this, and the following five receptor sites have been created in advance of impact:

- Kenton Hills;
- St James Covert;
- Studio Field complex (which includes Broom Covert, Studio Field, Lovers, Halfway, and land west of Studio Fields);
- Great Mount Walk/Low 40 Acres; and
- Aldhurst Farm.

2.1.2 The locations of the proposed receptor sites (see **Figure 14.C2A.10** [APP-255]; and **Appendix A**) have been selected to maximise connectivity with the wider landscape using existing ecological features and corridors (see **Figure 14.C2A.10** [APP-255]) and to maximise the establishment and spread of other biodiversity including reptile prey species. Photographs of the receptor sites from 2015 are presented in **Volume 2, Chapter 14, Appendix 14C2A** of the **ES** [APP-252].

2.1.3 These receptor sites provide a total area of approximately 170.2ha. Approximately 46.9ha of this is regarded as optimal reptile habitat (as noted in **Table 1.1** it is estimated that 32ha of optimal reptile habitat will be lost to facilitate the proposals) and includes areas with varied vegetation structure provided by scattered scrub, heather and reedbed along with retained hedgerows and ditches and purpose-built brash piles, refugia and hibernacula. These habitat patches are interspersed with areas of sub-optimal but valuable reptile habitat such as rough grassland and woodland patches. It is also envisaged that the total area of optimal habitat will increase further as habitats (such as those within Kenton Hills) are subject to further

ongoing management to improve vegetation structure prior to them receiving reptiles (see **Section 4**).

2.1.4 To maximise the suitability of the receptor sites (and therefore the success of this mitigation strategy), a range of habitat and lifecycle features have been provided based on the advice provided within the Reptile Habitat Management Handbook (Ref. 1.3). The general principles followed during receptor site creation (that will also be followed for any further habitat creation within the receptor sites) are presented in **Appendix C**.

2.1.5 It is not intended to translocate all species of reptiles to all receptor sites as different reptile species have different habitat requirements and pressures; given the proximity of Aldhurst Farm to Leiston and the possibility of opening up parts of this area to the public, this site would not be used for adders due to the potential conflict with members of the public.

## 2.2 Kenton Hills

2.2.1 The Kenton Hills receptor site (see Figure 14C2A.13 [\[APP-255\]](#)) comprises approximately 3.9 ha of cleared conifer woodland divided into four sub-compartments; the western-most of these was clear-felled (timber removed and brash mulched) in 2008, and the remaining three sub-compartments were clear-felled and mulched in 2011. South-facing windrows were created to provide shelter and hibernation sites running full length of each compartment a long with four dedicated hibernation structures built per compartment.

2.2.2 Reptile exclusion fencing was erected around all four sub-compartments in October 2011 and will remain in place until commencement of the translocation.

2.2.3 The wider Kenton Hills already supports good quality reptile habitat, and the habitat modifications and creation of large brash piles/hibernacula were undertaken (2008 and 2011) to boost its carrying capacity significantly. Subsequent management has included management of bracken and scrub to maintain the receptor area in an optimal condition. Once the reptile exclusion fencing has been removed, there will be excellent connectivity with the adjacent wetland habitat of Sizewell Marshes SSSI.

2.2.4 The receptor site is considered suitable to receive all four species and despite the fencing being in place, it has been colonised by adder (good population size; see **Reptile Survey Report 2020** [\[AS-036\]](#) for all population size class' quoted in this section), grass snake (low), common lizard (good) and slow worms (good).

- 2.2.5 The Kenton Hills receptor site will provide a receptor for displaced reptiles currently using the southern sections of the Northern Arable Fields donor site. In addition to this, approximately 25% of adders (1 in 4 captured) from the Goose Hill and Kenton Hills Complex donor site will be released here. The location of all donor and receptor sites are illustrated on **Figures 1 to 4** in **Appendix A**.

## 2.3 St James Covert

- 2.3.1 The receptor area in St James Covert (see **Figure 14C2A.14** [[APP-255](#)]) was clear-felled (timber removed and brash mulched) in 2010. Five south-facing windrows were created to provide shelter and hibernation sites, with dedicated hibernation structures built. A limited amount of shrub planting has been undertaken to bulk up and link existing areas of scrub, with adjacent large brash piles to provide cover. Trees to the southern edges of both compartments between the receptor site and Broom Covert were also scalloped at edges and thinned to allow more light into receptor area.
- 2.3.2 Reptile exclusion fencing was erected in 2011 to create two (a large and small) compartments totalling 1.4 ha. Exclusion fencing will remain in place until commencement of the translocation.
- 2.3.3 The receptor site is suitable to receive all four reptile species and despite the reptile exclusion fencing being in place, it was recorded to have been colonised by adder (low), grass snake (low), common lizard (low) and slow worms (low to good) in 2020 [[AS-036](#)].
- 2.3.4 Approximately 25% of adders (1 in 4 captured) from the Goosehill and Kenton Hills Complex donor site will be released at St James Covert. The location of all donor and receptor sites are illustrated on **Figures 1 to 4** in **Appendix A**.

## 2.4 Studio Field Complex

- 2.4.1 The Studio Field complex comprises Studio Field (see **Figure 14C2A.16** [[APP 255](#)]), Land west of Studio Field, Lovers Field and Half Way Field (see **Figure 14C2A.16** [[APP-255](#)]) and Broom Covert (see **Figure 14C2A.15** [[APP-255](#)]) totalling an area of approximately 50.7 ha.
- 2.4.2 The field complex was former agricultural land situated to the south of Sandy Lane. Studio Field was ploughed, cultivated and sown with grass seed mix in Autumn 2012. The aim was to encourage plants to tiller and thus aid the creation of a denser sward. Heather brushings were applied (and half were rolled) in Winter 2014/2015 to increase the diversity of heathland plants within the grassland sward. These were applied in 'patches' to add diversity

by providing seeds of heather and other heathland/acid grassland plants and invertebrates to colonise the wider area.

- 2.4.3 Gorse Covert comprises flower rich lowland acid grassland and gorse scrub mosaic. Heavy stock grazing ceased within the field in 2016 and the grassland has recovered well from grazing pressure.
- 2.4.4 All other areas (except the dense tussocky grassland that exists in the southern portion of Lovers) were sown in the winter of 2014/2015 with an acid grassland seed mix comprising Sheep's fescue (19%); Slender creeping red fescue (25%); Chewing's fescue (17%); Hard fescue (17%); Crested dog's tail (15%); Sweet Vernal grass (2%); and Common bent (5%).
- 2.4.5 Part of Lovers Field has also previously been used for trials to establish if spreading peat would lower soil pH, aiding the creation of heath and acid grassland (2014/2015). In these trials, the higher peat application plot was unsuccessful, and the central part of Lovers Field now supports an area of bare ground with sparse vegetation (last observed in May 2021). The peat trials also involved the creation of a 2m-high south-facing earth bank providing perfect basking opportunities for reptiles and the southern part of Lovers supports grassland with a dense thatch and large tussocks, providing cover for foraging reptiles and small mammals (last observed in May 2021).
- 2.4.6 In addition to the above, south-facing basking banks, hay piles and extensive hibernacula features have also been provided throughout these fields. Scalloped landscape planting was installed along the west and southern boundaries to increase the barrier between the field and Lover's Lane (i.e. discourage reptiles from moving onto road).
- 2.4.7 The area is unfenced and is considered to be well connected to the wider landscape including Sizewell Marshes SSSI and its wetland habitat features, via St James Covert, and the optimal reptile habitat within the heathland and forestry glades at Aldringham Walks.
- 2.4.8 The field complex has been colonised by adder (low), grass snake (low), common lizard (low) and slow worms (low to good), and it is deemed suitable to receive all four species.
- 2.4.9 The Studio Field Complex will provide a receptor for all reptiles captured from the Sizewell C Platform donor sites. Individuals will also be temporarily displaced into this receptor site from the Land Associated with National Grid Cabling donor site, which will be subjected to the installation of a cable from Sandy Lane to the Greater Gabbard substation and an attenuation basin field north-east of Sandy Lane. The proposed donor site(s) are illustrated on **Figures 1 to 4 in Appendix A.**

## 2.5 Great Mount Walk

2.5.1 Great Mount Walk comprises approximately 47.2ha of former arable land. Extensive reptile mitigation features (hibernation structures, hay bales and brash piles) have been installed across this site.

2.5.2 Please note that the initial layout for Great Mount Walk, as illustrated on **Figure 14C2A.17** [\[APP-255\]](#), has since been amended to include an extensive flood mitigation area and wet woodland habitat creation to the north (see **Figure 2.2.14** of **Volume 2, Chapter 2** of the **ES** [\[AS-190\]](#)). This additional area will comprise a mosaic of grassland, open water, reed bed and woodland habitats that will supplement the habitats already created and will enhance the area further for reptiles.

2.5.3 Great Mount Walk has good connectivity with the extensive wetland habitats at Minsmere to the north and east, together with the established acid grassland and scrub mosaic at Black Walks and Retsom's Field. Previous survey work within the arable margins indicates that grass snakes use the margins of the arable fields as corridors between wetland foraging habitat and hibernation sites.

2.5.4 The receptor site has been colonised by adder (low), grass snake (low), common lizard (good) and slow worms (good), and it is therefore deemed suitable to receive all four species.

2.5.5 Great Mount Walk will provide a receptor site for approximately 50% of adders (2 in 4 captured) and all other reptiles captured from the Goose Hill and Kenton Hills Complex donor site. It is also proposed that this site provides a receptor for displaced reptiles currently using the northern sections of the Northern Arable Fields and Black Walks and Fields to South of Sandpytle donor sites. In addition to this, any adder captured from the Northern Arable Fields, 'Campus' Area, Land North of Lovers Lane and Ashwood donor site will be released here. The location of all donor and receptor sites are illustrated on **Figures 1 to 4** in **Appendix A**.

## 2.6 Aldhurst Farm

2.6.1 Aldhurst Farm (see **Figure 14C2A.18** [\[APP-255\]](#)) comprised, up until 2014, approximately 67ha of arable farmland, immediately west of the main development site. Between 2014 and 2016, 6ha of reedbed and 2km of ditch and open water (in the form of four lagoons) were created. In addition, grassland was established on 60ha of adjacent valley sides and is currently managed by failing-off the arable weeds and spreading heather brashings to encourage heathland species to colonise the open grassland. These extensive habitats were supplemented with reptile hibernacula and refugia.

2.6.2 The receptor site has been colonised by adder (low population), grass snake (low) and common lizard (low to good). Adder must not be translocated to this receptor but it is deemed suitable to receive the other three reptile species.

2.6.3 Aldhurst Farm will provide a receptor for displaced reptiles currently using the hedgerows to the north of Lover's Lane donor site. In addition to this, any grass snake, common lizard or slow worm captured from the Northern Arable Fields, 'Campus' Area, Land North of Lovers Lane and Ashwood donor site will be released here. The location of all donor and receptor sites are illustrated on Appendix A: Figures.

## 2.7 Habitat Suitability Assessment

2.7.1 Before any receptor site receives reptiles, a final habitat suitability assessment of each site will be undertaken, and the results used to highlight any necessary habitat management/modification requirements to maintain or improve suitability. The same assessment process will also be used to monitor the receptor sites on a regular basis during-, and post-construction. These survey requirements are detailed within the **TEMMP** [[REP5-088](#)].

2.7.2 A checklist has been developed to facilitate this assessment (see **Reptile Mitigation Strategy** [[APP-252](#)]), taking on board the principles outlined in Brady & Phillips [Ref. 1.4] and using professional judgement, that identifies three possible suitability grades of receptor site as follows:

- moderate – the minimum requirements to allow reptiles to survive; the majority of the lifecycle features are provided but vegetation structure requires considerable improvement, and prey availability may be limited;
- good – the standard for use as a receptor site; all of the life cycle features required for reptiles are present, but the site may benefit from some further management (and/or additional time) to further improve its suitability;
- exceptional – all life cycle features are present and vegetation structure is considered to be optimal for reptiles. The receptor sites have an abundance of well-established and well-designed life cycle features present and are considered resilient to change under their adopted management regime.

2.7.3 Habitat suitability assessments were carried out for the three most advanced receptor sites (Kenton Hills, St James and Studio Field) based on the



information available to November 2015; see **Reptile Mitigation Strategy [APP-252]**. The assessment indicated that three receptor sites are either already at 'Good' status or should reach this level prior to any translocation programme (i.e. for those receptor sites that do not yet reach 'Good' status, management actions are in place to address this).

- 2.7.4 The habitat suitability assessment process will be repeated following the completion of habitat creation works and then annually, as part of ongoing monitoring, so that any changes or improvements in habitat suitability can be assessed. The approach will be that no receptor sites would be used until they have achieved at least good status unless agreed in advance with the EWG.

## 2.8 Carrying Capacity

- 2.8.1 There is a relationship between the suitability grade of a receptor site and its reptile carrying capacity in that a receptor site of exceptional suitability will support a greater number of reptiles than a site of moderate suitability grade of the same extent.

- 2.8.2 Based on patch quality and quantity alone, the receptor sites identified in **Section 2.2 to 2.6** provide sufficient habitat to support the reptile populations that currently reside within the donor sites (i.e. regardless of the number of individuals). However, the **Reptile Mitigation Strategy [APP-252]** estimated the total number of individual reptiles that will be translocated from the donor sites and the carrying capacity of the receptor sites. These estimations were further refined within **Reptile Survey Report 2020 [AS-036]** based on further survey information and assessment.

- 2.8.3 **Table 2-1** compares the theoretical carrying capacity for optimal habitat within the receptor sites (combined), with estimated number of reptiles to be moved, and indicates the proportion of this theoretical carrying capacity that this estimated figure represents.

**Table 2-1: Receptor sites optimal habitat estimated carrying capacity (estimated reptile numbers rounded to nearest 10).**

Species	Max estimated reptile numbers for translocation	Max estimated available carrying capacity of receptor sites (based on 32 ha of suitable habitat)	Ratio of donor site to receptor carrying capacity
Adder	499	711	1:1.43
Grass Snake	471	628	1:1.33

Species	Max estimated reptile numbers for translocation	Max estimated available carrying capacity of receptor sites (based on 32 ha of suitable habitat)	Ratio of donor site to receptor carrying capacity
Common Lizard	1500	2052	1:1.37
Slow Worm	4410	5918	1:1.34

- 2.8.4 The number of reptiles being translocated into the various receptor sites shall be recorded during the capture and exclusion exercise. This shall be used to monitor when a receptor site is potentially approaching carrying capacity and inform if intervention (such as greater habitat provision) is necessary as per **Section 2.7**. It should be noted that final carrying capacity estimates will be made, in advance of translocation, but following completion of habitat management/creation within these receptors. The final carry capacity of each receptor site shall be agreed within the EWG.

### 3. Reptile Capture and Exclusion

#### 3.1 Overview

- 3.1.1 The reptile translocation shall follow broad principles as given in HGBI (Ref 1.5), and McClean (Ref. 1.6) and as set out below.
- 3.1.2 To mitigate for the risk of death or injury to reptiles during the construction period, a combination of exclusion: using reptile proof fencing (RPF – some of which will remain in place for the duration of construction), drift fencing (used to compartmentalise the capture and translocation areas), capture and translocation of reptiles and habitat manipulation will be undertaken. The location where these methods are proposed (i.e. the donor sites) are highlighted within **Figures 1 to 4 in Appendix A**; collectively this area is hereafter referred to as the 'mitigation area'.
- 3.1.3 A phased approach will be adopted during the translocation exercise. The phasing plan will be developed in conjunction with the SZC Co. construction team and detailed within the final version of the Reptile Method Statement which will be developed in advance of the translocation and agreed with the EWG.
- 3.1.4 The **Reptile Method Statement** [\[APP-252\]](#) provides for tool box talk requirements and precautionary working methods which includes methods of vegetation clearance. This method statement will be further developed in line with the construction phasing plan and all works that have the potential to impact reptiles would be undertaken following the final version; such works would also be overseen by an Ecological Clerk of Works (ECoW).

#### 3.2 Capture and translocation

- 3.2.1 Reptile translocation shall only take place during the period when reptiles are above ground and active (March to late October), and during suitable weather conditions as per Froglife criteria (Ref 1.1).
- 3.2.2 Translocation will comprise compartmentalising areas to be cleared of reptiles to allow the sequential phasing of the clearance operation, so capture efforts may be focussed upon particular areas or features of the donor site (especially those areas with the highest populations and/or where the reptiles would be hardest to capture). This approach will be guided by the development of the construction phasing plan and defined within the final **Reptile Method Statement**, to be agreed with the EWG as noted above.
- 3.2.3 A number of techniques will be used to capture the reptiles from the donor sites, including:

- Laying artificial cover object (ACO's; also referred to as 'reptiles tins' or 'artificial refugia'). ACO's will comprise a variety of materials at different sizes and will be distributed within donor sites at a density of at least 100/ha of suitable habitat (for very small sites this density may be increased appropriately with a justification provided).
- Checking natural refugia and hibernacula features that are present within donor sites.
- Walking pre-defined transects (which will be set out in the final **Reptile Method Statement**, to be agreed with the EWG) and attempting to hand-catch any observed reptiles (e.g. basking reptiles).

3.2.4 Any reptiles caught will be placed in a suitable container and moved to the relevant receptor site, as defined above.

3.2.5 In non-linear habitats refugia shall be placed at a density of at least 100/ha (for very small sites this density will be increased appropriately with a justification provided). In linear habitats of less than 10m in width (e.g. hedgerows, road verges etc.) refugia shall be placed at a frequency of at least one every 10m of suitable habitat. The default will be a 50 : 50 ratio of corrugated iron to felt ACOs. Where varying from this standard a justification will be provided, based on the habitat type and target species concerned (and agreed with the EWG). All refugia will be number marked and their location accurately recorded to an accuracy of <5m where terrain/vegetation allows. Once placed, artificial refugia will be left to settle for 14 days prior to conducting the first survey. Note that ACO density will be measured based on the total area of suitable habitat but that habitat manipulation, see below, will be used within any large areas of suitable habitat to focus the capture effort

3.2.6 Each morning or afternoon visit will be counted as a separate capture visit with a possible two capture visits per day. The number of visits necessary will be determined by the pattern of reptile captures but will continue until there have been at least seven consecutive visits with no animals caught or sighted during suitable weather conditions. Where possible, depletion modelling techniques will be used to inform this process.

### 3.3 Habitat Manipulation

3.3.1 Habitat manipulation will be used as the sole method for the displacement of reptiles and in conjunction with capture and translocation techniques to improve efficiency. Details of how and where habitat manipulation will be



used, along with a justification at each location, will be detailed within the final Reptile Method Statement to be approved by the EWG.

3.3.2 In broad terms, habitat manipulation comprises the careful removal of vegetation followed by hand and destructive searches, to render habitats unsuitable for reptiles by removing potential resting places. It can be used alongside other capture techniques to produce 'edges' within habitat that are attractive to reptiles and encourage use of deployed ACO's, and similarly, careful strimming can create increasingly small islands of vegetation over time to increase capture rates/focus capture effort.

3.3.3 Conversely, it is proposed as a technique to displace reptiles in areas where: (a) the perceived suitability of habitats for reptiles is poor and/or such small numbers of reptiles are anticipated to be present that the necessary effort associated with capture and translocation methods is considered disproportionate; and (b) where capture and translocation is not possible due to health and safety reasons and in the interest of maintaining access, such as suitable habitats situated adjacent to active roads. All areas where this approach is used will be agreed with the EWG.

3.3.4 For example, habitat manipulation will be used:

- Within Goosehill and Kenton Hills Complex, to clear large areas of suboptimal coniferous plantation woodland and displace individuals into suitable habitats that are then subjected to capture and translocation.
- The small areas of suitable habitat associated with the hedgerows to the north of Lover's Lane, to displace individuals into Aldhurst Farm.

## 3.4 Vegetation Removal

3.4.1 Vegetation will be removed in two phases:

- Phase 1: Vegetation within the mitigation area will be cut to 150mm above ground level and removed from the works footprint, in conjunction with a hand search (see **Section 3.5** for details). The area must then be left undisturbed for at least 24 hours during suitable weather conditions. Clearance must be undertaken by hand tools or flail mounted attachments that do not require heavy machinery to be tracked over vegetation. Low-pressure vehicles may be used dependent on the ground conditions and at the discretion of a supervising ECoW.

- Phase 2: Where vegetation within the mitigation area remains dense, this shall be cleared to ground level, with arisings removed. The area must again be left undisturbed for at least 24 hours during suitable weather conditions. Phase 2 clearance shall commence on completion of a capture and translocation exercise or in line with habitat manipulation in target areas.

3.4.2 Following at least 24 hours from the second phase of vegetation removal, soil stripping of the mitigation area will commence with arisings removed from the works footprint. Where necessary, this will be undertaken in conjunction with a secondary hand search and destructive search (see below for details).

3.4.3 The working area will be maintained free of vegetation for the duration of the works.

### 3.5 Hand and Destructive Searches

3.5.1 Such activities must only be carried out in the presence of an ECoW. Hand searches comprise the dismantling and removal of potential refuges by hand. In areas subject to translocation, hand searches will be undertaken throughout the process to aid captures. For habitat manipulation, this will be undertaken during the first phase of vegetation removal and again prior to soil stripping to ensure any potential refugia obscured by vegetation is identified and removed.

3.5.2 Destructive searches comprise the careful stripping of potential refuge areas or habitat piles that could not be easily dismantled by hand (i.e. larger/heavier/partially buried/labour intensive refugia). Where possible, stripping of these areas will first be undertaken with use of non-mechanical hand tools, followed by machinery for any remaining areas. Where translocation is proposed, destructive searches must not be conducted until the translocation effort is deemed complete.

### 3.6 Data Record

3.6.1 To maximise the efficiency of data recording and facilitate the supply of data in a digital format, the use of hand-held data loggers (with an in-built camera, OS-base map and GIS capability) shall be used. The following information must be recorded: Species; Sex; Age class; Location of capture (which part of the donor site) and release (which receptor site); Time of capture; Date of capture; Weather conditions and Health status (an option for any other information would also be provided).

### 3.7 Welfare

- 3.7.1 Welfare measures must be implemented to minimise stress to the animals and/or the risk of injury or death. Translocated animals must be kept in captivity only for as long as is necessary and must be transported in a suitable container (such as cloth bags and/or plastic vivaria) between the donor habitats and the reptile receptor areas. Adders and grass snakes must be transported separately from the other species to avoid the risk of predation and reduce stress.
- 3.7.2 The staff responsible for undertaking the mitigation measures, and specifically the capture and translocation exercise, must be experienced reptile handlers. They may be assisted at times by trainees who would undergo training on the identification of reptiles, and safe/appropriate handling techniques, particularly for venomous snakes.

### 3.8 Non-Target Species

- 3.8.1 Vegetation clearance used as part of the Reptile Mitigation Strategy must consider other ecological constraints, for example nesting birds and hedgehogs. Any other small mammals and amphibians captured during the reptile translocation process would also be moved to the reptile receptor sites. Vegetation clearance will be undertaken in accordance with Table 6.1 of the **Part C** of the **Code of Construction Practice** (Doc Ref. 8.11(D)).
- 3.8.2 The area of Sizewell Marshes SSSI which would be subject to construction works is difficult to access to trap reptiles, and health and safety issues will be addressed given the presence of deep water and silt. This area also supports water voles and nesting birds, and any programme to clear reptiles from this area will be aligned to the programmes for water vole and vegetation clearance (with their own seasonal restrictions). Likewise, natterjack toads present within Retsom's Field and any programme to clear reptiles from this area will be aligned with the mitigation strategy and/or licences for this species.

## 4. Monitoring and Management

### 4.1 Monitoring effectiveness of receptor sites

4.1.1 Monitoring is proposed to ensure that habitat suitability of the receptor sites is maintained or enhanced, and that they support viable populations of reptiles equal to or greater than those estimated within the donor sites.

4.1.2 The monitoring strategy for reptiles is set out within the **TEMMP** [\[REP5-088\]](#) and may be developed further upon completion of the final version of the Reptile Method Statement and following results of monitoring surveys and as approved by the EWG.

4.1.3 The receptor sites shall be monitored on a regular basis during the pre-construction period to confirm that agreed reptile habitat features have been appropriately created, to assess how the establishment of grassland and landscape planting is proceeding, and to confirm that appropriate management is occurring. This would allow any problems to be quickly addressed. Similar long-term monitoring would occur during and after the translocation process as set out in the **TEMMP** [\[REP5-088\]](#).

4.1.4 The qualitative assessment described in **Section 2.7** shall be used to determine when an individual receptor site is suitable to be included in the translocation programme.

### 4.2 Management of receptor sites

4.2.1 It is important that the receptor sites continue to provide suitable conditions to support the populations of reptiles that have been translocated from the donor areas, for the duration of the proposed ten-year construction programme and beyond. Each of the receptor sites will be actively managed to maximise their reptile population carrying capacity. This will be implemented through the production of a management plan for each receptor site to cover the construction period. This management plan will be produced in consultation with site managers who would be responsible for the longer-term management of these sites. The management plan shall be agreed with the EWG and would be a working document, flexible and adaptable. Following completion of construction work, the management plan would be reviewed and revised in accordance with the wider landscape aspirations for the EDF Energy estate as set out in the **Estate Wide Management Plan** (Doc Ref. 9.88), submitted to examination at Deadline 7.



a) Integration with wider landscape and ecology strategy

- 4.2.2 A key element of the Sizewell C Project is the **outline Landscape and Ecology Management Plan (oLEMP)** [REP1-010], detailing how the main development site will be developed and managed following the construction of the Sizewell C to fully integrate the habitats with the habitats of the wider EDF Energy estate as set out in the **Estate Wide Management Plan** (Doc Ref. 9.88), submitted to examination at Deadline 7.
- 4.2.3 Part of the long-term aspiration is to recreate habitats characteristic of the Suffolk Sandlings, which are of particular value to reptiles, and to ensure that linkages exist across the whole of the EDF Energy estate to optimise movement and minimise the effects of fragmentation. Following the construction of Sizewell C, there would be a much larger (and better-linked) area of habitat suitable for reptiles than is currently the case, enabling the expansion and dispersal of the existing reptile populations. The **oLEMP** [REP1-010] seeks to provide clear objectives and general principles for the establishment and longer-term management of the landscape, and ecological mitigation proposals identified for the area within the application within the wider context of the EDF Energy estate. The aim of the **oLEMP** [REP1-010] is to complement the existing management aims of the site to ensure newly created post-construction habitats are integrated within the wider estate and the surrounding landscape.
- 4.2.4 The habitat creation proposals for receptor sites are aligned with the long-term aspirations of the **oLEMP** [REP1-010]. Whilst sufficient area has been included in the mitigation strategy to accommodate those reptiles that would need to be translocated from the construction area, it is anticipated that the longer-term proposals for the main development site, including the extensive creation of 'Sandlings' acid grassland and additional areas of scrub and trees on the temporary construction area, would facilitate a significant long term expansion of the populations of reptile species at Sizewell. Furthermore, the receptor sites that have been selected would serve to enhance connections for reptiles to designated sites to the north and south of the main development site, as well as to wider landscape features. This is in accordance with "Making Space for Nature" (Ref. 1.7) and the ability of reptiles to move within the wider landscape would be enhanced. These benefits have already begun to be realised in the short to medium term through the early establishment of reptile receptor sites prior to the construction of Sizewell C.
- 4.2.5 Figure 4 of the EWMP (Doc Ref. 9.88) provides a current overview of the long-term landscape strategy post construction.

b) Seasonality and timing of management activities

4.2.6 Management activities often involve large pieces of machinery and can cause harm or injury to reptiles and other species, such as ground-nesting birds. Therefore, management activities on the receptor sites will only be undertaken at an appropriate time of year to avoid causing incidental harm or injury. An indicative reptile management calendar is outlined in **Table 4-1** (adapted from Edgar *et al.* (Ref. 1.1)).

**Table 4-1: Reptile habitat management calendar.**

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mowing or flailing of vegetation			Avoid cutting vegetation from mid-Feb until Aug to avoid nesting birds.									
Scrub/tree coppicing or cutting												
Stump treatment												
Bracken cutting												
Bracken or bramble spot spraying												
Birch spot spraying												
Maintenance of reptile habitat features such as brash piles and hay bales												
Tree and shrub planting												
	Most effective and least damaging time of year for both reptiles and ground nesting birds											
	Work may be less effective and requires more care to avoid disturbance											

c) Short-term site-specific management actions of receptor sites

4.2.7 This section provides a summary of the works already completed to establish the receptor sites, followed by any outstanding actions to be completed for individual receptor sites to ensure that each contain the range of habitat features required to support reptiles, and therefore meet 'Good' habitat suitability.

4.2.8 Although individual receptor sites are discussed, it is not the intention to consider each in isolation. St James Covert, Broom Covert, Studio Field, land west of Studio, Halfway and Lovers, form a contiguous block of well-connected habitat. These areas are considered as a single extensive tract of reptile habitat with management actions aimed at linking existing reptile-suitable features, creating corridors of dense cover to enable reptiles to move across the landscape and populate the whole area.

4.2.9 **Table 4-2** summarises the ongoing receptor site management actions for each of the below sites, which will be maintained.

**Table 4-2: Receptor site management actions.**

Site and Area (ha)	Management
Kenton Hills (3.9)	Management of scrub and open ground to create and maintain habitat mosaic, with areas within fencing partially flailed to maintain a diverse mosaic of low grassy vegetation with irregularly spaced clumps of shrubs and low birch. Twice-yearly strimming 1m around edge on both sides of the reptile fencing and regular checking for any damage to the fencing.
St James Covert (1.4)	Management of scrub and open ground to create and maintain a rich mosaic of open grassland, native woodland and scrub. Twice-yearly strimming 1m around edge on both sides of the reptile fencing and regular checking for any damage to the fencing.  Coppicing (down to 100cm) within compartment of any trees from the redundant woodland areas (then coppiced on a 5-7 year rotation).  Trees to the southern edges of both compartments between receptor site and Broom Covert have been scalloped at edges and thinned to allow more light into receptor area. Maintenance to continue as required.
Studio Complex (50.7)	To maintain a diversity of sward height, a short cut of the existing tracks (to a width of ~5m) around the site to maintain areas of short sward, before skylarks start to nest. Scalloped landscape planting along the west and southern boundaries to increase the barrier between the field and Lover's Lane to discourage reptiles from moving onto road.  Management of a number of small wetland features to create habitat suitable for grass snakes. Manage large piles of composting vegetation to act as egg-laying sites for grass snakes.  Within Broom Covert, management (including shrub planting) also required to link up existing gorse patches and provide connectivity between Studio complex and St. James Covert/Sizewell Marshes.  Create 3-4 large piles of composting vegetation (such as old hay bales) to act as egg laying sites for grass snakes.
Great Mount Walk (47.2)	Sown to create short-sward acid grassland as part of dual-purpose marsh harrier/reptile mitigation area.  Hibernacula, brash piles and composting hay piles required to create features for reptiles on southern and eastern edges and to connect existing

Site and Area (ha)	Management
	features within fields with existing boundary hedgerows and woodland habitats.
Aldhurst Farm (67)	Continuation of grassland management by flailing-off the arable weeds.
Total area: 170.2	

d) Monitoring on-going management of receptor sites

4.2.10 During construction of Sizewell C, management objectives and actions required to maintain good habitat suitability of each receptor site would be agreed with the EWG on an annual basis.

4.2.11 In the longer term, following the construction of Sizewell C, the **oLEMP** [REP1-010], and the EWMP for the wider estate, will create and maintain a landscape-scale mosaic of habitats suitable for reptiles. There would be minimal fragmentation and reptiles would still be able to move within the wider landscape following the removal of any exclusion fencing that may be needed at some sites.

### 4.3 Criteria for Success

4.3.1 Surveying and monitoring of reptiles and their habitat (at donor and receptor sites) would provide evidence to assess the success of the reptile mitigation strategy. Target and effectiveness measures are outlined in Table 4.5 of the **TEMMP** [REP5-088] to ensure .

4.3.2 Success shall be measured by maintaining and enhancing the conservation status of the reptile assemblage, as determined by the following criteria:

- successful capture and translocation of reptiles from the construction footprint, delivering a reptile-free site construction footprint in line with the timings required for the construction programme;
- maintain and continue to develop receptor site habitats, to accommodate any translocated reptiles from the construction footprint;
- successful establishment of reptiles in the receptor sites (as determined by reptile and habitat monitoring);
- no incidental mortality to reptiles during construction;



- long-term, landscape-wide increase in reptile habitat.

4.3.3 SZC Co. would have overall responsibility for the implementation of this reptile mitigation strategy, for ensuring the criteria for success are met and, if monitoring shows long-term impacts on the reptile population, responsibility for assessing why this is occurring and implementing appropriate additional actions to rectify this.

## 5. Conclusions

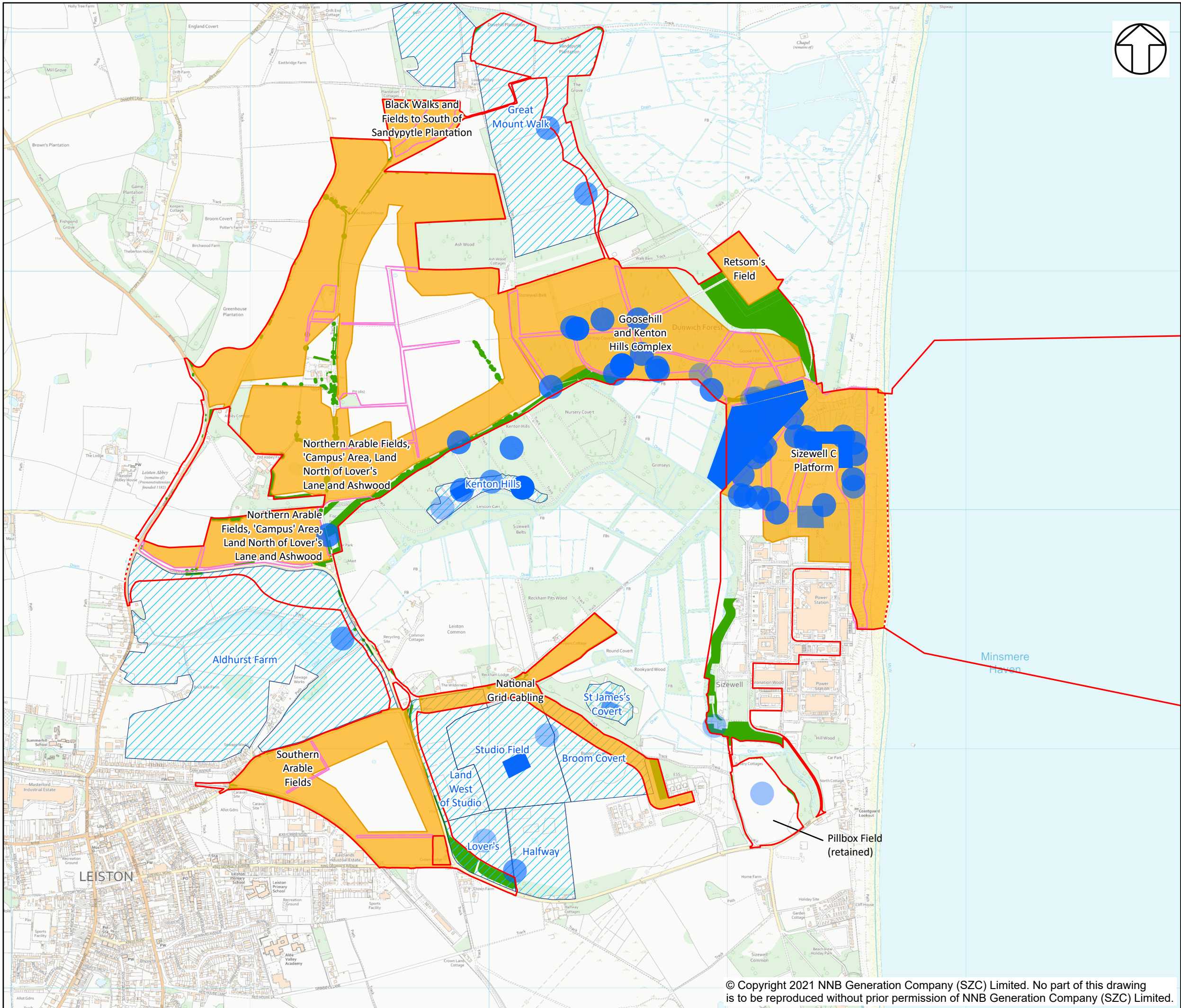
- 5.1.1 The population of reptiles that occupy parts of the EDF Energy estate would be affected by the development within the main development site. Compensation and mitigation measures within this Reptile Mitigation Strategy are aimed at maintaining the area as a ‘Key Reptile Site’ (see **Section 1**) and avoiding breaches of relevant legislation and policy.
- 5.1.2 Reptile survey work at potential donor sites has provided reliable density estimates for the four common reptile species found on site. These figures, along with a literature review on carrying capacity, have been used in the mitigation strategy provide an updated understanding of the numbers of reptiles likely to be translocated, and the carrying capacities of the potential receptor sites.
- 5.1.3 Reptile receptor sites have been established, and a survey comparing reptile prey availability at donor and receptor sites has demonstrated that there would be suitable amounts of prey available in the receptor sites. The receptor sites cover a larger area than reptile-suitable habitat lost and have enhanced features for reptiles (see **Section 2**).
- 5.1.4 A detailed pro-forma for assessing and monitoring receptor site suitability for reptiles has been developed and trialled. All receptor sites pass the simple receptor site checklist based on Natural England guidelines. Current assessments indicate that some of the receptor sites are either already at ‘Good’ status or should reach this level prior to any translocation programme (i.e. for those receptor sites that do not yet reach ‘Good’ status, management actions are in place to address this).
- 5.1.5 The approach to the mitigation solution has been to ensure an increase in area of better-quality habitat and that these habitats are well connected to the wider landscape. The receptor sites provide a total area of approximately 130ha and approximately 45.9ha of this is regarded as optimal reptile habitat; it is estimated that 32ha of optimal reptile habitat will be lost to facilitate the proposals. Comparing estimates of the numbers of reptiles likely to be translocated from the construction footprint, to the theoretical carrying capacity of the receptor sites (assuming they are ‘good’ quality), indicates that there is sufficient receptor site area to accommodate the number of reptiles likely to require moving whilst still allowing for a substantial margin of error.
- 5.1.6 The reptile monitoring programme is set out in the Table 4.5 of the **TEMMP** [\[REP5-088\]](#). On-going mitigation and monitoring work pre-translocation will include:

- completion of vegetation management and creation of habitat features;
- review the habitat assessment scores for each receptor site to ensure suitability has been maintained or if possible enhanced;
- on-going monitoring of the receptor sites;
- undertaking surveys to establish (if possible) the location of hibernation features within areas of habitat to be affected by the development proposals to aid the prioritisation of the translocation programme;
- development of a detailed construction phasing plan.

**5.1.7** Although the construction phase will result in temporary habitat fragmentation across the EDF Energy estate, this will be mitigated in the long term by greater landscape-wide opportunities for reptiles through enhanced connectivity, including to the north of the EDF Energy estate (through management of Great Mount Walk); the middle of the estate (through management of the receptor sites at Kenton Hills); to the south-west (through management of Aldhurst Farm); and to the south (through management of Broom Covert and the Studio Field complex).

## APPENDIX A: Figures





NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- ADDER PRESENCE
- REPTILE RECEPTOR SITE
- REPTILE DONOR SITES
- OPTIMAL REPTILE HABITAT
- RETAINED VEGETATION

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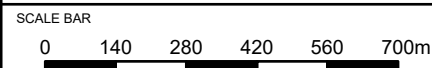


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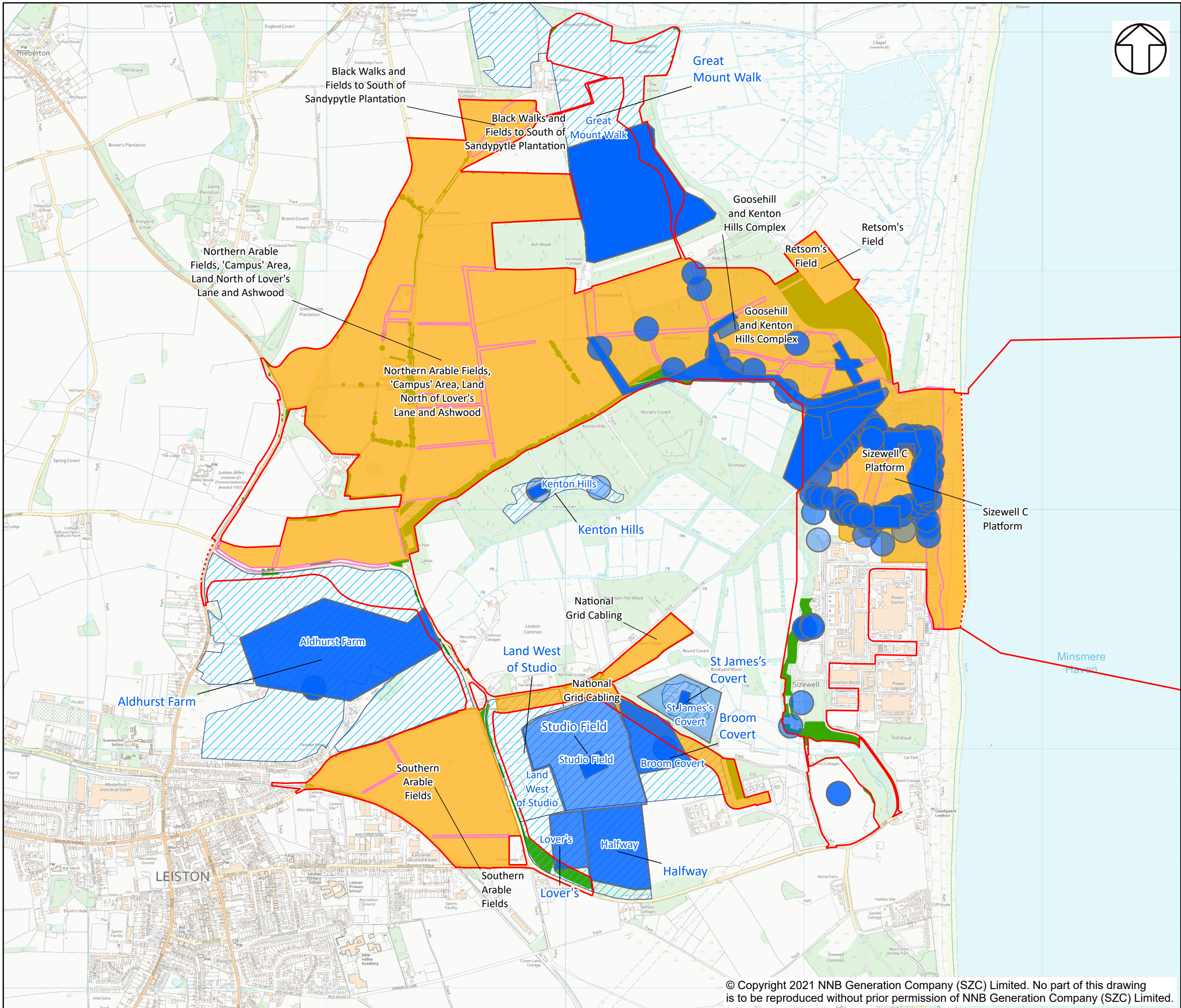
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DONOR AND RECEPTOR SITE PLAN: ADDER

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FIGURE 1

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NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- COMMON LIZARD PRESENCE (WITHIN STUDY AREA SINCE 2007)
- OPTIMAL REPTILE HABITAT
- REPTILE DONOR SITES
- REPTILE RECEPTOR SITE
- RETAINED VEGETATION

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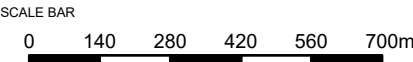


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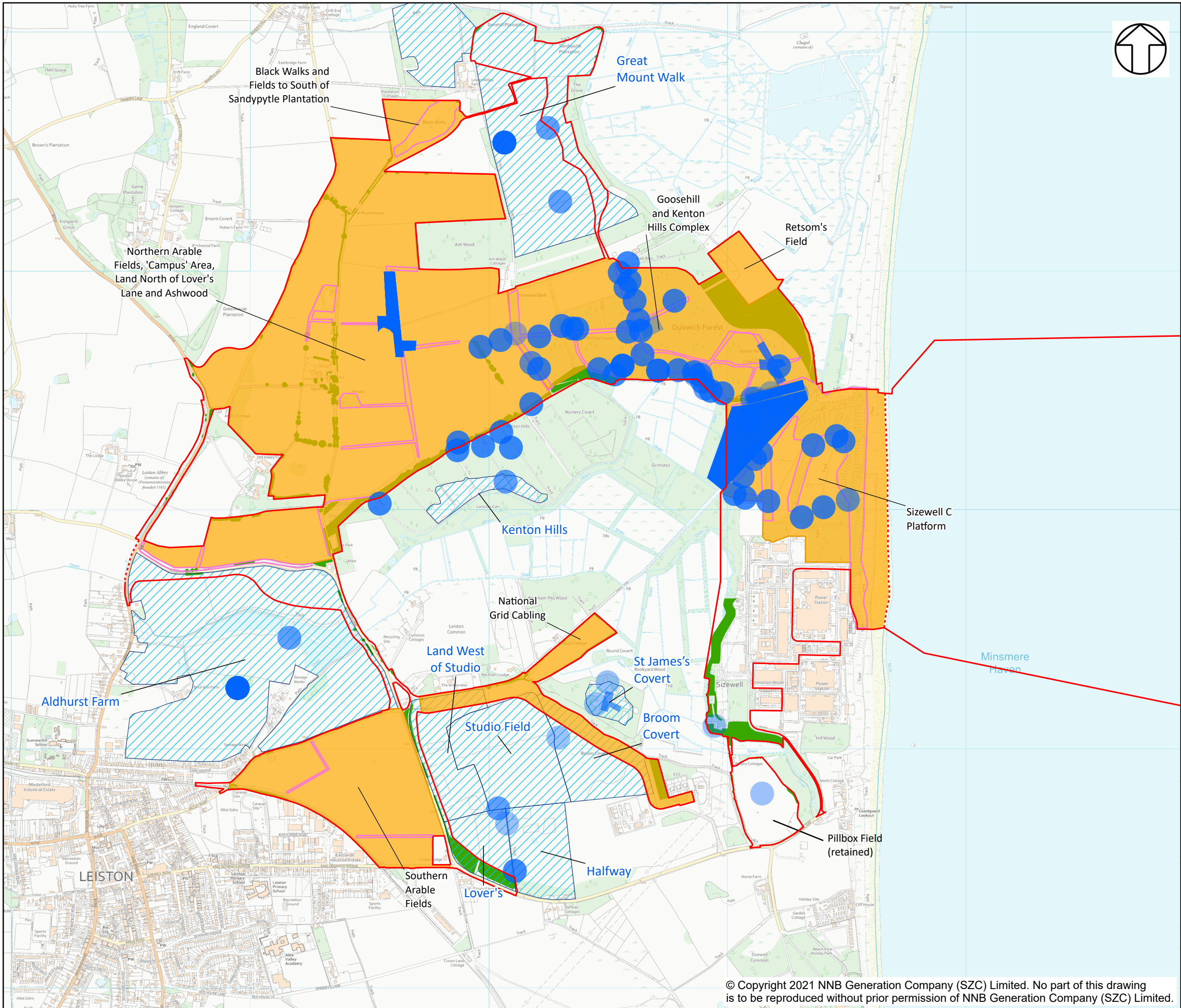
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FIGURE 2

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NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- GRASS SNAKE PRESENCE (WITHIN STUDY AREA SINCE 2007)
- OPTIMAL REPTILE HABITAT
- REPTILE DONOR SITES
- REPTILE RECEPTOR SITE
- RETAINED VEGETATION

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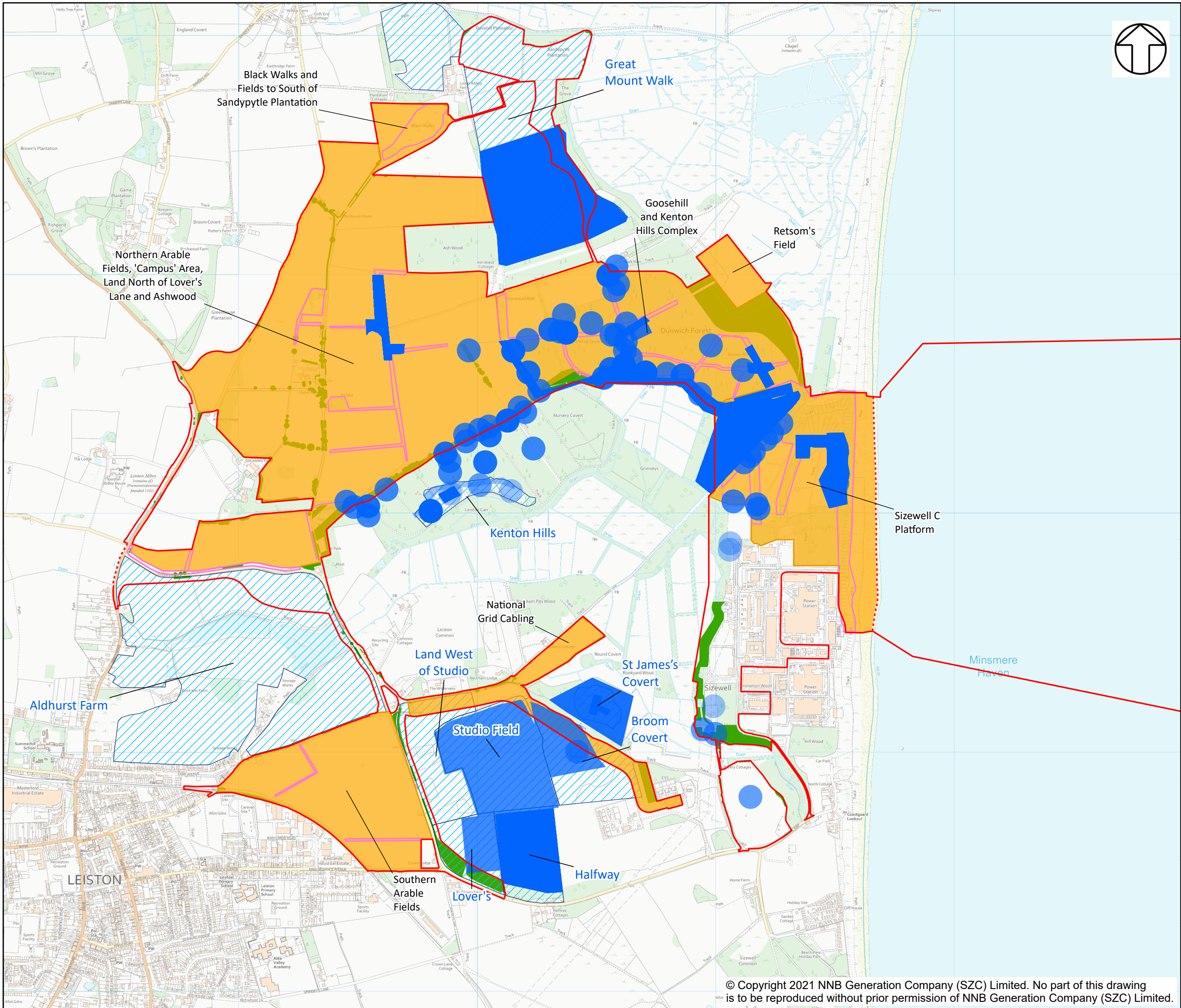
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DONOR AND RECEPTOR SITE PLAN:  
GRASS SNAKE

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FIGURE 3

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NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE
- SLOW WORM PRESENCE (WITHIN STUDY AREA SINCE 2007)
- OPTIMAL REPTILE HABITAT
- REPTILE DONOR SITES
- REPTILE RECEPTOR SITE
- RETAINED VEGETATION

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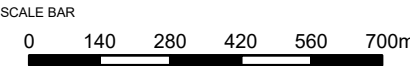


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REPTILE MITIGATION STRATEGY

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DONOR AND RECEPTOR SITE PLAN:  
SLOW WORM

DRAWING NO:  
FIGURE 4

DATE: AUG 21 DRAWN: R.M. SCALE: 1: @A3 REV: 01



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## APPENDIX B: Legislative Framework

### B.1 Legislation

B.1.1 There are four common and widespread species of reptile that are native to Britain: common or viviparous lizard, slow worm, adder and grass snake.

B.1.2 All are are protected via part of Section 9(1) of the Wildlife & Countryside Act 1981 (as amended) against intentional killing and injuring and via part of Section 9(5) of the Wildlife & Countryside Act 1981 (as amended) against:

- selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
- publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things.

B.1.3 Section 40 of the Natural Environment and Rural Communities Act 2006 places a duty on every public authority, in exercising its functions, to have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity (and, in particular, to have regard to the United Nations Environmental Programme Convention on Biological Diversity of 1992).

B.1.4 Section 41 and 42 respectively require the Secretary of State as respects England, to publish a list of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of conserving biodiversity. They are required to (i) take such steps as to further the conservation of these and (ii) keep the lists under review. All four common reptile species are included on the list f species in Section 41.

### B.2 Licensing

B.2.1 None of the four common species identified requires a licence to capture and move (translocate) to a new (receptor) site.

## APPENDIX C: Minimum specifications of reptile mitigation features

**C.1.1** Minimum specifications for reptile mitigation features can be found in Highways Agency (Ref. 1.8) and Edgar *et al.* (Ref. 1.3). This Appendix details what these minimum specifications are, and shows how they have been attained and/or exceeded for the Sizewell C Project reptile mitigation work. Materials for windrow construction and other refugia would be provided from planned forestry thinning operations within Kenton and Goose Hills. Landscape planting would be locally-sourced where possible, as would heathland brashings applied on some receptor sites to increase heathland plant establishment and diversity.

### **C.2** Habitat and lifecycle features required

**C.2.1** There are a number of factors that need to be taken into account when selecting potential receptor sites (English Nature 2004 (Ref. 1.9)), and each reptile species has slightly different niche preferences. All species favour edge habitat (i.e. the interface between shorter and longer vegetation) as this provides basking sites in close proximity to the safety provided by cover.

**C.2.2** The habitat creation and improvement works within the receptor sites have aimed to provide a diverse range of habitats and features to support all four species of reptiles, which are considered to be as follows:

- areas of habitat suitable to support thriving populations of prey items the reptiles require;
- south-facing banks and areas of bare ground to allow reptiles to bask and raise their body temperature;
- areas of dense scrub and other vegetation, located close to basking sites, into which reptiles can move to avoid predators;
- structures that provide an area below ground that is dry and frost-free for hibernation during the winter period;
- piles of cut/composting vegetation (for grass snakes to use as egg-laying sites); and
- log piles and piles of brash to introduce cover (and additional hibernation sites) for reptiles, and also to provide habitat structure supporting prey species.

- C.2.3 All of the above aspects have been considered when designing the receptor site assessment methodology and criteria. Specifications for the creation of basking banks, hibernacula, log/brush piles and grass snake egg-laying heaps are provided below.

### C.3 Basking banks

- C.3.1 South facing banks should be excavated to a depth of 600mm with logs and brash piled on top, before capping with turf and topsoil to create a dry, frost-free refuge earth pile to a height of 1m with a base of at least 5m wide to ensure stability. The banks should be sown with an acid grassland mix and some scattered shrub. It would be advantageous if a hibernaculum could be incorporated into the bank.

**Plate 1.1: Basking banks incorporating hibernacula in St James and the Studio.**



### C.4 Specifications for the creation of hibernacula

- C.4.1 The key design features of hibernacula are as follows:
- a sunny position;
  - a well-drained site not prone to flooding;
  - orientation so that one of the long banks faces south;
  - access for reptiles through openings;
  - location in a patch of habitat such as tussocky grassland;
  - minimal public disturbance; and

- size - at least 4m long and 2m wide, by 1m high, but can be much larger.

**C.4.2** Hibernacula can be made of a range of materials including timber, brash, inert hardcore and bricks, grubbed up roots, or general building rubble. Hibernacula can be constructed by digging a pit and then placing the materials partially buried inside, rather than creating a mound on the surface. There is no risk of winter flooding at any of the proposed receptor sites, so partially buried hibernacula are suitable. The top surface of the hibernacula should be covered in soil and seeded or have excavated turves from the base placed on top. It is important to create access holes that are continuous with voids deeper within the structure. Shrubs on the northern side of the hibernacula also provide shelter and cover. There are many excavated tree root plates that have been placed in receptor sites to act as hibernacula.

**Plate 1.2: Tree root plate (St James) and log piles (Studio Field) providing hibernacula.**



## **C.5 Specifications for the creation of log and brash piles**

**C.5.1** Log and brash piles should be at least 10m by 10m in area and 1m high. The material should only be moderately compacted. They should be in sunny locations and preferably set within existing vegetation; for example, on the edge of shrub areas.

**C.5.2** There is no shortage of conifer logs and brash at Sizewell, but the material must be uneven in size and the piles should have an uneven, complex shape. Log piles would need to be regularly topped up as the material decomposes, particularly as they would be predominantly softwood.



## C.6 Specifications for maintenance of diverse sward height

- C.6.1 To prevent regeneration of scrub/bracken and to create a mosaic of different grass heights in a receptor area, the core area needs to be cut/flailed twice a year to keep the sward short and the various ‘fingers’ of this area should be cut on a three year rotation to allow a range of different heights of grass to be maintained (e.g. cut one area one year, a second area the next year and the final area the third year, then start again at the first area on the fourth year). Some areas of the short grass should be scraped on an annual basis to maintain bare earth – to be delayed until the year before translocation.

**Plate 1.5: Diverse sward height and cover (Studio Field).**



## C.7 Specifications for the creation of grass snake egg-laying heaps

- C.7.1 Grass snakes usually nest in heaps of decaying vegetation where the heat of decomposition incubates the eggs. Suitable material for the heaps can include grass cuttings, manure, sawdust, leaf mould, old straw, hay bales or cut reeds, but the material must be actively decomposing and producing heat. Grass snake egg-laying heaps can also be constructed by piling cuttings on top of a log base which aerates the heap and creates easy access for females. The decaying vegetation could comprise old hay bales, which are available at Sizewell.
- C.7.2 The heaps need to be large, at least 1m tall, and ideally much larger. They should be placed in sunny or partially sunny areas. The heaps would need replenishing, or alternatively new egg-laying sites should be regularly created. The heaps should not be interfered with between June and September, to avoid disturbance. Topping up of the heaps should therefore

be undertaken at least every two years, in April or October (potentially with arising from grass management). Grass snakes require access to wetland habitat such as ponds, marshes and ditches that support amphibians which are their principal prey species, which may dictate the locations for the grass snake egg-laying heaps.

**Plate 1.6: Grass snake grass heap (St James).**



## APPENDIX D: Indicative long-term management plan for receptor sites

**Table D.1: Indicative annual long-term management plan.**

Objective	Management activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ensure continued availability of hibernation and foraging features	Monitor the windrows, log and brash pile features provided, and add more material to these as required to replace loss of material through decomposition												
	Replace a fresh layer of hay or other material to each of the grass snake egg laying piles. This should occur in the spring of each year.												
	Monitor the hibernacula features provided and if required place additional logs and brash on top of these features replace loss of material through decomposition.												
Ensure continued availability of dense cover	Replant any failed areas of shrub planting to maintain the correct proportion of scrub planting.												
	Maintain areas of low, thick scrub cover (in particular gorse) by cutting or coppicing selected												

## SIZEWELL C PROJECT – REPTILE MITIGATION STRATEGY

**NOT PROTECTIVELY MARKED**

Objective	Management activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	areas at intervals to ensure scrub does not become open and gappy at the bottom.												
	Control naturally regenerating birch by cutting individual trees or weed-wiping in the spring to ensure that individual tall trees do not become established in dense scrub areas.												
	Control self-seeded conifers by cutting of at ground level in spring to ensure that individual tall trees do not become established in dense scrub areas.												
	Maintain diversity of dense scrub planting by the control of dominant species such as gorse and bramble by occasional cutting.												
Ensure continued availability of open areas	Repair any slumping to south facing banks.												
	Flail mow vegetation on banks on rotation to ensure a mosaic of short and longer patches of vegetation.												
	Maintain a diversity of sward heights and diversity of species by flail mowing. The frequency to be												

NOT PROTECTIVELY MARKED



## SIZEWELL C PROJECT – REPTILE MITIGATION STRATEGY

**NOT PROTECTIVELY MARKED**

Objective	Management activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	determined based on the extent of rabbit browsing and which problem plant species may require control.  Control regenerating birch and conifers by weed-wiping and cutting, as required.												
	Control bracken by flailing to reduce the vigour of the rhizomes, or spot treatment, whilst allowing some bracken to remain and become established and spot treatment if required.												
	Control low growing bramble by flailing lower to the ground in some areas on a rotational basis.												
	Review (with the exception of Kenton Hills and St James Covert) when it may be appropriate to introduce low intensity grazing to maintain open areas.	Review as appropriate after receptor sites have been established for 5- 6 years											
Keep the public informed about the reptile capture and	Implement appropriate signage or other activities to keep the public informed about the reptile translocation works.	Review and implement as appropriate throughout the year											

NOT PROTECTIVELY MARKED

## SIZEWELL C PROJECT – REPTILE MITIGATION STRATEGY

**NOT PROTECTIVELY MARKED**

Objective	Management activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
translocation process													
Monitor the establishment and development of heath and acid grassland	Implement a botanical monitoring programme to review establishment of heath and acid grassland vegetation.  Review monitoring programme after completion of translocation exercise												
Monitor the effectiveness of the capture and translocation exercise	Implement a programme to monitor the capture and translocation programme.	On-going throughout translocation exercise.											
Ensure receptor sites are kept free from excessive disturbance	Fence the northern boundary of Lovers, adjacent to Sandy Lane with stock proof fencing to restrict access to the established bridleway.												

NOT PROTECTIVELY MARKED

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