The Sizewell C Project

6.14 Environmental Statement Addendum

Volume 3: Environmental Statement Addendum Appendices

Chapter 2 Main Development Site

Appendices 2.9.A-D Terrestrial Ecology and Ornithology Part 2 of 2

Revision: 1.0

Applicable Regulation: Regulation 5(2)(a)

PINS Reference Number: EN010012

January 2021

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

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EDF CGN

SIZEWELL C PROJECT ENVIRONMENTAL STATEMENT ADDENDUM – MAIN DEVELOPMENT SITE: CHAPTER 2

APPENDIX 2.9.C: PROTECTED SPECIES AND 2.9.D FEN MEADOW STRATEGY

Documents included within this Appendix are as follows:

- 2.9.C1: DEPTFORD PINK DRAFT LICENCE UPDATE – METHOD STATEMENT
- 2.9.C2: GREAT CRESTED NEWT – UPDATED NON-LICENSABLE METHOD STATEMENT
- 2.9.C3: NATTERJACK TOAD DRAFT LICENCE UPDATE – METHOD STATEMENT PART 1
- 2.9.C4: NATTERJACK TOAD DRAFT LICENCE UPDATE – METHOD STATEMENT PART 2
- 2.9.C5: WATER VOLE DRAFT LICENCE UPDATE – METHOD STATEMENT
- 2.9.D: FEN MEADOW STRATEGY

APPENDIX 2.9.C1: DEPTFORD PINK DRAFT LICENCE UPDATE – METHOD STATEMENT

CONTENTS

TABLES

None Provided.

PLATES

FIGURES

None Provided.

1 INTRODUCTION

a) Background and scheme overview

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 The Sizewell C site is located on the Suffolk coast, approximately halfway between Felixstowe and Lowestoft; to the north-east of the town of Leiston. The project is being submitted as a component Nationally Significant Infrastructure Project (NSIP) and will be approved through the Development Control Order Process (DCO).

1.1.3 This updated draft method statement outlines the key approaches to mitigating potential impacts to the Deptford Pink (*Dianthus armeria*) populations present within or adjacent to the construction site for Sizewell C main development site. It will be used by the consultant ecologist, SZC Co. and any relevant subcontractors, in relation to the proposal to build Sizewell C. This updated method statement has been produced to take account of a survey undertaken for this species and as well as records made by third parties in 2020. The original method statement was included in the application for development consent as **Volume 2, Chapter 14, Appendix 14C11** of the **Environmental Statement** (ES) (Doc Ref. 6.3) [APP-252].

1.1.4 Sizewell C would comprise two United Kingdom European Pressurised Reactor (UK EPR™) units with an expected net electrical output of approximately 1,670 megawatts (MW) per unit, giving a total site capacity of approximately 3,340MW. The new nuclear power station would represent the Nationally Significant Infrastructure Project (NSIP) component of the proposed development

1.1.5 In addition to the key operational elements of the UK EPR™ units, the Sizewell C Project comprises other permanent and temporary development to support the construction and operation of the Sizewell C nuclear power station. The key elements are the main development site, comprising the Sizewell C nuclear power station itself, offshore works, land used temporarily to support construction including an accommodation campus and a series of off-site associated development sites in the local area. These include:

- Two temporary park and ride sites; one to the north-west of Sizewell C at Darsham (the 'northern park and ride'), and one to the south-west at Wickham Market (the 'southern park and ride') to reduce the amount of

traffic generated by the construction workforce on local roads and through local villages;

- A permanent road to bypass Stratford St Andrew and Farnham (referred to as the 'two village bypass') to alleviate traffic on the A12 through the villages;
- A permanent road linking the A12 to the Sizewell C main development site (referred to as 'Sizewell link road') to alleviate traffic from the B1122 through Theberton and Middleton Moor;
- Permanent highway improvements at the junction of the A12 and B1122 east of Yoxford (referred to as the 'Yoxford roundabout') and other road junctions to accommodate Sizewell C construction traffic;
- A temporary freight management facility at Seven Hills on land to the south-east of the A12/A14 junction to manage the flow of freight to the main development site;
- A temporary extension of the existing Saxmundham to Leiston branch line into the main development site ('the green rail route') and other permanent rail improvements on the Saxmundham to Leiston branch line, to transport freight by rail in order to remove large numbers of HGVs from the regional and local road network; and
- Green rail route extension and rail improvements to the Saxmundham to Leiston branch line.

1.1.6 The components listed above are referred to collectively as the 'Sizewell C Project'.

1.1.7 In order to enable the proposed development of the main development site, as detailed above, a number of facilitating works (including vegetation clearance works and ground-breaking works) are required. These works cover an area on which Deptford Pink (*Dianthus armeria*) has been recorded. The proposed facilitating works therefore have the potential to cause the loss of Deptford Pink that is known to be present. Accordingly, the purpose of this document is to provide a method statement that can be used by the consultant ecologist, SZC Co. and any relevant subcontractors, to ensure the conservation status of Deptford Pink is maintained during the facilitation works to be undertaken within the site.

b) Site location and setting

1.1.8 The main development site is located at Sizewell, East Suffolk. The Site are is presented in **Plate 1.1** below. The site largely is dominated by arable

fields with field boundaries comprising native, species poor hedgerows or tree lines. Several woodland blocks, comprising plantation, mixed plantation and broadleaved semi-natural woodland, are scattered across the site. The largest woodland area present to the north east includes Hilltop Covert, Dunwich Forest, Goose Hill and the northern boundary of Kenton Hills. Numerous farm buildings and structures are also scattered to the north and west of the site. Some of the application site falls within the following designated sites:

- Sizewell Marshes SSSI; the area subject to land take includes an area of reedbed, ditches, wet woodland and fen meadow;
- Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB);
- Sizewell Levels and Associated Areas County Wildlife Site (CWS) – largely plantation woodland and acid grassland; and
- Suffolk Shingle Beaches CWS – dune grassland and vegetation shingle.

1.1.9 The eastern edge of the terrestrial part of the main development site includes vegetated shingle habitats backed to the west by a poorly developed dune system with Marram (*Ammophila arenaria*), Bracken (*Pteridium aquilinum*) and scattered Sea Buckthorn (*Hippophae rhamnoides*), Gorse (*Ulex europaeus*) and Broom (*Cytisus scoparius*) scrub. Scrub and rank grassland are dominant on land previously associated with the construction of Sizewell B power station located immediately west of the dune system. Habitats here include tussocky unmanaged grassland and planted native scrub species.

1.1.10 Habitats suitable for supporting Deptford Pink are thought to be restricted to the open areas of dune grassland and fringes of the vegetated shingle which enable germination without the competition and shading from vigorous perennial species. The area covered by this method statement is presented in **Plate 1.1** overleaf with the grid reference (TM 4757 6389) location indicated (blue circle).

Plate 1.1: Site location

Source: ESRI

c) Proposed works

1.1.11 Earthworks and construction of the proposed development sea defences are likely to remove or substantially disturb the area in which Deptford Pink is growing, leading to a loss of the habitat in which this plant is found (**Volume 2, Chapters 1** to **4** of the **ES** (Doc Ref. 6.3) [APP-178, APP-180, APP-184 and APP-187]).

d) Key ecological constraints

1.1.12 This draft method statement only covers Deptford Pink. There are draft method statements and draft protected species licenses for other receptors as relevant.

1.1.13 This document is presented as a second draft. SZC Co. and its consultant ecologists are committed to working with Natural England and other stakeholders to further develop the approaches outlined within this

document to ensure a legally robust approach to Deptford Pink before the document is finalised. Further surveys will be undertaken as relevant and these will also inform the final draft of this and related documents, sufficient to inform any relevant licence.

2 METHOD STATEMENT FOR DEPTFORD PINK

2.1 Introduction

2.1.1 This section provides a method statement for the relocation for Deptford Pink prior to the facilitation works.

2.1.2 The current location of the Deptford Pink cannot be avoided by construction as new sea defences in this area are needed to protect the new platform for Sizewell C.

2.1.3 It is the responsibility of the site contractors to carry out the works in a manner which will not contravene the legislation with regards to protected species in the areas identified as supporting this protected species and potentially suitable for supporting this species Any variations from the individual method statements may contravene legislation and therefore risk prosecution. Thus, it is their joint responsibility that no changes to the timings or methods outlined below are made without prior agreement from the Ecological Clerk of Works (ECoW).

2.2 Species description

2.2.1 Plantlife[1] (webpage resource) describes Deptford Pink as a biennial plant, flowering July to September. It occurs throughout Europe, but in the UK it is found only in scattered sites, predominately in southern England. It is considered as 'Nationally Scarce'.

2.2.2 Deptford Pink has been recorded on tracks, waysides, railway cuttings and hedge banks. It is associated with disturbed ground and open well-lit conditions.

2.2.3 It is classified as endangered in the UK (Ref. 1) and considered to be at high risk of extinction in the wild. The reasons for decline include habitat destruction, including agricultural improvement, afforestation, and urban development.

2.2.4 Deptford Pink overwinters as basal leave rosettes and dead flower stalks may persist for several months. It is most-often self-pollinated, produces abundant seeds and has a germination period of up to 5 months. Seed is shed in the late summer and autumn which germinates the following March.

2.2.5 Plantlife considers that to restore Deptford Pink sites, it is important to remove shade and competing vegetation.

[1] https://www.plantlife.org.uk/uk/discover-wild-plants-nature/plant-fungi-species/deptford-pink

2.3 Status on site

2.3.1 The following desk study records exist for Deptford Pink within the main development site:

- "*Sizewell Beach, TM4763, 20/06/2014, Dayne West. About 8 plants*." (Transcripts of the Suffolk Naturalists Society 52 (2016)).
- "*Between Sizewell B and proposed Sizewell C sites. 6 Count of present 2014. TM474639. Longitude: 1.6222643007265. Latitude: 52.217253544491*". (Suffolk Biodiversity Information Service (SBIS) (2018)).
- "*North of Sizewell B Station between the Power Station boundary chestnut paling fence and the dune ridge TM475638 - approximate location flowering in June*". (Charles Cuthbert *pers. comm*. (2020)).

2.3.2 The reference to Sizewell Beach (record 1) indicates that the plant is located in the area of dunes or bordering the shingle. It is unknown if the records refer to the same or different colonies of plants.

2.3.3 It should be noted that of two other recent records in Suffolk (Ref. 2) both were thought to be of casual or garden origin rather than representing native populations and this may also be the case for the Sizewell records.

2.3.4 Deptford Pink requires annual recruitment of new plants to sustain colonies. Habitats to the west of the dunes are unlikely to be suitable for Deptford Pink as these areas support planted scrub and unmanaged grassland which would compete with and shade Deptford Pink seedlings. If any seed were to germinate in this area it would not be expected to survive long enough to form a basal rosette.

2.3.5 Surveys of the potential locations including the location of the record reported in June 2020 (record 3) were undertaken in July 2020 by a Technical Director (CEcol, MCIEEM) and a Graduate Ecologist (GradCIEEM) and in August 2020 by a Consultant Ecologist (gradCIEEM) and a Graduate Ecologist (Qualifying CIEEM). While its flowering season is stated as July, August and September[1], in 2020 it flowered in June (record 3 above) and was not detected by August.

2.4 Legislation

2.4.1 Deptford Pink is protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) (Ref. 3). The Act provides protection as follows:

"*1) Subject to the provisions of this Part, if any person—*

(a) intentionally picks, uproots or destroys any wild plant included in Schedule 8; or

(b) not being an authorised person, intentionally uproots any wild plant not included in that Schedule, he shall be guilty of an offence.

(2) Subject to the provisions of this Part, if any person—

(a) sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant; or

(b) publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things, he shall be guilty of an offence.

(3) Notwithstanding anything in subsection (1), a person shall not be guilty of an offence by reason of any act made unlawful by that subsection if he shows that the act was an incidental result of a lawful operation and could not reasonably have been avoided.

(4) In any proceedings for an offence under subsection (2)(a), the plant in question shall be presumed to have been a wild plant unless the contrary is shown."

2.4.2 Removal of plants from the site would need to proceed under a licence granted by Natural England for the purposes of conservation (Application for a licence to take wild plants for science, research, education or conservation (A31)). This method statement has been developed to support such a licence application.

2.4.3 Deptford Pink is listed as a Species of Principal Importance under the Natural Environment and Rural Communities (NERC) Act 2006 (Ref. 4). As such it would need to be taken into consideration by a public body when performing any of its functions with a view to conservation.

2.5 Translocation methodology

2.5.1 The translocation of plants and seeds will include the steps outlined in the sections below. The precise approach is dependent on population size:

- Identification of extant 'donor' plants.
- Confirmation and preparation of 'receptor' site (area on site to receive plants, seeds or seedlings).
- Seed collection and sowing (at the receptor site and in cultivation).
- Translocation (movement) of plants from donor to receptor site.

- Planting of plugs (basal rosettes) at the receptor site from plants grown from seed from the donor plants in cultivation.

a) Identification of donor plants

2.5.2 A targeted walkover survey will be undertaken during June and July in 2021 to locate any flowering plants and non-flowering rosettes of Deptford Pink. Surveys will be carried out in June to ensure that if early flowering takes place again, it will be identified when in flower. The location of plants will be recorded as set out below. The precise method adopted will be dependent on the number of plants that are present. This methodology is based on the survey method used by the Species Recovery Trust (Ref. 5).

- 1-10 plants. The location of each plant will be recorded using GPS, a photographic record will be made and a numbered marker (tagged cane) will be inserted adjacent to the basal rosette. This will correspond with data on the plant collected digitally.

- 10-1000 plants. The location of each distinct group of plants will be recorded using GPS, a photographic record will be made and a numbered marker (tagged cane) will be inserted within the group of plants. This will correspond with data on the group collected digitally, which will include the number of flowering and non-flowering plants in the group. Should plants be widely scattered then the approach taken for 1-10 plants would be followed for up to 100 plants, above this number an estimate of the number of plants would be made. Any concentrations of plants would be recorded using GPS, photographed and marked with numbered canes.

- >1000 plants. The location of each distinct group of plants will be recorded using GPS, a photographic record will be made and a numbered marker (tagged cane) will be inserted adjacent within the group of plants. This will correspond with data on the group collected digitally, which will include an estimate of the number of flowering and non-flowering plants in the group. Should plants be widely scattered then an estimate will be made for the overall number of plants and any concentrations would then be recorded using GPS, photographed and marked with numbered canes.

b) Confirmation of receptor site

2.5.3 A proposed receptor site has been identified to the south of the known Deptford Pink colony. This comprises the dune system beyond that affected by the sea defence works for the Sizewell C power station and in front of the existing Sizewell B power station (grid reference TM 47579 63285).

2.5.4 A detailed inspection of the receptor area will be undertaken during June and July 2021 to correspond with the survey to identify Deptford Pink plants. The inspection will take into account the numbers of Deptford Pink plants found to be present and therefore the likely area required to receive plants and seeds.

2.5.5 The receptor habitat will be electronically mapped into compartments labelled using the following categories:

- Bare ground considered too trampled, exposed or unstable for successful establishment of Deptford Pink.
- Sparse ephemeral communities/thin grass with open areas of bare ground, suitable for the successful establishment of Deptford Pink.
- Coarse grass/herbs, unsuitable in current state for successful establishment of Deptford Pink.
- Scrub, unsuitable in current state for successful establishment of Deptford Pink.
- Areas supporting diverse flora or other notable plant species, which would need to be considered in the context of receiving Deptford Pink plants or seed.

c) Preparation of receptor site

2.5.6 Category 1 areas will not be used for receiving plants/seed and are not considered further.

2.5.7 Category 2 areas will be considered for receiving plants/seed but may require minor disturbance prior to sowing seeds or moving plants. This will involve the scarification of the soil surface using a metal rake to create a seedbed. This would be undertaken immediately prior to planting/sowing.

2.5.8 Category 3 areas will be considered for receiving plants/seed if insufficient Category 2 areas exist to support a viable and sustainable population of Deptford Pink, to at least mirror that lost. In this instance, coarse grass and herbs will be removed. A rotavator or similar may be used for this purpose, with extracted material removed from site. It is anticipated that such areas are likely to be more nutrient rich than those supporting ephemeral communities and therefore the success of long-term establishment of Deptford Pink in such areas may be compromised.

2.5.9 Category 4 areas are unsuitable for Deptford Pink establishment and will be avoided.

2.5.10 Category 5 areas will need to be reviewed on a case by case basis. Should it be possible to avoid notable plants or biodiverse areas, the ground will be scarified as for Category 1 in preparation for receiving plants/seed.

d) Seed collection, storage and cleaning

2.5.11 The data collected in June and July will be used to relocate flowering Deptford Pink plants in mid-September of the same year. As the colony is to be lost in its entirety, all seed heads will be collected. It is anticipated that under 50 plants are likely to be present based on the number of plants recorded by the desk study records for this species.

2.5.12 The collection date will be during dry weather. Seed heads will be placed in paper or muslin bags.

2.5.13 Seed heads will be stored in trays, kept cool and dry indoors until they dehisce. They will be regularly inspected to ensure they are not damp or infected with mould.

2.5.14 Once the seeds have dehisced, they will be 'cleaned' by removing the empty capsules, debris and any pests such as weevils or caterpillars.

2.5.15 The approximate number of seeds collected will be estimated.

e) Seed sowing

2.5.16 The following approach will be taken to seed sowing, based on the number collected:

- <100 seeds. Half to be grown on by a competent establishment as plug plants. Half to be sent for storage to the Millennium Seed Bank, Wakehurst Place (to be confirmed with Millennium Seed Bank).

- >100 seeds. Fifty seeds to be grown on by a competent establishment as plug plants. Fifty seeds to be sent for storage to the Millennium Seed Bank, Wakehurst Place (to be confirmed with Millennium Seed Bank). The remainder to be sown in the prepared receptor areas during mild, damp weather in October the year of the DCO (Year 1). Seed will be scattered by hand and gently raked in. The sown areas will be photographed, their GPS location recorded and marked using a numbered cane.

f) Translocation of plants

2.5.17 Up to 100 non-flowering rosettes will be carefully moved from the donor site to the prepared receptor areas.

2.5.18 The plants will be dug by hand using a trowel, attempting to keep the root ball intact.

2.5.19 They will then be wrapped in damp newspaper and placed in a plastic bag to prevent drying out before replanting in the prepared receptor areas on the same day.

2.5.20 The plants will be moved during cool damp weather in October). Plants will be watered into place.

g) Establishment of plug plants

2.5.21 Plug plants grown on from seed will be planted into the receptor areas during cool damp weather in October following the year of seed collection. Plants will be watered into place.

2.5.22 The success of establishing *Dianthus* species from pot grown plants has been confirmed for the related *Dianthus morisianus*. This is a species of fixed dunes in Sardinia. The survival rate of pot grown plants was >95% two years from planting and the fruit yield higher than that of the donor population (Ref. 1).

2.6 Monitoring

2.6.1 The receptor areas will be monitored the following June/July for successful establishment. Flowering plants and non-flowering rosettes will be counted up to 1000 basal rosettes, estimates will be made beyond this number. This monitoring will be extended for 5 years following translocation.

2.6.2 In the event that establishment has been poor or plants fail to persist, a proportion of seed stored in the Millennium Seed Bank may be grown on as plugs and transplanted to the site as previously described in an attempt to boost establishment.

2.6.3 A detailed monitoring plan will be prepared and this will be reported annually.

3 CONCLUSIONS

3.1.1 Providing that the recommendations outlined within this Method Statement are adhered to, it is possible to secure the future of the Deptford Pink on the site.

REFERENCES

1. JNCC (2019). Conservation Designations Spreadsheet. http://archive.jncc.gov.uk/default.aspx?page=3408 accessed 23.01.20

2. Sandford, M and Fisk, R (2010). A Flora of Suffolk. The Dorset Press.

3. HMSO (1981). The Wildlife and Countryside Act (as amended). HMSO, London.

4. HMSO (2006). The Natural Environment and Rural Communities Act. HMSO, London

5. Species Recovery Trust (undated). Species Handbook. Deptford Pink (*Dianthus armeria*). (PDF) Available at: https://a7f0f8fb-8a2c-49bc-a703-7c4cbecc26d7.filesusr.com/ugd/59de27_c98344007ea44534b48942a48d509713.pdf [Accessed 23.01.20].

6. Fauna & Flora International (2013). Oryx, 47(2), 203–206 The-effectiveness-of-plant-conservation-measures-The-Dianthus-morisianus-reintroduction

ANNEX A: A31: APPLICATION FOR A LICENCE TO TAKE WILD PLANTS FOR SCIENCE, RESEARCH, EDUCATION OR CONSERVATION.

Licence Application Form

Application for a licence to take wild plants: Survey, science, education and conservation

Please Note – Applications can be completed online.
For more information please visit our website.

- Please complete this application form using **dark ink** and BLOCK CAPITALS.
- Return the completed form to the address shown.
- All questions should be answered as appropriate. Questions marked with '*' are mandatory and failing to complete these may result in delays to your application.
- If there is insufficient space for completing answers on this form, please attach a separate sheet.
- Natural England will aim to determine the outcome of a completed licence application within its published service standards.
- If you experience any problems completing this application or using the online Case Work Management (CWM) system – please see our website for guidance or contact Wildlife Licensing.
- Additional guidance is provided in Using CWM – Applicant Guidance Document. This can be downloaded from our website or you can ask Wildlife Licensing to send you a copy.

Wildlife Licensing
Natural England
Horizon House
Deanery Road
Bristol, BS1 5AH.
T. 020802 61089
wildlife.scicons@naturalengland.org.uk

For Office Use Only

CWM Ref No:

Charter Deadline:

1. Applicant Details

Please enter the details of the person who will become the licensee.

(For guidance please see attached annex)

- *If the applicant **is** already registered as a customer please complete Registered Customer Details (a)*
- *If the applicant **is not** already registered as a customer please complete the New Customer Registration (b)*

(a) Registered Customer Details

*Customer Number	*Surname	*Forename	*Postcode

(a) New Customer Registration

Please note: If you are the agent registering on behalf of the applicant you will need to provide their full authorisation with this application.

*Email Address

*Title (please tick as appropriate) Mr ☐ Mrs ☐ Ms ☐ Other ☐ (Please Specify)

*Forename	Middle Name	*Surname

Professional Membership
(e.g. CIEEM, IEMA, etc)

If you represent an organisation please complete (i) (ii) and (iii)

(i) *Business Title

(ii) *Company

(iii) *Position

House Name / No.

*Address Line 1

*Address Line 2

Address Line 3

Town

*County

*Postcode

Country

Either 'Telephone No.' or 'Mobile No.' must be completed.

Telephone No.

Mobile No.

Fax no.

*Customer Type *(e.g. Farmer, Householder, Ecologist, etc.)*

*Are you VAT registered? Yes ☐ No ☐ If 'Yes' VAT Number:

*Are you registered with the Rural Payments Agency? Yes ☐ No ☐ If 'Yes' RPA SBI Number:

(b) Alternative Applicant Contact Details

In the event that the applicant is unavailable to discuss the application, it would be helpful if alternative contact details could be provided. By completing this section you are confirming that this contact is authorised to act on behalf of the applicant.

Name:

Tel Number:

Email Address:

2. Agent / Named Ecologist Details

(a) Will an agent / named ecologist be used in conjunction with this application? Yes ☐ No ☐
(For guidance please see attached annex)

- *If the agent **is** already registered as a customer please complete Registered Agent / Ecologist Details (b)*
- *If the agent **is not** already registered as a customer please complete the New Agent / Ecologist Registration (c)*
- *If there will not be an agent / ecologist used in conjunction with this application please go to the next section.*

(b) Registered Agent / Ecologist Details

*Customer Number

*Surname

*Forename

*Postcode

(c) New Agent / Named Ecologist Registration

Please note: If you are the applicant registering on behalf of the agent / named ecologist you will need to provide their full authorisation with this application.

*Email Address

*Title
(please tick as appropriate) Mr ☐ Mrs ☐ Ms ☐ Other ☐ (Please Specify

*Forename | Middle Name | *Surname

Professional Membership
(e.g. CIEEM, IEMA, etc)

If you represent an organisation please complete (i) (ii) and (iii)

(i) *Business Title | (ii) *Company | (iii) *Position

House Name / No.

*Address Line 1

*Address Line 2

Address Line 3

Town | *County

*Postcode | Country

Either 'Telephone No.' or 'Mobile No.' must be completed.

Telephone No. | Mobile No.

Fax no.

*Customer Type *(e.g. Farmer, Householder, Ecologist, etc.)*

*Are you VAT registered? Yes ☐ No ☐ If 'Yes' VAT Number:

*Are you registered with the Rural Payments Agency? Yes ☐ No ☐ If 'Yes' RPA SBI Number:

(d) Alternative Ecologist Contact Details

In the event that the named ecologist is unavailable to discuss the application, it would be helpful if alternative contact details could be provided. By completing this section you are confirming that this contact is authorised to act on behalf of the named ecologist and has a detailed knowledge of the application.

Name:

Tel Number:

Email Address:

3. Communication Preferences

Please indicate who should be contacted if we need to discuss this application:

Applicant ☐ Agent / Ecologist ☐

Please indicate to whom the outcome documentation for this application should be sent:

Applicant ☐ Agent / Ecologist ☐

Applicant preferences: Email ☐ Post ☐ Telephone ☐

If 'Yes' for telephone, please provide a contact no.

Agent / Ecologist preferences: Email ☐ Post ☐ Telephone ☐

If 'Yes' for telephone, please provide a contact no.

4. Previous Applications

(a) * To your knowledge, have there been any previous applications or licence decisions concerning this site? Yes ☐ No ☐

If 'No' please go to the next section. If 'Yes' to (a), please complete the following.

(b) *Date of most recent application:

(c) *What was the subject of the previous applications?

(d) *What is the application or licence reference number?

(e) *What was the outcome of the previous application? (Please select one of the following)

Granted ☐ Not Granted ☐ Advice Only ☐ Deferred ☐ Not Yet Known ☐

5. Purpose

(a) * Confirm the purpose of the application:

- ☐ Science or education, under section 55(2)(a) and/or section 16(3)(a)
- ☑ Conserving wild plants, under section 55(2)(c) and/or section 16(3)(c)
- ☐ Introducing wild plants to particular areas, under section 55(2)(c) and/or section 16(3)(c)
- ☐ Protecting any botanical collection, under section 55(2)(d) and/or section 16(3)(d)

(b) What are the main aims?

TO ENSURE THE LONG TERM SURVIVAL OF DEPTFORD PINK (DIANTHUS ARMERIA) AT SIZEWELL, SUFFOLK.

(c) * What publications have you produced or contributed to regarding this topic?	NONE. AN UNPUBLISHED METHOD STATEMENT IS APPENDED TO THIS APPLICATION.
(d) * Is data being collected? If yes, please describe what it will be used for.	THE SIZE OF THE DONOR POPULATION WILL BE RECORDED DURING THE YEAR OF TRANSLOCATION. THE SIZE OF THE TRANSLOCATED POPULATION WILL BE RECORDED AT THE TIME OF TRANSLOCATION AND YEARLY UP TO FIVE YEARS FROM THE TRANSLOCATION YEAR.

6. Justification

(a) * Please provide a summary of your need to apply:	THE CONSTRUCTION OF SEA DEFENCES AS PART OF THE SIZEWELL C NUCLEAR POWER STATION DEVELOPMENT WILL RESULT IN THE COMPLETE LOSS OF AN EXTANT POPULATION OF DEPTFORD PINK. THE SCALE AND REQUIREMENTS OF THE PROJECT ARE SUCH THAT THERE IS NO
(b) * If you are applying in relation to damage to land, crops, fisheries, or property, please provide the extent of damage and dates (including previous years if appropriate)	NOT RELEVANT

(c) * Have you taken any action to prevent the problems outlined above? Yes ☐ No ☐ N/A ☑

If 'Yes' to (c)... * Please provide details of the actions taken:

If 'No' to (c)... * Please explain why no actions have been taken?

7. Site Details

*Is the address for the site or premises to be licensed different to the applicant's address? Yes ☐ No ☐

If 'Yes' ... For each Site / Location to be licensed, please complete **all** of the following details:
If 'No' ... Please complete Site / Location Name and OS Grid Reference boxes only.
(For linear projects, please add the start and end points separately)

	Site 1	*Site 2*	*Site 3*
*Site / Location Name:	SIZEWELL NUCLEAR PC		
House No:			
Address Line 1:	SIZEWELL		
Address Line 2:	LEISTON		
Address Line 3:			
Town:			
*County:	SUFFOLK		
Postcode:	IP16 4UR		
*OS Grid Reference: *(In format XX123456)*	TM475638		

8. Conservation Considerations

(a) *Will any part of the proposed activity fall in and/or adjacent to a Designated Site? Yes ☑ No ☐ N/A ☐

If 'Yes' to (a) please complete the table below. If 'No', please go to the next section.

Please indicate whether the activity will fall on and/or adjacent to a designated site:	Designated Site Name:	Type of Designated Site *E.g. National Nature Reserve (NNR), Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar Site, Ancient Monument, Marine Nature Reserve (MNR), Area of Outstanding Natural Beauty (AONB)*
On ☐ Adjacent to ☑	SOUTHERN NORTH SEA SPECIAL AREA OF CONSERVATION (SAC)	
On ☐ Adjacent to ☐		
On ☐ Adjacent to ☐		
On ☐ Adjacent to ☐		
On ☐ Adjacent to ☐		
On ☐ Adjacent to ☐		

(b) Have you received permission from all the designated site managers? Yes ☐ No ☐ Not Known ☐

(c) Have you consulted with Natural England for advice on the implications of the application on the designated sites? Yes ☐ No ☐ Not Known ☐

(d) Please give either the outcome of your consultations or the reason why you have not consulted us. Please provide any relevant correspondence and the name of the local Natural England adviser or reserve manager consulted.

(e) Will work extend into future years? *(If 'Yes' please state how many years it will extend for)* Yes ☑ 12 years No ☐

(f) Is work part of a wider project or contributing to local Biodiversity Action Plans? Yes ☐ No ☑ Not Known ☐

9. Authorisation

(a) *Is the applicant the owner / occupier of the land? Yes ☑ No ☐ N/A ☐

If 'Yes' to (a) please go to the next section. If 'No' to (a) please answer (b).

(b) Have you received the owner occupier's permission to apply? Yes ☑ No ☐

Please note that it is your responsibility as the applicant to obtain the owner or occupier's permissions to act under licence on their property.

You may be asked to provide documentation which confirms that you have owner or occupier's permissions and we will contact you if this is necessary.

10. Application Details

(a) Please add details for all licensable actions you wish to perform:

	Licensable Action 1	Licensable Action 2	Licensable Action 3
Application Subject	*Wild plants - survey, science, education and conservation*		
* Species			
* Activity	☑ Collect ☑ Cut ☐ Damage ☐ Destroy ☐ Kill ☐ Mark ☐ Pick ☑ Possess ☐ Sell ☐ Take ☐ Transport ☐ Uproot	☐ Collect ☐ Cut ☐ Damage ☐ Destroy ☐ Kill ☐ Mark ☐ Pick ☐ Possess ☐ Sell ☐ Take ☐ Transport ☑ Uproot	☐ Collect ☐ Cut ☐ Damage ☐ Destroy ☑ Kill ☐ Mark ☐ Pick ☐ Possess ☐ Sell ☐ Take ☐ Transport ☐ Uproot
* Method or Field Technique	☐ Alcohol ☐ Benthic sediment cores ☐ Clipping ☐ Core sampling by hand ☐ Digging ☐ Grappling ☑ Hand ☐ Hand held tools ☐ Leaf clip	☐ Alcohol ☐ Benthic sediment cores ☐ Clipping ☐ Core sampling by hand ☑ Digging ☐ Grappling ☐ Hand ☐ Hand held tools ☐ Leaf clip	☐ Alcohol ☐ Benthic sediment cores ☐ Clipping ☐ Core sampling by hand ☑ Digging ☐ Grappling ☐ Hand ☐ Hand held tools ☐ Leaf clip
Number	ALL SEED HEADS PRESENT ON SITE	UP TO 100 PLANTS FROM DONOR SITE	REMAINING PLANTS LEFT ON DONOR SITE (UP TO 100 PLANTS
Plant Part	SEED HEADS CONTAINING SEEDS	WHOLE NON-FLOWERING PLANTS	WHOLE PLANTS
County	SUFFOLK	SUFFOLK	SUFFOLK

OS Grid Reference *(or 10km grid square)*	TM475638	TM475638	TM475638
Detailed Location	SAND DUNES LOCATED AT TM47576389	SAND DUNES LOCATED AT TM47576389	SAND DUNES LOCATED AT TM47576389
Proposed Date From	01.09.22	01.10.22	01.01.23
Proposed Date To	30.09.22	31.10.22	31.12.34

(b) * Does the work involve translocations (introductions, re-introductions or moving species)? Yes ☑ No ☐

If 'Yes' to (b)... * Have you evaluated the proposal against NE's translocation guidance on native plants? YES, REVIEWED AGAINST THE IUCN GUIDELINES FOR REINTRODUCTIONS

11. Authorised Individuals

* Will any additional authorised individuals / accredited agents be required to act under this license? Yes ☐ No ☐ (EPS only) N/A ☐ If 'No' please go to the next section.

If 'Yes', for each additional authorised individual / accredited agent, please complete the details below:

	Person 1	*Person 2*	*Person 3*
*Title:			
*Forename:			
Middle Name:			
*Surname:			
House No.:			
*Address Line 1:			
*Address Line 2:			
Address Line 3:			
Town:			
*County:			
*Postcode:			

Please note: The licensee and anyone acting under the licence are responsible for their actions and for complying with the licence conditions. In addition, no-one under the age of 18 may be authorised by the licensee without specific written permission from Natural England for licences that permit shooting.

12. Qualifications

If you have not held a similar type of licence within the last 3 years you will need to supply references to support your application. You must follow the guidance on our website with regard to the number and content of references required. If you submit the incorrect number of references or references with content which is not as described, it is likely your application will be refused.

(a) *Are you providing references? Yes ☐ No ☐

If 'Yes' to (a) ... Please provide details of referee(s)

(b) *Do you have qualifications and/or experience of the methods and procedures proposed? Yes ☐ No ☐

(c) *Please provide details of relevant experience and qualifications.

13. Supplementary Information

Please provide any additional information you may have to support your application.

PLEASE SEE APPENDED METHOD STATEMENT FOR DETAILS OF TRANSLOCATION APPROACH.

14. Data Protection

The data controller is the Natural England, Foss House, Kings Pool, 1-2 Peasholme Green, York, Y01 7PX. You can contact the Natural England Data Protection Manager at: Natural England, County Hall, Spetchley Road, Worcester, WR5 2NP; foi@naturalengland.org.uk

Any questions about how we are using your personal data and your associated rights should be sent to the above contact. The Data Protection Officer responsible for monitoring that Natural England is meeting the requirements of the legislation is: Defra group Data Protection Officer, Department for Environment, Food and Rural Affairs, SW Quarter, 2nd floor, Seacole Block, 2 Marsham Street, London SW1P 4DF. DefraGroupDataProtectionOfficer@defra.gsi.gov.uk

The information on the licence application form and any supporting material will be used by Natural England to undertake our licensing functions. This will include, but is not limited assessing your application, issuing a licence if applicable, monitoring compliance with licence conditions and collating licence returns and reports. The personal information we will process will include, but is not limited to your name and contact details, customer type and reasons for wanting a licence. Processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the data controller. That task is to conduct the licensing functions as delegated by Defra to Natural England under Part 8 Agreement under section 78 of the Natural Environment and Rural Communities Act 2006.

The processing by us of personal data relating to wildlife-related or animal welfare offences or related security measures is carried out only under official authority. This information is used in assessing an application as it is a material fact. Natural England will for particular licence applications and at specific stages of the licencing process discuss your application with third parties. The details of this sharing are set out here
https://www.gov.uk/government/publications/wildlife-licensing-privacy-notice

Your personal data will be kept by us for 7 years after the expiry of your licence or longer if stated in the licence conditions.
Failure to provide this information will mean that we will be unable to assess your application for a wildlife licence.
The information you provide is not connected with individual decision making (making a decision solely by automated means without any human involvement) or profiling (automated processing of personal data to evaluate certain things about an individual).

The data you provide will not be transferred outside the European Economic Area.
A list of your rights under the General Data Protection Regulation, the Data Protection Act 2018, is accessible at:
https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/individual-rights/
You have the right to lodge a complaint with the ICO (supervisory authority) at any time. Should you wish to exercise that right full details are available at:
https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/individual-rights/
Details of our Personal Information Charter can be found at:
https://www.gov.uk/government/organisations/natural-england/about/personal-information-charter.

Important Advice:

- **If your application is made under the Wildlife and Countryside Act 1981 (as amended) or the Conservation of Habitats and Species Regulations 2017, any person who in order to obtain a licence knowingly or recklessly makes a statement or representation, or furnishes a document or information which is false in a material particular, shall be guilty of an offence and may be liable to criminal prosecution. Any person found guilty of such an offence is liable, on summary conviction, to imprisonment for a term not exceeding six months or to a fine not exceeding level 5 on the standard scale, or to both. Regarding other wildlife legislation, we will look to provisions in the Fraud Act 2006 (as amended) in respect of applicants making any false representations.**

- **Natural England or the Secretary of State can modify or revoke at any time any licence that is issued, but this will not be done unless there is good reason for doing so. Any licence that is issued is likely to be revoked immediately if it discovered that false information has been provided that resulted in the issue of a licence.**

15. Declaration

15a. Convictions

* Have you or any person listed in the application been convicted of any wildlife-related or animal welfare offence? Yes ☐ No ☐

If 'Yes': Please provide details of the convictions: *(including dates)*

15b. Applicant Declaration.

☐ I have read and understood the privacy notice above.

- Where required, I undertake to obtain permission from landowners / occupiers of land to exercise any licence resulting from this application, and to allow any employee or representative of Natural England to monitor or inspect the work described in this application.
- I have read and understood the guidance provided in the application form and on the Wildlife Licensing Internet guidance pages. I declare the particulars given are correct to the best of my knowledge and belief.
- I declare the particulars given are correct to the best of my knowledge and belief, and I apply for a licence in accordance with the information I have provided.

☐ I agree to the declaration above.

Signature of Applicant:

For electronic applications, please insert an electronic signature above or tick this box to confirm with the declaration. ☐

Name: *(In BLOCK letters)*

Date:

15c. Ecologist Declaration

☐ I have read and understood the privacy notice above.

- I can confirm that I have visited the site.
- I have designed and inputted into the licence proposal.
- I declare the particulars given are correct to the best of my knowledge and belief.

☐ I agree to the declaration above.

Signature of Ecologist:

For electronic applications, please insert an electronic signature above or tick this box to confirm with the declaration. ☐

Name: *(In BLOCK letters)*

Date:

16. Annex - Application Notes

Applicant

The applicant is the person submitting the application (usually the landowner or occupier) who, if the licence was granted, would become the licensee. The applicant may appoint agents to produce the application pack and act on their behalf. A person with specific skills and knowledge of the species concerned, such as a consultant ecologist, must be appointed to assist in the preparation and the delivery of the proposals that ensure the species protection requirements can be met.

Licensee

The “Licensee” named on the licence is responsible for ensuring that all activities carried out on site in relation to the licence comply with the terms and conditions of the licence. However, all persons authorised to act under the licence must comply with the licence and its conditions (see Regulation 60(1) of the 2017 Regulations). This means that all authorised persons have a responsibility for ensuring that the licence terms and conditions, including any annex special conditions, are understood and complied with. Failure to do so could lead to prosecution.

Consultant/Named Ecologist

The “Named Ecologist” is a professional ecological consultant who has satisfied Natural England that they have the relevant skills, knowledge and experience of the species concerned and is responsible for undertaking and/or overseeing the work undertaken in respect of the licensed species. The ‘Named Ecologist’ has a responsibility for ensuring that the licence is complied with. They are responsible for advising the licensee on the suitability and competence of any Accredited Agents or Assistants employed on site to undertake the required duties and may include the direct supervision of Assistants where appropriate. More information about the experience required to become a name ecologist can be found here: *http://webarchive.nationalarchives.gov.uk/20140605090108/http:/www.naturalengland.org.uk/Images/bat-mitigation-guidance_tcm6-10534.pdf*

Accredited Agent

An “Accredited Agent” is a suitably trained and experienced person who is able to carry out work under a licence without the personal supervision of the Named Ecologist. Any Accredited Agent must be appointed by the Licensee and be in possession of a letter signed by the Licensee confirming their appointment. Agents shall carry a copy of the said letter when acting under the licence and shall produce it to any police or Natural England officer on request. .

Assistants

An “Assistant” is a person assisting a Named Ecologist or Accredited Agent. Assistants are only authorised to act under this licence whilst they are under the direct supervision of either the Named Ecologist or an Accredited Agent.

APPENDIX 2.9.C2: GREAT CRESTED NEWT – UPDATED NON-LICENSABLE METHOD STATEMENT

CONTENTS

TABLES

None Provided.

PLATES

None Provided.

FIGURES

None Provided.

1 INTRODUCTION

1.1 Summary

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. The project is being submitted as a Nationally Significant Infrastructure Project (NSIP).

1.1.2 This updated method statement outlines the key approaches to mitigating potential impacts to the great crested newt (*Triturus cristatus*) populations present within or adjacent to the construction site for the Sizewell C main development site. It will be used by SZC Co. and any relevant subcontractors, in relation to the proposal to build Sizewell C. The first version of this method statement was submitted with the application for development consent in May 2020 (**Volume 2**,**Chapter 14**, **Appendix 14C.9A** of the **Environmental Statement** (**ES**) (Doc Ref. 6.3) [APP-252]). This updated method statement has been produced to take account of new survey data obtained in 2020.

1.1.3 Surveys undertaken in 2020 confirmed that great crested newts were present in two ponds to the west of the site (Ponds 4 and 30). Four ponds within 500m of the site boundary (Ponds 6, 9, 17 and 18) were not surveyed in 2020 due to access restrictions. Great crested newt presence has been assumed within these ponds and therefore they were subject to a Rapid Risk Assessment (RRA). The full results are detailed within the Great Crested Newt Survey Report 2020 (Doc Ref. 6.13) [AS-021].

1.1.4 Any suitable great crested newt habitats within the construction zone, up to 500m from the six ponds listed above, will require Precautionary Working Methods (PWM) to reduce the risk of causing injury/mortality of great crested newt and avoid contravention of the relevant legislation.

1.1.5 All ecological method statements will form part of an appendix to the Construction Environmental Management Plan (CEMP).

1.2 Great Crested Newt Legislation

1.2.1 Great crested newt is listed on Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref. 1) in respect of Section 9, which makes it an offence, inter alia, to:

- Intentionally or recklessly kill, injure or take (handle) a great crested newt;

- Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a great crested newt uses for shelter or protection; or
- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place that it uses for shelter or protection.

1.2.2 The offence "recklessly" was added by the Countryside and Rights of Way Act 2000 (CRoW) (Ref. 2).

1.2.3 Great crested newt receives further protection under Regulation 41 of The Conservation of Habitats and Species Regulations 2017. They are listed on Schedule 2 of the Regulations, which makes it an offence, inter alia, to:

- Deliberately capture, injure or kill a great crested newt;
- Deliberately disturb a great crested newt, in particular any disturbance which is likely:

1.2.4 Impair their ability to:

- Survive, to breed or reproduce, or to rear or nurture their young, or
- Hibernate or migrate
- Significantly affect the local distribution or abundance of great crested newt; or
- Damage or destroy a breeding site or resting place of a great crested newt.

1.2.5 Great crested newt is also included on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref. 3). This Act places a duty upon public bodies to have regard to the purpose of conserving biodiversity within all of their actions. The species listed under Section 41 are 'Species of Principal Importance for the conservation of biodiversity in England' for which conservation steps should be taken or promoted.

2 GREAT CRESTED NEWT BASELINE INFORMATION

2.1 Desk Study

2.1.1 Desk-study data received from the Suffolk Biodiversity Information Service (SBIS) returned no records of great crested newt within the boundaries of the site, given the presence of suitable aquatic and terrestrial habitat within the site, specific presence/ absence surveys were undertaken with respect to great crested newt within the site. The full desk study information is detailed within the **Volume 2**, **Chapter 14**: **Appendix 14A5, Annex 14A5.2** of the **ES** (Doc Ref. 6.03) [APP-233].

2.2 Field Surveys

a) 2007-2016 Surveys

2.2.1 Full details of previous great crested newt surveys are located within the **Volume 2**, **Chapter 14**, **Appendix 14A5** of the **ES** (Doc. Ref. 6.3) [APP-233], however an overview is detailed below.

2.2.2 Great crested newt surveys were carried out between 2007 and 2010 by Wood Group and in 2014 and 2016 by Arcadis Consulting (UK). These surveys all recorded an absence of great crested newts within the site boundary.

2.2.3 The eDNA surveys carried out in 2014 by Arcadis confirmed that great crested newts were present within four offsite ponds within 500m of the boundary, located to the west of the site (Ponds 2, 4, 5 and 30). Great crested newt presence was also recorded in Ponds 55 and 57, however these are located more than 500m from the site boundary.

b) Updated Surveys 2020

2.2.4 Updated eDNA surveys were undertaken by Arcadis in 2020 on 24 waterbodies by licensed surveyor Duncan Sweeting (great crested newt survey licence holder: 2015-16722-CLS-CLS) and accompanied by field assistant Kevin Burgess). All waterbodies surveyed within the MDS boundary resulted in negative eDNA results, confirming that great crested newts were absent from these waterbodies. The full results of the 2020 surveys are detailed in the Great Crested Newt Survey Report 2020 (Doc Ref. 6.13) [AS-021].

2.2.5 Two ponds to the west of the MDS boundary returned positive eDNA results, confirming great crested newt presence in Pond 4 (340m west) and Pond 30 (475m west). Ponds 2 and 5 returned negative results in 2020 (refer to **Figure 1** in **Annex A** for pond locations).

2.2.6 Access was not granted for four waterbodies within 500m of the site boundary in 2020 (Ponds 6, 9, 17 and 18) and these ponds were not surveyed. Ponds 6 and 9 have never been surveyed as part of the SZC project due to access restrictions. Ponds 17 and 18 were surveyed in 2016, where the eDNA results were negative. All of these waterbodies are located towards the west and southwest of the site, the distance and direction of each pond in relation to the site boundary are as follows:

- Pond 6 is located approximately 20m east alongside Abbey Road.
- Pond 9 is located approximately 230m west.
- Pond 17 is located approximately 335m south.
- Pond 18 is located approximately 370m south.

2.2.7 For the purposes on informing mitigation, great crested newts are assumed present within these four ponds as absence cannot be confirmed at this stage. Great crested newts tend to be present within terrestrial habitats at an increasingly low density the further these habitats are from a breeding pond(s), generally occurring within approximately 500m of the relevant pond.

2.3 Rapid Risk Assessment (RRA)

2.3.1 The rapid risk assessment was applied to Ponds 6, 9, 17 and 18 and the calculation assumes that all of the waterbodies support breeding great crested newt, to ensure a 'worst case' assessment. The rapid risk assessment resulted in '*Amber: offence likely*' regarding the risk of harming great crested newt during the proposed works and the same result was obtained when assessing Ponds 6 and 9 separately; '*Green: offence highly unlikely*' was obtained for Ponds 17 and 18, when assessed separately.

2.3.2 As detailed in the Great Crested Newt Survey Report 2020 (Doc Ref. 6.13) [AS-021], Ponds 6, 9, 17 and 18 are located to the west and southwest of the site boundary. It is assumed that great crested newts are present within the four ponds but there appears to be no reason to expect them to move towards the proposed construction area. Movements are likely to be restricted to the suitable terrestrial habitats in closer proximity to these ponds (such as mature woodland blocks) and across the landscape between these ponds.

2.3.3 Following the RRA, it is considered that any impacts from the proposed works are likely to be negligible on great crested newts. PWM are proposed with regards to the construction works within 500m of Ponds 4, 6, 9, 17, 18 and 30 where great crested newts are confirmed or assumed to be present (see **Figure 1** in **Annex A**).

3 PRECAUTIONARY WORKING METHODS (PWM)

3.1 Overview

3.1.1 PWM must be followed to reduce the risk of causing injury/mortality of great crested newts and avoid contravention of the relevant legislation. the Ecological Clerk of Works (ECoW) will oversee and quality-control the implementation of the tasks undertaken by site contractors to facilitate the works.

3.1.2 It should be noted that where PWM are deemed necessary, such measures can only take place during February – November (inclusive) and with weather conditions suitable for the species to be active, and not torpid. Where hibernating or torpid animals are found unexpectedly, best practice methodology will be followed. In the event that a great crested newt is discovered during implementation of PWM, the ECoW will determine whether works can continue in that area.

3.1.3 The biosecurity guidelines in Amphibian Disease Precautions: A Guide for UK Fieldworkers, ARG-UK Note 4 will be followed by all ECoWs and assistants carrying out PWM (Ref. 4).

3.1.4 PMW are intended to render habitats unsuitable for great crested newts (and other non-target species) and remove potential resting places. They are proposed for all habitats within 500m of a great crested newt pond (confirmed and assumed presence), which includes Ponds 4, 6, 9, 17, 18 and 30. However, some habitats (e.g. arable fields) are already maintained in an unsuitable condition for great crested newt and therefore vegetation removal and hand/destructive searches in these areas may not be necessary (providing current management regimes remain until construction begins).

3.2 Toolbox Talk

3.2.1 Before any works commence, all those persons involved with the PWM activity will be briefed by way of a ‘toolbox talk’, given by the ECoW (or a nominated person).

3.2.2 The toolbox talk will include guidance upon: great crested newt identification; what to do should a great crested newt be found; good working practices; mitigation methods and the legal protection granted to great crested newts (refer to **Annex B**). A declaration of understanding will be signed by the site contractors (refer to **Annex C**).

3.3 Vegetation Removal

3.3.1 Any vegetation that is required to be removed to facilitate construction works, will be removed in two phases:

3.3.2 Vegetation within suitable habitats up to 500m from the ponds will be cut to 150mm above ground level and removed from the works footprint. The area will then be left undisturbed for at least 24 hours. Any clearance within 250m of the ponds will be undertaken by hand tools or flail mounted attachments that do not require heavy machinery to be tracked over vegetation, and in conjunction with a hand search (see below for details). Low-pressure vehicles may be used dependent on the ground conditions and at the discretion of a supervising (ECoW).

3.3.3 Where vegetation within 500m of the ponds remains dense, this will be cleared to ground level, with arisings removed. The area will again be left undisturbed for at least 24 hours.

3.3.4 Following at least 24 hours from the second phase of vegetation removal, soil stripping of the 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).

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

3.4 Hand and Destructive Searches

3.4.1 Such activities will only be carried out by an ECoW and in suitable habitats within the works footprint that are situated within 250m from the great crested newt ponds. This activity only applies to a small area within 250m of Pond 6 (refer to **Figure 1** in **Annex A**). Hand searches comprise the dismantling and removal of potential refuges by hand. 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.

3.4.2 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.

3.5 Other Considerations

3.5.1 The measures listed above will need to be undertaken with consideration to nesting birds (March to August, inclusive). Pre-works check for bird nests is required and if an active nest is found, a minimum 4m works exclusion zone will be marked out by the ECoW and vegetation will be retained around the nest until the young have fledged. The period that nests are active for varies between species and can be several months. An estimated time until

completion will be determined by the ECoW and re-inspection(s) will be planned until the young have fledged.

REFERENCES

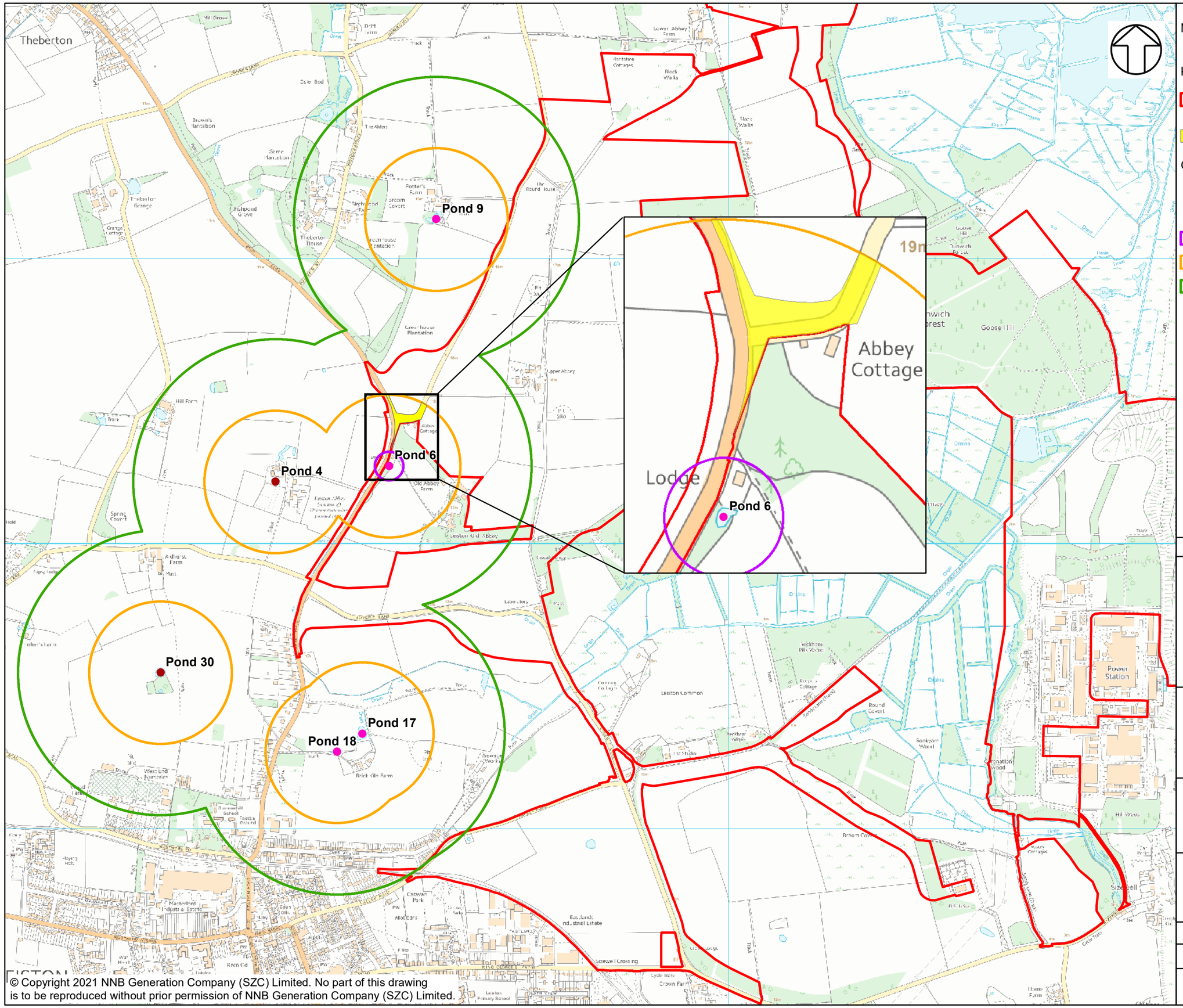
1. Wildlife and Countryside Act, as amended. 1981. (Online) Available from: http://www.legislation.gov.uk/ukpga/1981/69/contents (Accessed 01 September 2020).

2. The Countryside Rights of Way (CRoW) Act. 2000. (Online) Available from: https://www.legislation.gov.uk/ukpga/2000/37/contents (Accessed 01 September 2020).

3. Natural Environment and Rural Communities (NERC) Act. 2006. Section 41: Species of Principal Importance in England. (Online) Available from: http://www.legislation.gov.uk/ukpga/2006/16/section/41 (Accessed 01 September 2020).

4. ARG UK. 2017. Amphibian Disease Precautions: A Guide for UK Fieldworkers, ARG-UK Advice Note 4. (Online) Available from: https://www.arguk.org/info-advice/advice-notes/324-advice-note-4-amphibian-disease-precautions-a-guide-for-uk-fieldworkers-pdf-2/file (Accessed 01 September 2020).

ANNEX A: FIGURE 1: PRECAUTIONARY WORKING METHOD AREAS



NOTES

KEY

- Main Development Site Boundary
- Hand and Destructive Search Area

GCN Ponds:

- Assumed Presence
- Known Presence
- 50m Radii Around GCN Pond
- 250m Radii Around GCN Pond
- 500m Radii Around GCN Pond

NOT PROTECTIVELY MARKED

SizewellC
Doing the power of good for Britain
EDF CGN

DOCUMENT:
ENVIRONMENTAL STATEMENT ADDENDUM
VOLUME 3
APPENDIX 2.9.C2
GREAT CRESTED NEWT - UPDATED NON-LICENSABLE METHOD STATEMENT

DRAWING TITLE:
PRECAUTIONARY WORKING METHOD AREAS

DRAWING NO:
FIGURE 2.9.C2.1

DATE:	DRAWN:	SCALE :	REV:
JAN 2021	R.M.	1:12,500 @A3	01

SCALE BAR
0 0.1 0.2 0.3 0.4 0.5 KM

ANNEX B: TOOLBOX TALK

ANNEX C: DECLARATION OF UNDERSTANDING

Toolbox talk title:	Ecology
Given by:	
Site:	
Date:	

Name	Company	Signature

Name	Company	Signature

APPENDIX 2.9.C3: NATTERJACK TOAD DRAFT LICENCE UPDATE – METHOD STATEMENT PART 1

CONTENTS

TABLES

PLATES

None Provided.

FIGURES

Executive Summary

This updated document (part 1 of a 2 part method statement) has been prepared as part of a European Protected Species licence (for natterjack toad) and to demonstrate that the proposed work would not have a harmful effect on natterjack toads. It includes details of the proposed work, updated surveys conducted in 2020, impact assessment, mitigation, compensation, and a timetable of work being licensed.

SZC Co. is proposing to build a new nuclear power station at Sizewell which, together with a series of associated developments, is referred to as the Sizewell C Project. To facilitate development a substantial amount of construction material will be transported to the site and a number of off-site associated developments are required during construction and long-term operation. A series of Water Management Zones (WMZs) are required during construction of the Sizewell C Project and one of these would be situated within a c. 14.9ha of grazed pasture field known as 'Retsom's Field'. This field is partially situated within the site boundary but wholly within the EDF Energy estate. The works to establish the WMZ are the subject of this method statement and these are the only element of the works which are considered to have the potential to impact natterjack toads.

Retsom's Field, into which natterjack toads were introduced in 2005, contains three ponds; they have bred successfully in one pond (N1) since, with a peak population estimate of between 4 and 32 adults. In 2020, a peak count of 12 adults was recorded. EDF have therefore successfully managed the introduction of natterjack to the site over a 15-year period. Of the other two ponds, one no longer holds water (N2) and the other is yet to be found to support breeding (N3). A further pond (N4), was dug immediately to the north of Retsom's in 2018 by the RSPB. However, as of July 2020, no signs of breeding have been recorded in this pond. Since creation, all ponds have been monitored annually by Suffolk Wildlife Trust and the RSPB.

None of these ponds will be directly affected by the scheme, but temporary loss of foraging habitat within Retsom's Field is required during the approximate 10-year construction phase. After this period, the field will be returned to its original state. Increased light and noise levels during the construction period have the potential to have a negative impact on natterjack foraging, breeding and predation avoidance. It is possible that vegetation and ground clearance activities will cause incidental injury or mortality. There are not anticipated to be any fragmentation or post-development interference impacts.

To avoid killing or injuring any natterjack toads, it is proposed that the WMZ will be ring fenced and a trapping and translocation exercise undertaken. Captured individuals will be release within a safe location adjacent to the breeding pond (N1). Ring fencing will remain *in situ* for the duration of the Water Management Zone operation (10 years).

To compensate for the temporary loss of foraging habitat, it is proposed that a new strategically placed natterjack toad pond is created and that refuges and overwintering opportunities within Retsom's Field are improved and where appropriate created. In addition, the management of the terrestrial habitats in Retsom's Field will be reviewed

and improved to ensure conditions are of maximum value to the natterjack toad population.

1 NATTERJACK TOAD DRAFT LICENCE UPDATE – METHOD STATEMENT PART 1

1.1 Introduction

1.1.1 This updated document (part 1 of a 2 part method statement) has been prepared as part of a European Protected Species licence (for natterjack toad) and to demonstrate that the proposed work would not have a harmful effect on natterjack toads. The original document was provided as **Volume 2**, **Chapter 14**, **Appendix 14C7.B** of the **Environmental Statement** (Doc Ref. 6.3) [APP-252] and is superseded by this version. It includes details of the proposed work, updated surveys conducted in 2020, impact assessment, mitigation, compensation, and a timetable of work being licensed.

1.1.2 Natterjack toads (*Epidalea calamita*) and their habitat are protected under UK and European legislation and are a material consideration when determining applications for development consent Where development is likely to disturb potential natterjack toads and/or their habitat then, under the Conservation of Habitats and Species Regulations 2010 (as amended) which enacts the Habitats Directive into the UK, a licence is required from the Natural England to derogate the terms of this legislation. Before a licence can be granted three tests must be satisfied. This document (which is part 1 of a 2 part document) has been prepared following Natural England's "*Application for a Licence: European Protected Species – Method Statement*" document (reference: WML-A12.2, September 2017) setting out the information required by Natural England to satisfy one of these tests: '*that the action authorised will not be detrimental to the maintenance of the population of the species concerned* [natterjack toad] *at a favourable conservation status in their natural range*'.

1.1.3 This document is presented as a revised method statement and takes into account updated survey results from 2020 and recent discussions held with Natural England's protected species team, including during a meeting held on 20th July 2020. SZC Co. and its consultant ecologists are committed to working with Natural England and other stakeholders to develop further the approaches outlined within this document to ensure a legally robust approach to mitigation for natterjack toads.

1.1.4 The structure of the document and the headings within it follow a defined template as prescribed in.

a) Background to activity/development, include a brief summary of why the activity is necessary

1.1.5 SZC Co. is proposing to build a new nuclear power station at Sizewell in East Suffolk, known as Sizewell C. It would be located on the Suffolk coast, approximately halfway between Felixstowe and Lowestoft; to the north east of the town of Leiston. The power station, together with a series of proposed associated developments, is referred to as the Sizewell C Project. As part of the wider Sizewell C development, a new power station will be constructed at the main development site, adjacent to the existing Sizewell B power station. To facilitate construction of the Sizewell C Project, material will be transported to the site and a number of off-site associated developments are required during construction and long-term operation. The on-site area includes the main platform and associated power station infrastructure and Water Management Zones (WMZs). Off-site areas include marsh harrier compensation land, studio fields complex, Kenton Woods, sports facilities in Leiston, Green Rail Route, Darsham Park and Ride, Wickham Market Park and Ride, Sizewell Link Road, Two Village Bypass, other rail improvements other road improvements including Yoxford Roundabout and the Freight Management Facility.

b) Full details of proposed works on site that are to be covered by the licence

i. e.g. barn/loft conversion to new dwelling, demolition of buildings, construction of factory, extraction of clay, landfilling. etc. Include current status of planning permission (if applicable)

1.1.6 To facilitate the construction of Sizewell C a series of WMZs are required. One of these is required to the north of the scheme within a field known as ‘Retsom’s Field’ (Approximate Centroid Grid Ref: TM 4713 6514). The Field is owned in its entirety by EDF Energy but only partially situated within the Sizewell C DCO boundary. It comprises approximately 14.9ha of grazed pasture that is managed by Suffolk Wildlife Trust (SWT) on behalf of EDF Energy. It also forms part of a larger Environmental Stewardship Agreement with EDF Energy which has been live since November 2013 (Agreement Reference: AG00476432; CPH Number: 360730020) and is recognised Coastal and Floodplain Grazing Marsh on the priority habitat inventory.

1.1.7 Retsom’s Field contains three ponds (named N1, N2 and N3), one of which (N1) supports a breeding population of natterjack toads. All ponds are situated outside of the Sizewell C application boundary, but approximately 3.55ha of suitable foraging habitat will be lost to the WMZ during the construction phase of Sizewell C (10 years).

1.1.8 Only the proposed works associated with the construction of the WMZ within Retsom's Field are of relevance to this licence application. Figure B.2 shows the construction areas relevant to this application.

1.2 Survey and Site Assessment

a) Pre-existing information on the species at the survey site

i. Provide records from local environmental records centres, local wildlife groups, previous survey work by the applicant or others

1.2.1 Desk-study records (within the last 25 years) from the National Biodiversity Network (NBN) database:

- Westleton (TM 452 692) - relates to reintroductions carried out by the RSPB in 1985. Additional reintroductions were started at Mount Pleasant pools, Minsmere in 2005. Situated approximately 3.2km north of the main development site boundary and 4.5km from the Retsom's Field breeding pond (N1).

- Single desk-study record for natterjack toads at Vault Hill, RSPB Minsmere Reserve in 2005; however, this may be an erroneous location as this record is unknown to RSPB staff (RSPB, pers. comm.).

1.2.2 Two ponds (N1 and N2) were created in 2004 at Retsom's Field (see Figures C.4a and C.4b in **Volume 2**, **Appendix 14A8.5** of the **ES** (Doc Ref. 6.3) [APP-244 and APP-245]) by SWT, and tadpoles from existing populations in Norfolk introduced in 2005. Subsequently, only N1 has remained as a successful breeding site. The number of tadpoles counted during SWT surveys and the adult population estimates are shown in **Table 1** (extracted from see **Volume 2**, **Appendix 14A8.5** of the **ES** (Doc Ref. 6.3) [APP-244 and APP-245]). A further pond (N3) was excavated in Retsom's Field in 2015; no natterjack toad sightings have been recorded at this pond to date (SWT, Pers. Comm., Jan 2019). Natterjack toads are also thought to hibernate in rabbit warrens within Retsom's Field (SWT).

1.2.3 In 2018, the RSPB created a new pond/scrape (N4) complex on Minsmere Levels, immediately to the north of Retsom's Field (SWT); however, there has been no signs of breeding in this pond to date.

Table 1: Summary results from SWT natterjack toad surveys – Pond N1

Year	Estimated Natterjack Tadpole Peak Counts	Spawn Strings	Estimate of Female Numbers	Estimate of Adult Population Size
2005	0	-	-	-
2006	0	-	-	-
2007	0	Large number	-	-
2008	3,000		-	-
2009	3,000	16	16	32
2010	2,500	-	-	-
2011	3,000	Present in April and second brood in July	-	-
2012	5,000	8 in April 4-6 strings in July (but no survival)	8[1]	16
2013	5,000	-	-	-
2014	8,000	11-13 in May	13	26
2015	5,000+	Present in May and second brood in July	-	-
2016	3,000	2	2	4
2017	0	0	0	0
2018	15,000	8 in May 6 in June	14[2]	28
2019	10,000	7 in May 3 in July	10	20
2020	1st June: 500 20th July: 600	6 in May 6 in June 3 in July	4 in May 1 in July	60 in June 1 in August

[1] *Assumed to be same females at start and end of breeding season.*

[2] *Assumed to be different females as breeding within one or two months.*

b) Status of species at the local, county and regional levels

1.2.4 Rare. Since extinction in the 1950s and 60s, natterjack toads have been re-introduced in Suffolk at a small number of ponds, including the introduction of the population within Retsom's Field. Adults were recorded within N1

during 2006 and 2007 (despite only tadpoles being introduced in 2005 and natterjack toads typically taking 3-4 years to reach sexual maturity). It is therefore a possibility that the local/Minsmere population is increasing sufficiently to support local recruitment (i.e. the population at Minsmere is a source rather than a sink).

1.2.5 Since the creation of N1, it appears that (subject to natural fluctuation) tadpole peak counts have been steadily increasing but the adult population size has remained relatively constant (the low tadpole peak counts observed in 2020 are discussed further below). It is thus assumed that N1 has reached its adult carrying capacity and/or juvenile survival rate is low, presumably due to a lack of suitable terrestrial opportunities (foraging, resting and/or overwintering) and predation. It can however be seen that, through the creation and maintenance of suitable aquatic and terrestrial habitat, EDF have successfully managed the introduction of natterjack toads to Retsom's Field.

c) Objectives of the survey

i. [e.g. to determine presence/absence of species, species usage of site]

1.2.6 The natterjack toad population within Retsom's Field is monitored annually by SWT and has been since introduction in 2005 (see **Volume 2**, **Appendix 14A8.5** of the **ES** (Doc Ref. 6.3) [APP-244 and APP-245]). The RSPB monitor N4 to the north.

1.2.7 In 2020, Arcadis also monitored the population in N1 along with N2, N3 and N4 on behalf of SZC Co..

d) Scaled plan/map of survey area of appropriate scale and orientation with integral or separate location map at 1:50,000 or 1:25,000 scale. Aerial photographs are also useful

1.2.8 See Figure C.4a (on OS mapping) and C4b (on aerial photography).

e) Site/habitat description (relevant to the species concerned), based on day-time visits. Include annotated photographs if helpful

1.2.9 Retsom's Field comprises approximately 14.9ha of grazed pasture. It has light, sandy soils, relatively heavy sheep grazing pressure and several rabbit warrens, which provide hibernating opportunities (SWT, pers. comm.). Three ponds have been created for natterjack toads within the field as follows:

- N1 (Grid Ref: TM 47136 65112) – created in 2004 and only pond that has successfully supported breeding natterjack toads (to date).

- N2 (Grid Ref: TM 47148 65105) – also created in 2004 but clay lined pond that failed and is now defunct. May however provide terrestrial opportunities within an otherwise structurally poor field.

- N3 (Grid Ref: TM 47350 65191) – created in 2015, this pond is superficially suitable for natterjack toads but as of yet, none have been recorded within it.

1.2.10 Pond N1 is pumped dry in the winter to remove predators and allowed to refill naturally. Images of Retsom's field and the N1 breeding pond are shown in **Table 2**. The location of this field and the ponds are also shown in Figures C.4a and C3.4b.

1.2.11 In the wider area, the RSPB has recently (2018) created N4, a pond/scrape complex on Minsmere Levels, approximately 30m north of Retsom's Field and 265m north east of N1. This pond is separated from Retsom's Field by c. a 3m wide ditch network that support permanent standing water and may inhibit natterjack toad dispersal. Extensive areas of the Coastal and Floodplain Grazing Marsh and Coastal Sand Dunes priority habitats are situated to the north and east of Retsom's Field, providing a continuous corridor of suitable terrestrial habitat that connects the populations within N1 to those within Minsmere, to the north.

Table 2: Images of the site

		
View of N1, currently the only natterjack toad breeding pond with Retsom's Field	View of N2, failed Retsom's Field pond	View of Retsom's Field
		

View of N3 pond within Retsom's Field	View of N4 pond on Minsmere Levels	View of ditch between N3 and N4

f) Field survey(s)

i. Include survey method, timings (day/evening), weather conditions (wind, rain, temperature – tabulated for multiple survey visits), personnel involved (provide individual licence numbers, if held), and equipment used

1.2.12 As presented above, SWT have carried out monitoring surveys (counts of spawn strings, toadlets and adults) (**Volume 2**, **Appendix 14.A8.5** of the **ES** (Doc Ref. 6.3) [APP-244 and APP-245]) of the following:

- N1 (Grid Ref: TM 47136 65112) – annually since 2005
- N2 (Grid Ref: TM 47148 65105) – annually between 2005 and 2007, after which the pond has not held water
- N3 (Grid Ref: TM 47350 65191) – annually since 2015

1.2.13 In 2020, Arcadis undertook natterjack toad surveys of N1 to N4. RSPB has also carried out surveys of pond N4 (Grid Ref: TM 47438 65200), since its creation in 2018.To date, there have been no signs of natterjack toads breeding within this pond.

1.2.14 The survey methodology was in accordance with Natural England (2014) (Ref. 1) and methodologies detailed in Beebee & Denton (1996) (Ref. 2):

- Torchlight surveys (night searches) were undertaken between May and July, between dusk and dawn and on mild or warm nights (10 - 15°C) with preference for survey during or after rain.
- searches for toads under refugia were carried out during the daytime between Spring and Autumn and during mild weather (in hot weather toads spend more time underground).
- spawn string counts were undertaken at least once a week from May to July.
- Systematic terrestrial habitat searches were undertaken of the survey area, working back and forth, undertaking a visual search for suitable habitat looking for toads foraging, hibernation, and burrows areas. Terrestrial habitat searches were undertaken between May and July,

during daylight hours on mild or warm days (10 - 15°C with a preference for survey during or after rain that week), at least once a week and using an endoscope to look into burrows to look for sheltering toads.

1.2.15 The age of captured animals (by measuring them) was assessed and the following parameters were also recorded: weather data at site; animal sex; stage of life; number (tadpoles, spawn strings, etc.); snout-vent length (SVL) measurements; photograph (avoiding females spawning and males in amplexus); and location.

1.2.16 Surveys on site commenced in early May 2020. Due to land access restrictions and the need for dynamic workings due to the COVID-19 pandemic, the initial April 2020 survey start date was delayed.

1.2.17 Give the access notification periods required, surveys were undertaken on pre-arranged dates and so surveys could not always be undertaken during optimum weather conditions. This may account for the lack of natterjack toads encountered during the surveys between late May-June.

g) Survey results

i. Summarise findings in table form (if appropriate); provide clear, annotated and cross-referenced maps/plans/photographs. Raw data to be appended

1.2.18 The headline results from SWT are presented in **Section 1.2**. The raw data is presented in **Table 1**, extracted from SWT (see **Volume 2**, **Appendix 14A8.5** of the **ES** (Doc Ref. 6.3) [APP-244 and APP-245]) and personal communication with SWT for the 2019 and 2020 data.

1.2.19 A summary of the Arcadis' 2020 survey is presented in **Table 3**; raw data is also presented in **Annex A**. The raw data tables also include the exact number of adult natterjack toads encountered during the surveys as well as measurements taken.

Table 3: Summary results from Arcadis 2020 natterjack toad surveys

Pond	Estimated natterjack tadpole peak counts	Spawn strings	Estimate of female numbers	Estimate of adult population size
N1	600-800	5 in May 1 in June/July[1]	6	12[2]
N2	0	0	0	0
N3	0	0	0	0
N4	0	0	0	0

[1] The spawn string in June/July was not recorded and is based on the presence of tadpoles. Female count assumes May and June/July spawn strings are from different females as breeding within one or two months.

[2] 5 of the male adults that were recorded within N1 on 14th July were the same individuals recorded on 21st May.

h) Interpretation/evaluation of survey results

i. Provide count/estimate of species numbers, status and significance of population, constraints on survey (e.g. time of year, cold weather, access problems – justify as necessary)

1.2.20 The estimate of the adult population was determined by the sighting of six adult male natterjack toads and the presence of five spawn strings recorded in May which would have been produced by five individual females and tadpoles recorded in June/July which would have been the result of another individual female producing a spawn string as these breeding accounts were within one-two months of each other.

1.2.21 As discussed in C.2, it appears that (subject to natural fluctuation) tadpole peak counts within N1 have increased steadily but the adult population size has remained relatively constant. The indicative adult population size for 2020 is estimated at around 12 adult natterjack toads and it is possible (though improbable) that the population within Retsom's Field has some genetic interchange with the natterjack toads present within the Minsmere Estate which was introduced initially into shallow ditches and heathland areas of the reserve in 1985. It is assessed that the population is of national significance.

1.2.22 It should be noted that, with the exception of years where breeding has failed (2006-2007 and 2017) the tadpole peak count observed by Arcadis in 2020 were the lowest since recording began. This has been attributed to corvid predation that was recorded this year. N1 is surrounded by stock proof fencing and the supporting posts provided perch locations. It is unclear why the impacts of corvid on tadpoles were so severe in 2020 (this factor had not been noted in previous years) but measures are being explored to prevent this for 2021 which may include netting.

1.2.23 Given the survey results the following site assessment status has been concluded, presented in **Table 4.**

Table 4: Site assessment status results

	Level of significance
Quantitative	Minor importance – small population
Qualitative	High – natterjack toads are recorded breeding on site
Functional	Minor importance – population completely isolated
Contextual	Major importance – the natterjack toads present within Retsom's Field are the only known population known locally

1.2.24 It is assessed that the population is of national significance.

1.2.25 Given the fifteen years of survey data available, it is considered that there are no outlying constraints to the value of the data.

1.2.26 Retsom's Field forms part of the Sizewell Levels and Associated Areas County Wildlife Site (CWS); however, natterjack toad is not cited as an interest feature.

1.3 Impact assessment in absence of mitigation. Likely impacts of the development on natterjack toads

a) Short-term impacts: disturbance

1.3.1 Increases in light, noise and visual disturbance from construction activities could affect the population of natterjack toads within Retsom's Field by reducing patch quality for foraging and decreasing breeding efficiency by masking mating calls.

1.3.2 Vegetation and ground clearance activities prior to construction of the WMZ have the potential to cause incidental injury or mortality to natterjack toads. Note that the construction footprint of the WMZ has been specifically altered to avoid impacts to breeding habitat (i.e. N1) and hibernation sites (i.e. the rabbit warrens) within Retsom's Field.

b) Long-term impacts: habitat loss or modification

i. Impact on species population(s) to be taken into account at local, regional and national levels. Note that impacts can be positive or negative as this is in absence of mitigation

1.3.3 Development requires the temporary loss of approximately 3.55ha of suitable foraging habitat (c. 24% of the total area) within Retsom's Field. The habitat loss, though temporary, would last for up to ten years throughout construction. After this period, the field will be returned to its original state.

1.3.4 The following impacts have been discounted as follows:

1.3.5 Aquatic habitat would not be affected. N1 is situated approximately 45m north of the WMZ development area.

1.3.6 The WMZ has been located to avoid impacts on the few features that provide structural diversity (and thus resting and hibernation opportunities) within Retsom's Field. These include several rabbit warrens and the now-defunct N2.

1.3.7 N1 is a lined pond and the sandy nature of Retsom's Field means that impacts from construction related changes to hydrology can be discounted.

c) Long-term impacts: fragmentation and isolation

1.3.8 None anticipated. The works will not separate the population from other populations or suitable foraging resources.

d) Post-development interference impacts

1.3.9 None anticipated.

e) Predicted scale of impact on species status at the site, local county and regional levels

1.3.10 Predicted low impact from temporary loss of foraging resource at a site (and thus local) level, in the absence of mitigation. No perceived impact at regional level.

REFERENCES

1. Natural England. 2014. Standing advice for local planning authorities who need to assess the impacts of development on natterjack toads. Available from: https://www.gov.uk/guidance/natterjack-toads-protection-surveys-and-licences

2. Beebee, T. & Denton, J. 1996. Natterjack toad conservation handbook. English Nature

ANNEX A: RAW SURVEY DATA

Table A.1: Summary results for SWT natterjack toad surveys – Pond N1 (extracted from Volume 2, Appendix 14A8.5 of the ES (Doc Ref. 6.3) [APP-244 and APP-245])

Year	Estimated Natterjack Tadpole Peak Counts	Adults Seen	Spawn Strings	Toadlets
2005	All the tadpoles disappeared from the pond with the butyl liner			
2006	The clay lined pond was damaged and all tadpoles killed.	1		
2007		Males seen and heard	Large number	Some
2008	3,000			
2009	3,000		16	A number
2010	2,500			None known to have emerged
2011	3,000		First strings in April. Second spawning in late July	Toadlets emerged
2012	5,000		8 in April 4-6 strings in July (but no survival)	
2013	5,000	Toads seen mating		A good number
2014	6-8,000 (more likely 10,000+)		11-13 in May	200+ June/July
2015	5,000+		First strings seen in May. Second brood of strings in July	200+
2016	2,500-3,000	2 adult couplings seen	2	Minimum of 450
2017	0	Single juvenile / small adult (2.5" long)	0	
2018	15,000 (conservative estimate)	Single	8 in May 6 in June	300-500
2019	10,000 in May	Four adults in pond on 3rd May	7 in May 3 in July	Several hundreds in May

Year	Estimated Natterjack Tadpole Peak Counts	Adults Seen	Spawn Strings	Toadlets
		Torch-surveys in mid-June found adults utilising the rabbit warren burrows up to 30+ metres SW of the pond		A few hundred in July
2020	1st June: 500 20th July: 600	2 in amplexus (during daytime) and 5 males, 1 female (during night-time) in May, including one individual recorded within rabbit warrens alongside N1. 6 males in June, including the same individual in the rabbit warren recorded in May 3 males in July, including one individual within Retsom's field south of N1.	4 in May 1 in July	60 in June 1 in August

Table A.2: Pond N1 2020 survey results

		Methods:	Terrestrial habitat searches, refugia search and torchlight searches				Spawn strings	Comments
No. of survey visits to this pond: 9								
		Sex/life stage:	Male	Female	Metamorphs	Tadpoles		
(1) Date: 21.05.2020	Air temp		6	1	0	0	5	
	16.2-17°C	Adult totals:	7					
(2) Date: 29.05.2020	Air temp		0	0	0	600-800	0	
	21.1°C	Adult totals:	0					
(3) Date: 01.06.2020	Air temp		0	0	0	500-700	0	
	14.1°C	Adult totals:	0					
(4) Date: 08.06.2020	Air temp		0	0	0	400-600	0	
	21.1°C	Adult totals:	0					
(5) Date: 15.06.2020	Air temp		0	0	0	200-400	0	
	13.1°C	Adult totals:	0					
(6) Date: 22.06.2020	Air temp		0	0	200	150-200	0	Metamorphs leaving the pond were being attacked by corvids and ants.
	16.2°C	Adult totals:	0					
(7) Date: 29.06.2020	Air temp		0	0	0	0	0	
	11.8°C	Adult totals:	0					
(8) Date: 06.07.2020	Air temp		0	0	0	0	0	
	13.8°C	Adult totals:	0					
(9) Date: 14.07.2020	Air temp		5	0	0	150-200	0	Five male adults in Pond calling 22.45hrs onwards all recaptures from 21st May 2020. All animals absent from pond at dawn (except tadpoles).
	14.1°C	Adult totals:	5					

		Methods:	Terrestrial habitat searches, refugia search and torchlight searches	Spawn strings	Comments
No. of survey visits to this pond:	9				
Peak adult count for this pond in any one visit			**7**		
Comments and constraints:	Additional spawn string in July was not identified before recording of 150-200 tadpoles that month. Captured SVL: Male EcA – 71mm (recapture form 21.05.2020) Male EcB – 67mm (recapture from 21.05.2020) Male EcC – 68mm (recapture from 21.05.2020) Male EcD – 76mm (recapture from 21.05.2020) Male EcE – 82mm (recapture from 21.05.2020)				

Table A.3: Pond N2 2020 survey results

		Methods:	Terrestrial habitat searches, refugia search and torchlight searches					Spawn strings	Comments
No. of survey visits to this pond:	9								
		Sex/life stage:	Male	Female	Metamorphs	Tadpoles			
(1) Date: 21.05.2020	Air temp		0	0	0	0	0	Pond dry	
	16.2-17°C	Adult totals:	0						
(2) Date: 29.05.2020	Air temp		0	0		0	0	Pond dry	
	21.1°C	Adult totals:	0						
(3) Date: 01.06.2020	Air temp		0	0	0	0	0	Pond dry	
	14.1°C	Adult totals:	0						
(4) Date: 08.06.2020	Air temp		0	0	0	0	0	Pond dry	
	21.1°C	Adult totals:	0						
(5) Date: 15.06.2020	Air temp		0	0	0	0	0	Pond dry	
	13.1°C	Adult totals:	0						
(6) Date: 22.06.2020	Air temp		0	0	0	0	0	Pond dry	
	16.2°C	Adult totals:	0						
(7) Date: 29.06.2020	Air temp		0	0	0	0	0	Pond dry	
	11.8°C	Adult totals:	0						
(8) Date: 06.07.2020	Air temp		0	0	0	0	0	Pond dry	
	13.8°C	Adult totals:	0						
(9) Date: 14.07.2020	Air temp		0	0	0	0	0	Pond dry	
	14.1°C	Adult totals:							
Peak adult count for this pond in any one visit							0		
Comments and constraints:									

Table A.4: Pond N3 2020 survey results

		Methods:	Terrestrial habitat searches, refugia search and torchlight searches				Spawn strings	Comments
No. of survey visits to this pond:	9							
		Sex/life stage:	Male	Female	Metamorphs	Tadpoles	5	Common toad (*Bufo bufo*) recorded nearby.
(1) Date: 21.05.2020	Air temp		0	0	0	0		
	16.2-17°C	Adult totals:	0					
(2) Date: 29.05.2020	Air temp		0	0	0	0	0	
	21.1°C	Adult totals:	0					
(3) Date: 01.06.2020	Air temp		0	0	0	0	0	
	14.1°C	Adult totals:	0					
(4) Date: 08.06.2020	Air temp		0	0	0	0	0	
	21.1°C	Adult totals:	0					
(5) Date: 15.06.2020	Air temp		0	0	0	0	0	Pond water level 18cm
	13.1°C	Adult totals:	0					
(6) Date: 22.06.2020	Air temp		0	0	0	0	0	Pond water level 10cm
	16.2°C	Adult totals:	0					
(7) Date: 29.06.2020	Air temp		0	0	0	0	0	Pond water level 8cm
	11.8°C	Adult totals:	0					
(8) Date: 06.07.2020	Air temp		0	0	0	0	0	Pond water level 7cm
	13.8°C	Adult totals:	0					
(9) Date: 14.07.2020	Air temp		0	0	0	0	0	Pond water level 4cm

		Methods:	Terrestrial habitat searches, refugia search and torchlight searches	Spawn strings	Comments
No. of survey visits to this pond:	9				
	14.1°C	Adult totals:			
Peak adult count for this pond in any one visit		0			
Comments and constraints:					

Table A.5: Pond N4 2020 survey results

			Methods:	Terrestrial habitat searches, refugia search and torchlight searches				Spawn strings	Comments
No. of survey visits to this pond:		9							
		Sex/life stage:		Male	Female	Metamorphs	Tadpoles	0	Common toad recorded nearby.
(1) Date: 21.05.2020	Air temp		0	0	0	0			
	16.2-17°C	Adult totals:	0						
(2) Date: 29.05.2020	Air temp		0	0	0	0	0		
	21.1°C	Adult totals:	0						
(3) Date: 01.06.2020	Air temp		0	0	0	0	0		
	14.1°C	Adult totals:	0						
(4) Date: 08.06.2020	Air temp		0	0	0	0	0		
	21.1°C	Adult totals:	0						
(5) Date: 15.06.2020	Air temp		0	0	0	0	0		
	13.1°C	Adult totals:	0						
(6) Date: 22.06.2020	Air temp		0	0	0	0	0		
	16.2°C	Adult totals:	0						

			Methods:	Terrestrial habitat searches, refugia search and torchlight searches					Spawn strings	Comments
No. of survey visits to this pond:		9								
(7) Date: 29.06.2020	Air temp		0	0	0	0	0			
	11.8°C	Adult totals:	0							
(8) Date: 06.07.2020	Air temp		0	0	0	0	0			
	13.8°C	Adult totals:	0							
(9) Date: 14.07.2020	Air temp		0	0	0	0	0			
	14.1°C	Adult totals:								
Peak adult count for this pond in any one visit			0							
Comments and constraints:										

ANNEX B : FIGURES

B.1. Figure B.2: The construction areas for the proposed SZC development site.

B.2. Figure C.4a: The location of the natterjack toad breeding ponds in Retsom's Field (OS mapping).

B.3. Figure C.4b: The location of the natterjack toad breeding ponds in Retsom's Field (satellite imagery).

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- RETSOM'S FIELD BOUNDARY
- EXISTING NATTERJACK TOAD PONDS
- WATER MANAGEMENT ZONE

NOT PROTECTIVELY MARKED

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DOCUMENT:
ENVIRONMENTAL STATEMENT ADDENDUM
VOLUME 3
APPENDIX 2.9.C3
NATTERJACK TOAD DRAFT LICENCE UPDATE - METHOD STATEMENT PART 1

DRAWING TITLE:
FIGURE B.2: THE CONSTRUCTION AREAS FOR THE PROPOSED SZC DEVELOPMENT SITE

DRAWING NO:
FIGURE 14C7B.1

DATE:	DRAWN:	SCALE :
JAN 2020	P.N.	1:2,000 @A3

SCALE BAR
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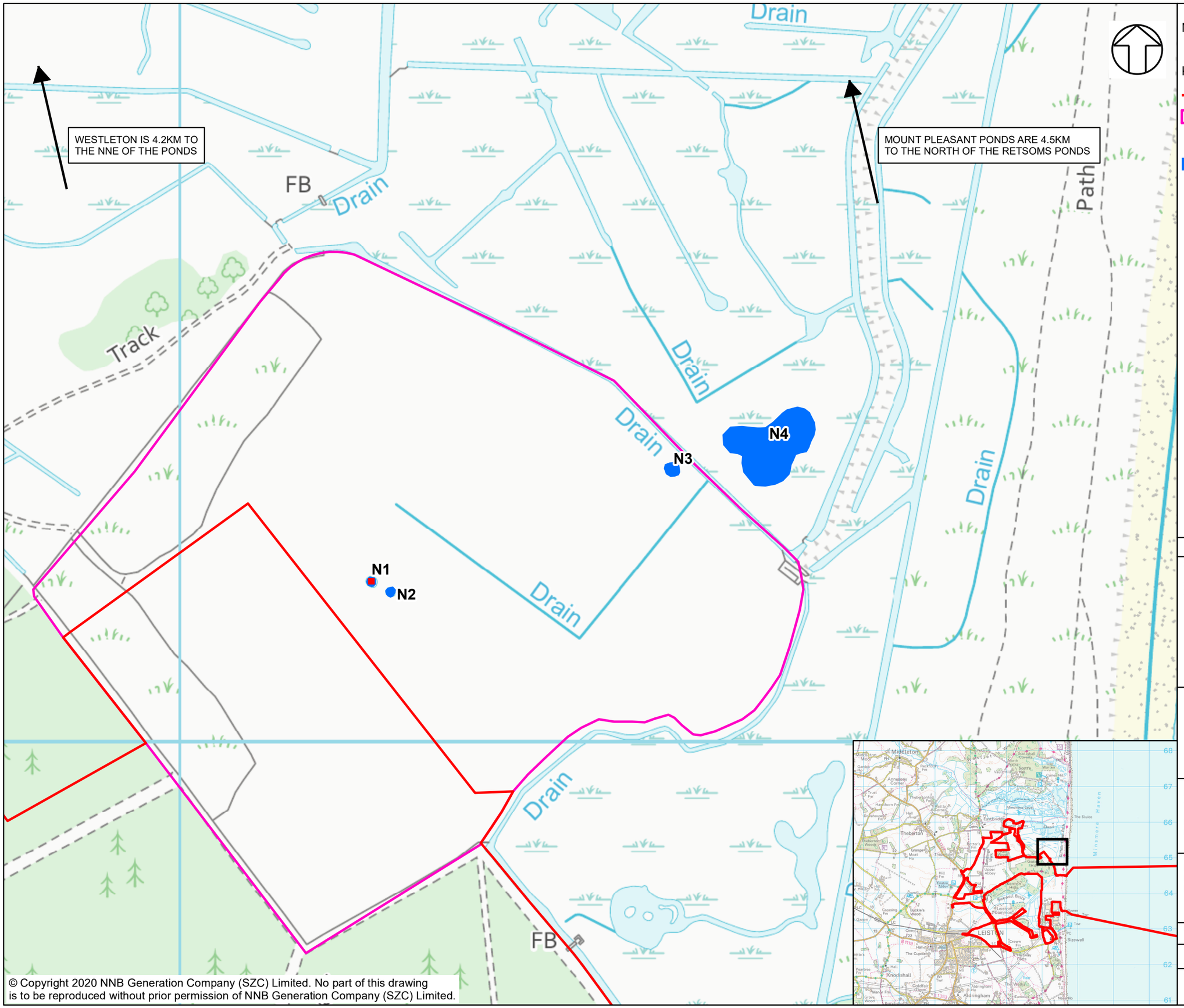
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- RETSOM'S FIELD BOUNDARY
- LOCATION OF EXISTING NATTERJACK BREEDING POND
- LOCATIONS OF EXISTING NATTERJACK POND

NOT PROTECTIVELY MARKED

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APPENDIX 2.9.C3
NATTERJACK TOAD DRAFT LICENCE UPDATE - METHOD STATEMENT PART 1

DRAWING TITLE:
FIGURE C4C: THE LOCATION OF THE NATTERJACK TOAD BREEDING PONDS IN RETSOM'S FIELD (OS MAPPING)

DRAWING NO:
FIGURE 14C7B.2

DATE:	DRAWN:	SCALE :
JAN 2020	P.S.	1:2,500 @A3

SCALE BAR
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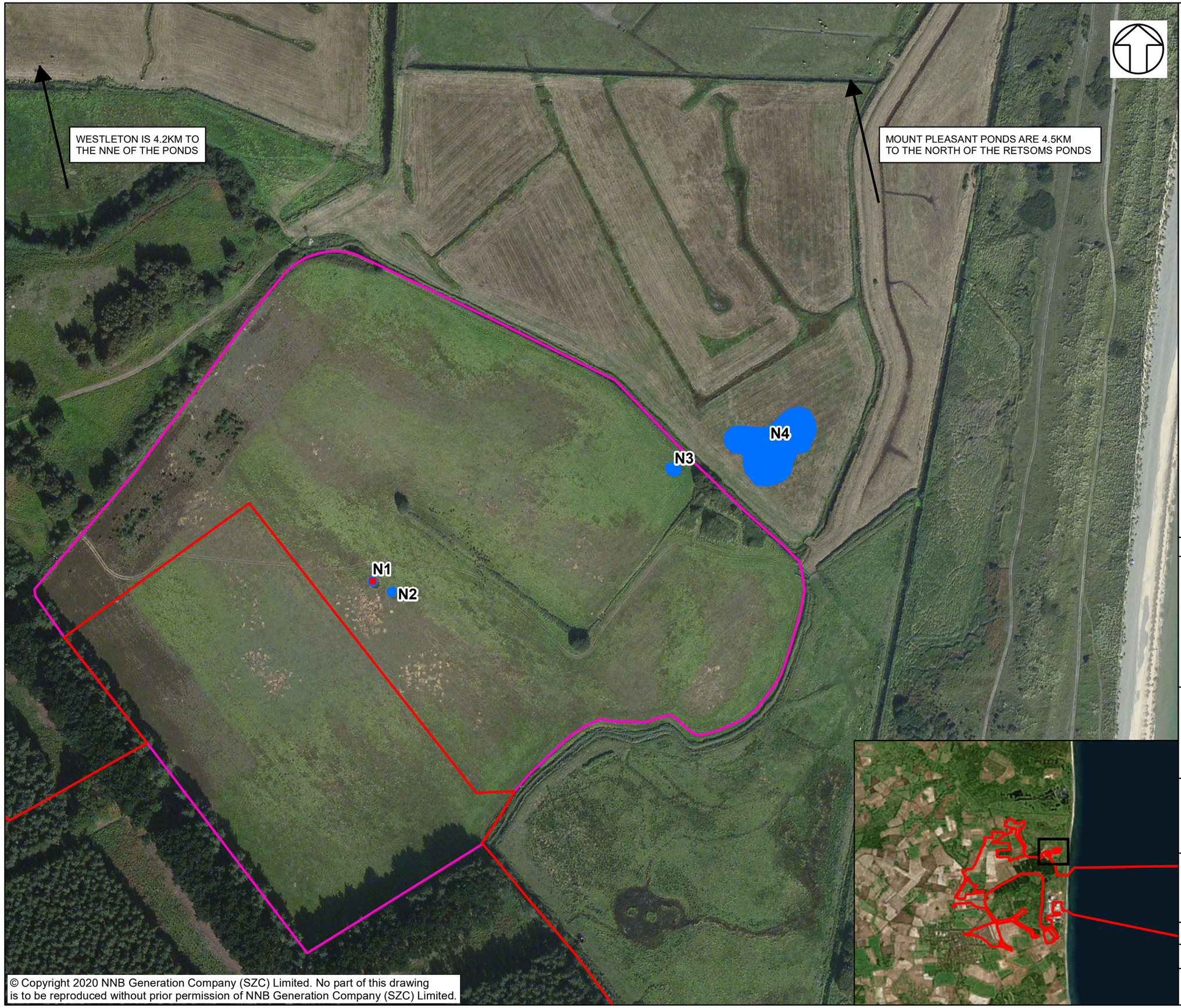

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- RETSOM'S FIELD BOUNDARY
- LOCATION OF EXISTING NATTERJACK BREEDING POND
- LOCATIONS OF EXISTING NATTERJACK POND

NOT PROTECTIVELY MARKED

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DOCUMENT:
ENVIRONMENTAL STATEMENT ADDENDUM
VOLUME 3
APPENDIX 2.9.C3
NATTERJACK TOAD DRAFT LICENCE UPDATE - METHOD STATEMENT PART 1

DRAWING TITLE:
FIGURE C4B: THE LOCATION OF THE NATTERJACK TOAD BREEDING PONDS IN RETSOM'S FIELD (SATELLITE IMAGERY)

DRAWING NO:
FIGURE 14C7B.3

DATE:	DRAWN:	SCALE :
JAN 2020	P.S.	1:2,500 @A3

SCALE BAR

0 20 40 60 80 100 M

APPENDIX 2.9.C4: NATTERJACK TOAD DRAFT LICENCE UPDATE – METHOD STATEMENT PART 2

CONTENTS

TABLES

None Provided.

PLATES

None Provided.

FIGURES

Figure 14C7B.4 B Mitigation

Figure 14C7B.5 C Habitat Creation

1 NATTERJACK TOAD DRAFT LICENCE UPDATE – METHOD STATEMENT PART 2

1.1 Mitigation and Compensation

1.1.1 This updated document (part 2 of a 2 part method statement) has been prepared as part of a European Protected Species licence (for natterjack toad) and to demonstrate that the proposed work would not have a harmful effect on natterjack toads. The original document was provided as **Volume 2, Chapter 14, Appendix 14C7B** of the **Environmental Statement** (Doc Ref. 6.3) [APP-252] and is superseded by this version.

1.1.2 This document is presented as revised method statement and takes into account updated survey results from 2020 and recent discussions held with Natural England's protected species team, including during a meeting held on 20th July 2020. SZC Co. and its consultant ecologists are committed to working with Natural England and other stakeholders to develop further the approaches outlined within this document to ensure a legally robust approach to mitigation for natterjack toads.

1.1.3 The structure of the document and the headings within it follow a defined template as prescribed in Natterjack toads: mitigation licence application form (A44).

1.2 Summary of mitigation strategy

a) Overview of how the impacts will be addressed in order to ensure no detriment to the maintenance of the population at a favourable conservation status. To include a scaled map or plan that can be compared with the proposals on the survey results plan.

1.2.1 To avoid killing or injuring any natterjack toads (NJT), the area of the Water Management Zone (WMZ) will be ring fenced and a trapping and translocation exercise undertaken from within the exclusion fencing. Captured individuals will be released within a safe retained location adjacent to the breeding pond (N1). Ring fencing will remain *in situ* to prevent NJT accessing the WMZ for the duration of its operation (10 years).

1.2.2 Construction of the WMZ will be undertaken during daylight hours and any lighting required (during construction and operation) will follow best practice to minimise disturbance and sky-glow off site and particularly towards Retsom's Field. It is unlikely that operational lighting would be required for the WMZ although this would be determined by detailed design.

1.2.3 The precise extent of the WMZ is to be determined by ongoing water management studies but the design will be cognisant of the locations of the

rabbit warrens within the area, which are close to the breeding pond, and are used as hibernation sites by the natterjack toads. The design layout of the WMZ is likely to exclude the majority of the rabbit warrens and buffer zones (see Figure B below), but whether all of these can be excluded requires further development of the water management work and detailed design.

1.2.4 To compensate for the temporary loss of foraging habitat, it is proposed that a new strategically placed NJT pond is created and that refuge and overwintering opportunities within Retsom's Field are improved. A long-term terrestrial enhancement schedule is proposed which could include creation of sand banks, scrapes and heather patches. These will be developed in response to initial interventions. Additionally, a land bridge linking pond N3 in Retsoms field and N4 in Minsmere could be installed if other habitat provisions do not lead to sufficient recruitment at N4.

1.3 Works to be undertaken by the ecologist or suitably experienced person

a) Capture and exclusion (if applicable)

i. Timings, effort, methods to be employed, care of species, release sites etc. Include diagrams and photographs to show capture/exclusion apparatus if non-standard techniques are proposed. Include map to show location of capture and exclusion activities.

1.3.1 Amphibian exclusion fencing (as per Figure 4 of the English Nature 2001 Great Crested Newt Mitigation Guidelines (GCNMG)) will be installed around the perimeter of the working area of the WMZ within Retsom's Field to exclude and demarcate the trapping and translocation area. 'Permanent' type fencing is proposed as the fencing will remain *in situ* for c. 10 years. The trapping and translocation area will then be compartmentalised with temporary amphibian proof fencing in order to increase capture effort. Pitfall traps will be installed on the inside of perimeter fencing and both sides of internal fencing to ensure a trapping density of 100 traps per hectare. Carpet tiles will also be placed between alternate pitfall traps (i.e. at a density of 50 per hectare.) and adjacent to N1 to act as sheltering habitat that can be easily checked for translocation.

1.3.2 Pitfall traps and carpet tiles will be checked daily before 11am and fencing will also be walked at night by torchlight to search for natterjack toads. Any individuals encountered will be translocated to the receptor site adjacent to N1. This process will continue for a minimum of 30 consecutive days/nights and until 5 clear nights of no capture is observed. Following which, internal fencing will be removed, and development works would proceed within. With the exception of an access track to the south, perimeter fencing will

remain in situ for the duration of the use of WMZ (10 years). During this time, it will be maintained to ensure that it remains amphibian-proof.

1.3.3 Fence installation and removal will be overseen by an Ecological Clerk of Works (ECoW).

1.3.4 Figure B illustrates the approximate location of perimeter fencing, temporary internal fencing, the receptor site and rabbit warrens (including 10m buffer zones). The warren locations are based on available data and may change in size and extent. Therefore, whilst works within any extension to warren buffer zones will be avoided where possible it cannot be guaranteed.

1.4 Works to be undertaken by the Developer/Landowner

a) Habitat creation

i. *In-situ* retention of breeding sites/resting places – providing details of proposed works. Explain how the breeding sites/resting places will be retained. Any enhancements to habitat should also be detailed.

1.4.1 Due to the success and active management already in place at N1 it is not proposed that this pond or the adjacent defunct N2 (which may provide terrestrial opportunities) are enhanced as part of these works. Breeding and resting sites (i.e. rabbit warrens and N2) will be safeguarded from the proposed WMZ works by the installation of amphibian proof fencing.

ii. Modification of existing breeding site/ resting places - dimension details, scale drawings of the proposals.

1.4.2 None proposed.

iii. New breeding site/resting place creation – dimension details, location details, materials to be used (where applicable), aspect etc.

1.4.3 It is proposed that development is used as an opportunity to supplement natterjack toad conservation efforts by:

- Creating a new pond/scrape (N5). Subject to agreement with Natural England and other relevant stakeholders, the proposed pond would be strategically placed centrally between N1 and N3 with the aim of providing a stepping stone to aid with colonisation of N3 and N4. It would have a surface area of approximately 150m^2 and mimic N1 in terms of creation, comprising a butyl liner with very gently sloping sides (1:10) dug down to a maximum water depth of 50-70 cm. The slope of the pond basin would have a wide drawdown zone and an almost

imperceptible edge. The scrape will be pumped dry in late summer and allowed to naturally fill in winter

- Subject to agreement with Natural England and other relevant stakeholders, a linear mound feature comprising sand and stone would be created adjacent to N5 that will, in the short term increase terrestrial opportunities (resting and overwintering) and increase connectivity between N1 and N3/N4. In the long term this feature should aid rabbit warren excavation and further increase overwintering opportunities.
- Further enhancements, such as sand bank, scrape and heather patch creation, could improve habitats in the longer term.
- A land bridge between N3 in Retsoms field and N4 in Minsmere could be installed if other habitat provisions do not lead to sufficient recruitment at N4.

1.4.4 Figure C illustrates the approximate location of these features.

iv. Scaled maps/plans to show proposals/mitigation outlined above in relation to existing and proposed habitat features.

1.4.5 Please see Figures B and C.

1.5 Post-development site safeguard

a) Habitat/site management and maintenance

i. To include details of what will be done in terms of habitat management and site maintenance required to ensure long-term security of affected population. Include details of site/structure ownership, and who will be responsible for undertaking the work and who is responsible for funding.

1.5.1 It is proposed that the management regime of the remainder of Retsom's Field (i.e. outside of the WMZ construction area) continues as present (i.e. with sheep grazing). N5 will be drained down annually in late summer and allowed to fill naturally over winter (as practiced with N1). After c. 10 years the WMZ would be removed and this section of Retsom's Field will be returned to grazed pasture. EDF Energy own and will continue to own Retsom's Field and will be responsible for funding and ensuring the work is undertaken.

b) Population monitoring

i. To include details of monitoring effort and timing.

1.5.2 N5 will be monitored annually along with N1 and N3 (it is also assumed that the RSPB will continue to monitor N4; however, monitoring of this pond is

not proposed as part of this licence) for the duration of WMZ operation (c. 10 years). Thereafter, monitoring will continue biannually for 6 years (i.e. 3 years of surveys).

c) Mechanism for ensuring delivery of post-development works

i. e.g. Section 106 Agreement, to include details of who will undertake the population monitoring, habitat management and site maintenance work and reporting details, other covenants or contractual agreements.

1.5.3 Works to be secured by requirement within Development Consent Order (DCO).

1.6 Land ownership

1.6.1 Mitigation site(s) (area(s) where any works will be done to offset development impacts, including development plot if applicable). If the mitigation site is not owned by the applicant, you must have consent from the relevant land owner(s). You must have also secured details of how any measures to maintain the population in the long term will be achieved (e.g. a legal agreement).

a) Mitigation site ownership

i. Please provide details of who owns the land where mitigation is proposed.

1.6.2 SZC Co. / the applicant.

b) E.2 Declaration Statement(s)

1.6.3 Please include the following declarations within your method statement and highlight the appropriate answer – applications that do not include these 3 declarations will result in a 'further information request' response.

I confirm that relevant landowner consent/s has/have been granted to accept the European protected species onto land outside the applicant's ownership	Not applicable
I confirm that landownership consent/s has/have been granted to allow the creation of the proposed habitat compensation on land outside the applicant's ownership	Not applicable
I confirm that consent/s has/have been granted by the relevant landowner/s for monitoring and	Not applicable

maintenance purposes on land outside the applicant's ownership

1.6.4 Unsecured consents statement: If you have been unable to secure consents for any of the three declarations please explain why and detail any plans you have in place to obtain the consent(s) or provide details of any right(s) or agreement(s) that will enable the lawful implementation of the proposed mitigation, compensation and monitoring. Important Note: Failure to provide the appropriate landowner consents means that the method statement is unlikely to meet the requirements for the FCS test to be met. It is therefore in your interest to ensure that the appropriate consents have been secured before applying for a licence.

1.7 Timetable of works

a) A diagram to include timings of all capture, exclusion, mitigation and construction works.

Pre, mid and post-development (other than monitoring, management and maintenance)		
Activity	**Timing**	**Comments**
Receptor site pond creation	TBC	N5 to be created under non licenced method statement in winter 20XX/XX.
Receptor site pond enhancement or restoration	TBC	
Receptor site terrestrial habitat works - general e.g. reseeding, hedge planting	TBC	A linear mound feature would be created comprising sand and stone under a non-licensed method statement in winter 20XX/XX. Further enhancements, such as sand banks, scrapes and heather patches could be installed in the long term.
Receptor site terrestrial habitat works - features e.g. hibernacula, refuges	TBC	Carpet tiles to be placed adjacent to N1 a minimum of 21 days prior to translation.
Construction of permanent fences/walls	N/A	'Permanent' amphibian proof parameter/ring fencing, installed as part of translocation, to remain in situ for lifecycle of water management zone.
Construction of underpass/tunnel/culvert (and installation of 'guide' fencing)	N/A	
Amphibian fence installation (to include drift or ring fencing if applicable – specify which)	TBC	'Permanent' amphibian proof perimeter fencing, installed as part of translocation, to remain in situ for lifecycle of water management zone. Internal 'drift' fencing, to

Pre, mid and post-development (other than monitoring, management and maintenance)		
Activity	**Timing**	**Comments**
		compartmentalise trapping area, to be removed on completion of trapping exercise.
Amphibian capture (pitfall trapping etc - outside hibernation/dormancy periods only)	TBC	30 day trapping period with 5 clear consecutive trapping nights to commence on installation of amphibian proof fencing mmm-yyyy to mmm-yyyy.
Pond draining and pond destruction (please indicate when each will occur)	TBC	
Hand searches	TBC	Hand searched (as/if required) to be carried out by the named ecologist or accredited agent prior to fence installation and during above trapping period.
Destructive searches (following completion of all other capture efforts)	TBC	If required, on completion of the 30 day trapping period (with 5 clear consecutive trapping nights).
Construction period (start and end dates)	TBC	Construction with water management zone will not commence until completion of 30 day trapping period.
Site checks & maintenance during construction	TBC	Weekly (during March to September) or monthly (during October to February) visits to be undertaken by named ecologist or accredited agent throughout construction period, to check the amphibian fence is intact.
Drift fence removal (not to be undertaken during hibernation/dormancy periods)	TBC	To be removed upon completion of 3 days trapping (with 5 clear consecutive trapping nights), alongside destructive search, during active period.
Amphibian fence removal (not to be undertaken during hibernation/dormancy periods)	TBC	Perimeter fencing to be removed upon decommission of water management zone (estimated yyyy)
Ring fence removal (not to be undertaken during the hibernation/dormancy periods)	N/A	
Habitat reinstatement (for temporary impact schemes only)	TBC	Sections of Retsom's Field affected by works to be reinstated upon decommission of water management zone (estimated yyyy)
Post construction mitigation/compensation	N/A	

Pre, mid and post-development (other than monitoring, management and maintenance)		
Activity	**Timing**	**Comments**
on development site or other (provide details)		

ANNEX A: FIGURES

Figure 14C7B.4 B Mitigation

Figure 14C7B.5 C Habitat Creation

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- RETSOM'S FIELD BOUNDARY
- PARAMETER FENCE
- DRIFT FENCE
- EXISTING NATTERJACK TOAD PONDS
- APPROXIMATE EXTENT OF RABBIT WARREN BOUNDARY
- 10 METER BUFFER

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APPENDIX 2.9.C4
NATTERJACK TOAD DRAFT LICENCE UPDATE - METHOD STATEMENT PART 2

DRAWING TITLE:
FIGURE B: MITIGATION (SATELLITE MAPPING)

DRAWING NO:
114C7B.4

DATE:	DRAWN:	SCALE :
JAN 2020	P.N.	1:2,000 @A3

SCALE BAR
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NOTES

THE SATELLITE IMAGERY MAPPING USED IS BEFORE THE N4 POND/SCRAPE COMPLEX WAS CREATED IN 2018.

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- RETSOM'S FIELD BOUNDARY
- 150M DRY STONE WALL
- EXISTING NATTERJACK TOAD PONDS
- N5 - NEW POND/SCRAPE (150 m2)

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APPENDIX 2.9.C4
NATTERJACK TOAD DRAFT LICENCE UPDATE - METHOD STATEMENT PART 2

DRAWING TITLE:
FIGURE C: HABITAT CREATION (SATELLITE MAPPING)

DRAWING NO:
FIGURE 14C7B.5

DATE:	DRAWN:	SCALE :
JAN 2020	P.N.	1:2,000 @A3

SCALE BAR
0 10 20 30 40 50 M

APPENDIX 2.9.C5: WATER VOLE DRAFT LICENCE UPDATE – METHOD STATEMENT

CONTENTS

TABLES

PLATES

None Provided.

FIGURES

1 WATER VOLE DRAFT LICENCE UPDATE – METHOD STATEMENT

1.1 Background Information

a) 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. The Sizewell C main development site is located in Suffolk, centred at the grid reference TM 472 640. The main development site boundary is shown on **Volume 2**, **Figure 2.2.28** of the **Environmental Statement** (**ES**) **Addendum**.

1.1.2 A suitably qualified contractor would lead the delivery of the prescriptions of this water vole licence on behalf of the applicant (SZC Co.).

1.1.3 This report presents methods to mitigate potential impacts on water vole (*Arvicola amphibius*) populations present within the main development site for Sizewell C. The purpose of this document is to provide a draft method statement for Water Vole trapping and displacement that can be used by the Contractor's consultant ecologist, SZC Co. and any relevant subcontractors, in relation to the proposal to build Sizewell C. See **Annex A**, **Figure 14C6B.1** and **Figure 14C6B.2** for construction Areas and site layout respectively.

1.1.4 This document is presented as a second draft. SZC Co. and its consultant ecologists are committed to working with Natural England and other stakeholders to develop the approaches outlined within this document to ensure a legally robust approach to protected species before the document is finalised. Further surveys will be undertaken as appropriate and these will also inform the final draft of this and related documents, sufficient to inform any relevant licence.

b) Description of the Proposed Works

1.1.5 SZC Co. is proposing to build a new nuclear power station at Sizewell in East Suffolk, known as Sizewell C, located on the Suffolk coast, approximately halfway between Felixstowe and Lowestoft; to the north-east of the town of Leiston. The power station, together with the proposed associated developments, is referred to as the Sizewell C Project.

1.1.6 The proposed Sizewell C nuclear power station would comprise two UK EPR™ units and would have an expected electrical capacity of approximately 3,340 megawatts (MW). This would provide enough

electricity to supply approximately six million (or approximately 20%) of Britain's homes, and help facilitate the shift to a low carbon economy, using technology which has been used successfully and safely around the world for many years, and has been enhanced by innovations to improve performance and safety.

1.1.7 As part of the wider Sizewell C development, the new power station will be constructed at the main development site, adjacent to the existing Sizewell B power station. The construction of the Sizewell C power station will require substantial amounts of construction material to be transported to the site and a number of off-site associated developments to support the Scheme during its construction and long-term operation.

1.1.8 This licence draft method statement only applies to impacts within the main development site.

1.1.9 The on-site area includes the main platform and associated power station infrastructure and Sizewell B relocated facilities. Off-site areas include the Green Rail Route, Darsham Park and Ride, Wickham Market Park and Ride, Sizewell Link Road (SLR), Two Village Bypass (TVB) and Yoxford Junction and the Freight Management Facility (FMF).

c) Purpose of the Works

1.1.10 The purpose of the works is to construct a new nuclear power station at the Sizewell site. However, in constructing the power station, the proposed works will impact upon water voles. Water voles are present within the areas within the eastern edge of the Sizewell Marshes SSSI which will be used to create the western edge of the new power station platform and the SSSI Crossing to the north of this. Water vole are protected under Schedule 5 of the W&CA (Ref. 1), and are included under Section 41 of the NERC Act (Ref. 2). As a result, this licence is required to permit the project.

d) Proposed Licensable Activities

1.1.11 In the absence of mitigation, the works proposed have the potential to impact water vole through:

- Direct mortality;
- Fragmentation of habitats;
- Loss of habitats; and
- Disturbance of water vole.

1.1.12 Trapping and displacement activities are proposed under this draft method statement for Water Vole to mitigate potential impacts on water vole in relation to the proposal to build Sizewell C. This licence will permit the development to proceed without triggering offences under wildlife legislation.

e) Planning Status

1.1.13 The project is being submitted as a Nationally Significant Infrastructure Project (NSIP) and if consented, this would be via a Development Control Order (DCO).

f) Compliance with Best Practice

1.1.14 The proposed survey methodology, trapping, displacement techniques and monitoring requirements all comply with the guidance as set out in the latest Water Vole Mitigation Handbook (Dean et al., 2016) (Ref. 3).

1.1.15 The staff named on the licence by the appointed contractor would be members of the Chartered Institute of Ecology and Environmental Management (CIEEM) at the appropriate level and follow their code of professional conduct when undertaking ecological work.

1.2 Site information and survey

a) Introduction

1.2.1 This section briefly outlines the results of relevant previous surveys conducted on the application site in 2007, 2009, 2018 and updated surveys in 2020 by Arcadis.

b) Previous Survey Results

1.2.2 A walkover survey of the site was undertaken in October 2007, in conjunction with the surveys for otter. Twenty potentially suitable ditches were surveyed. Suitable terrestrial and aquatic habitat along these ditches were assessed for potential to support water vole and searched for field signs including a search of the bankside vegetation (where conditions were suitable) for latrines/droppings, feeding stations, burrows and footprints. Nineteen of the twenty ditches surveyed in 2007 were found to contain field evidence of water vole activity. Burrows were identified on three of the ditches; these were widely distributed across Sizewell Marshes SSSI.

1.2.3 Further water vole surveys of 16 ditches, using the same methodology as in 2007, were carried out in 2009, aimed at obtaining a better understanding of how water voles use the habitats across the EDF Energy Estate and to establish a generalised population assessment. Additionally, five transects

(approximately 500m in length) were surveyed within the reedbeds in the Sizewell Marshes SSSI. Artificial latrine sites were installed at a density of one every 10m; these were left in place undisturbed for two to three weeks prior to the surveys. Each reedbed transect was surveyed twice in 2009, between 20 to 21 August 2009, and again between 13 and 14 October 2009. Any field signs of water vole were recorded. Evidence of water vole activity was found in 14 of 16 ditches surveyed in 2009. High densities of field signs were found in four of these ditches. Water vole field signs were found on all of the five reedbed transect routes surveyed in 2009. All field signs were found in close proximity to ditches or other areas of open water, indicating that water voles were not active within the drier areas of reedbed, but restricted to the wetter margins. The average population size for the ditches surveyed in 2009 was estimated by Wood Group at 8.1 individual voles per 100m ditch, based on latrine counts within the breeding season. The density was, however, found to vary significantly, being dependent on the quality of the surrounding habitat. In the lowest quality habitat (heavy over-shading by adjacent woodland limiting growth of aquatic vegetation and heavy poaching of banks by cattle reducing bankside vegetation and restricting burrowing opportunities), this was estimated at only 3.5 individuals per 100m ditch, rising to 17.1 individuals per 100m for optimal habitat. Estimated water vole densities in England range from 2.4 to 14.0 per 100m of bank, with a UK average of 6.1 individuals per 100m. The average population size for the ditches surveyed in 2009 within Sizewell Marshes was estimated at 5.2 individuals per 100m ditch, which is close to the national average density. See **Annex A**, **Figure 14C6B.3** for a summary of the results.

1.2.4 In 2010, Wood Group surveyed all watercourses at Aldhurst Farm, using five transects, to identify evidence of water vole activity using the same survey methodology. At the time of survey the site comprised arable fields, with access tracks, boundary hedgerows and small plantation woodland and shelter belts (mainly comprising mature hybrid poplar (*Populus* sp.) although some veteran oak (*Quercus* sp.), Ash (*Fraxinus excelsior*) and willow (*Salix* sp.) were present).

1.2.5 Four out of five sections of ditches surveyed at Aldhurst farm provided suitable aquatic habitat for water voles and yielded field signs for water voles.

1.2.6 As part of the National Key Sites Monitoring Programme initiative, 12 transects within the EDF Energy Estate are monitored annually for water voles for the Sizewell National Key Site, and 24 transects are also monitored by the RSPB at the Minsmere National Key Site, to the north of the Sizewell Key Site. The Sizewell surveys were carried out in the spring and autumn up to 2009, in the autumn between 2010 and 2014 inclusively, and then from the spring from 2015 onwards. Positive sightings of water

vole signs were recorded, and the results presented as the percent of the 12 or 24 transects surveyed each time that showed positive signs. The data is published in the NGL Sizewell Land Management Reports. RSPB (*pers. comm*.) provided the Minsmere survey results.

1.2.7 Surveys were undertaken by Hyder in 2014 at Aldhurst Farm and comprised searching the ditches and other wetland habitats at Aldhurst Farm to identify all evidence of water vole activity, following recognised survey methodologies. Three ditches showed signs of water vole activity and were found to have good habitat suitability for water voles.

1.2.8 Aldhurst Farm was identified as having ditches with suitable aquatic habitat for water vole, and evidence of water vole field signs. Surveys were conducted in 2010 at this location to determine its suitability as a receptor site, as well as to identify the enhancement measures that would be required in order to receive water vole as part of any translocation exercise Habitat enhancement and creation measures were implemented in 2014 to 2016 which included four new lagoons. One of the new lagoons was fenced to prevent water vole colonising this area.

1.2.9 Subsequent surveys of Aldhurst Farm in 2018 confirmed the absence of water vole from the proposed receptor site, a fenced-off lagoon to the west of Aldhurst Farm. The lagoon had been fenced off to ensure no natural colonisation by water vole in order to ensure that the lagoon would remain suitable to receive translocated water vole from the main development site.

1.2.10 Water vole surveys were undertaken in 2019 of the ditches within 250m of the proposed Sizewell B Relocated Facilities site close to Coronation Wood. In 2019, only one of the six watercourses south of Coronation Wood was considered suitable for water voles. No burrows were identified within 100m of the site boundary, and only one water vole latrine was identified. This was recorded approximately 57m west of the site boundary, on the same watercourse (11) where Wood Group carried out surveys in 2009.

c) Updated Survey Results

1.2.11 The water bodies on the application site and within 50m of the application site boundary (see **Annex A**, **Figure 2.9.C5.1**) were surveyed on 3rd-5th June, 8th-12th June 2020 and again on 17th-21st August and 24th- 28th August 2020 by experienced Senior Ecologist (GradCIEEM) and an Ecologist (GradCIEEM) to assess the value of the site for both otter and water vole.

1.2.12 A site visit was also carried out on the 21st August by two suitably experience ecologists to assess habitat conditions across the site including the receptor areas.

1.2.13 Surveyors searched for otter field signs including spraints, footprints, feeding remains, potential holt sites, pathways and resting sites.

1.2.14 The surveyors searched for water vole field signs including a search of the bankside vegetation (where conditions were suitable) for latrines/droppings, feeding stations, burrows and footprints The signs were mapped using Global Positioning System (GPS) to allow for an estimation of the population size. The survey work was conducted in accordance with the 'Water Vole Mitigation Handbook' (Ref. 3).

1.2.15 Due to access limitations during the June and August water vole surveys, water vole float surveys were undertaken in September and October 2020. The water vole floats were deployed between 21st and 25th September and were checked twice: between 30th September - 2nd October and 12th - 13th October. The mink rafts were deployed on 30th September and were also checked on 12th - 13th October. The locations of the floats were chosen to provide a more detailed understanding of water vole populations within areas that will be significantly impacted by the development. Water vole floats were also deployed at Aldhurst Farm to be able to more precisely understand the carrying capacity of the proposed receptor site.

1.2.16 Mink raft surveys were also undertaken in combination with the water vole float surveys to confirm if American mink are present within the EDF Estate.

1.2.17 The number of latrines recorded during the surveys was used to provide an indication on relative population sizes of water vole present at each waterbody (Ref. 3)

Table 1.1: Water vole population density criteria

Relative population density	Approximate number of latrines per 100m of bankside habitat	
	Survey season (mid-April – June)	Survey season (July-September)
High	10 +	20 +
Medium	3-9	6-19
Low	≤ 2 (or none but with other confirmatory field signs)	≤ 5 (or none but with other confirmatory field signs)

1.2.18 A number of watercourses could not be surveyed (detailed in **Annex A** on **Figure 2.9.C5.1**), this was due to health and safety restrictions including deep water, steep banks and impenetrable dense vegetation.

1.2.19 Water vole surveys were not undertaken at Aldhurst Farm in June 2020 due to the presence of nesting marsh harrier (*Circus aeruginosus*) but were undertaken in late August, September and October 2020.

1.2.20 See **Annex A, Figure 2.9.C5.1** for updated results.

Table 1.2: Water vole survey results 2020

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations June	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations August	Assessment of Potential Population Density
Watercourse 5	TM 46298 66024	1 possible water vole burrow	N/A	None	Low
	TM 46075 66082	1 feeding station 1 latrine	N/A	None	
	TM 46061 66086	1 feeding station	N/A	None	
	TM 46090 66078	1 feeding station 1 latrine	N/A	None	
	TM 46091 66080	1 feeding station 1 latrine	N/A	None	
	TM 46097 66074	1 feeding station 1 latrine	N/A	None	
	TM 46094 66079	1 feeding station	N/A	None	
Watercourse 13	N/A	None	TM4544863470	Small mammal runs	Low
Watercourse 14	N/A	None	TM4518763535	Feeding signs Small mammal runs	Low
	N/A	None	TM4519263536	Latrine Feeding signs	
	N/A	None	TM4536763446	Small mammal runs	
	N/A	None	TM4538663466	Small mammal runs	

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations June	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations August	Assessment of Potential Population Density
	N/A	None	TM4541363499	Small mammal runs	
	N/A	None	TM4541963511	Latrine Feeding signs Small mammal runs	
	N/A	None	TM4542063516	Latrine Feeding station	
	N/A	None	TM4542063507	Feeding signs Small mammal runs	
	N/A	None	TM4541463523	Feeding signs Small mammal runs	
	N/A	None	TM4540863529	Water vole burrow Latrine Feeding signs Small mammal runs	
Watercourse 16	N/A	None	TM 44828 63468	Feeding signs Feeding station Small mammal runs	Low
	N/A	None	TM4484263468	Feeding signs	
	N/A	None	TM4485363470	Feeding signs	
	N/A	None	TM4486163473	Feeding signs	
	N/A	None	TM4488463482	Feeding signs	
	N/A	None	TM4488963484	Feeding signs	
	N/A	None	TM4501763505	Feeding signs	
	N/A	None	TM4505063497	Feeding signs	
Watercourse 17	N/A	None	TM4523863386	Feeding signs Small mammal runs	Low
	N/A	None	TM4524063380	Feeding signs	

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations June	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations August	Assessment of Potential Population Density
				Small mammal runs	
	N/A	None	TM4523863373	Feeding signs Small mammal runs	
	N/A	None	TM4523763354	Feeding signs Small mammal runs	
	N/A	None	TM4521763424	Feeding signs Small mammal runs	
	N/A	None	TM4518963454	Feeding signs Small mammal runs	
Watercourse 18	TM 46268 66043	2 water vole burrows	N/A	None	Low
	TM 46277 66041	1 feeding station	N/A	None	
Watercourse 26	TM 46415 65786	1 feeding station	N/A	None	Low
Watercourse 43 (Leiston Drain)	TM 47197 64481	3 water vole burrows	N/A	None	Low
	N/A	None	TM4686064545	Feeding signs	
Watercourse 47	TM 46552 64441	1 water vole burrow	N/A	None	Low
Watercourse 87	TM 46876 63225	1 feeding station	N/A	None	Low
Watercourse 90	TM 46873 63118	1 feeding station	N/A	None	Low
Watercourse 93	TM 46907 63005	1 feeding station	N/A	None	Low
Watercourse 101	TM 46632 63068	Feeding station	N/A	None	Low
	TM 46634 63072	Feeding station	N/A	None	
		Latrine	N/A	None	

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations June	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations August	Assessment of Potential Population Density
	TM 46637 63077	Feeding stations	N/A	None	
Watercourse 103	TM 46485 63419	1 water vole burrow	N/A	None	Low
Watercourse 108	TM 46569 63623	1 water vole burrow	N/A	None	Low
Watercourse 111	N/A	None	TM4551563516	Water vole burrow Feeding signs Small mammal runs	Low
	N/A	None	TM4552563521	Latrine Water vole burrows Small mammal runs Feeding signs	
	N/A	None	TM4553063525	Water vole burrow Feeding signs	
	N/A	None	TM4553763529	Water vole burrow Feeding signs	

Table 1.3: Water vole survey results receptor area August 2020

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations	Assessment of Potential Population Density
Aldhurst Farm Watercourse 109	TM 45358 63419	Feeding signs	Low
	TM 45344 63407	Feeding station	
	TM 45342 63406	Feeding signs	
	TM 45340 63405	Latrine	
	TM 45261 63332	Feeding signs	
Aldhurst Farm Watercourse 110	TM 45335 63424	Feeding signs	Low
	TM 45330 63426	Feeding signs	
	TM 45055 63502	Feeding signs	Low

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations	Assessment of Potential Population Density
Aldhurst Farm Lagoon A	TM 45018 63509	Feeding signs	
	TM 44894 63491	Feeding signs	
	TM 44889 63490	Feeding signs	
	TM 44870 63480	Feeding signs	
	TM 44862 63477	Feeding signs	
	TM 44849 63473	Feeding signs	
	TM 44826 63471	Feeding station Small mammal runs	
Aldhurst Farm Lagoon B	TM 45186 63538	Run Feeding signs	Low
	TM 45191 63539	Latrine Feeding signs	
	TM 45404 63534	Feeding signs	
	TM 45409 63530	Latrine Feeding signs Runs Burrow	
	TM 45419 63523	Feeding signs Runs (recent and old)	
	TM 45419 63517	Latrine Feeding station (on floating vegetation raft)	
	TM 45421 63515	Feeding signs Runs	
	TM 45422 63503	Latrine Feeding signs Runs	
	TM 45391 63470	Runs	
	TM 45369 63447	Runs	
Aldhurst Farm Lagoon C	TM 45185 63463	Feeding signs Runs	Low
	TM 45216 63433	Feeding signs Runs	
	TM 45241 63390	Feeding signs Runs	
	TM 45241 63386	Feeding signs Runs	
	TM 45240 63384	Feeding signs Runs	
	TM 45238 63353	Feeding signs Runs	
Aldhurst Farm	TM 45447 63472	Runs	Low

Ditch/Pond Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations	Assessment of Potential Population Density
Lagoon D			

Table 1.4: Water vole float and mink raft survey results September and October 2020.

Float/Raft Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations
30th September – 2nd October		
Aldhurst Farm AF1	TM 45423 63513	Feeding signs Droppings
Aldhurst Farm AF2	TM 45416 63529	Droppings
Aldhurst Farm AF3	TM 45407 63539	Droppings
Aldhurst Farm AF4	TM 45389 63538	Feeding station Latrine
Aldhurst Farm AF5	TM 45377 63525	Droppings
Aldhurst Farm AF6	TM 45368 63516	Droppings
Aldhurst Farm AF7	TM 45350 63507	Droppings
Aldhurst Farm AF8	TM 44831 63465	Feeding signs Droppings
Aldhurst Farm AF9	TM 44848 63472	Droppings
Aldhurst Farm AF10	TM 44853 63471	Droppings
Aldhurst Farm AF11	TM 44860 63475	Feeding station Droppings
Aldhurst Farm AF12	TM 44869 63480	Feeding station Droppings
Aldhurst Farm AF13	TM 44901 63493	Feeding signs Droppings
Aldhurst Farm AF14	TM 44918 63495	Droppings
Aldhurst Farm AF17	TM 45210 63437	Droppings
Aldhurst Farm AF18	TM 45223 63428	Droppings
Aldhurst Farm AF19	TM 45233 63407	Droppings
Aldhurst Farm AF20	TM 45237 63391	Droppings
Leiston Drain B1	TM 47299 64519	Droppings
Leiston Drain B4	TM 47260 64504	Droppings
Leiston Drain B6	TM 47225 64493	Feeding station
Leiston Drain B8	TM 47187 64479	Droppings
12th October		
Aldhurst Farm AF1	TM 45423 63513	Feeding signs Droppings
Aldhurst Farm AF2	TM 45416 63529	Feeding signs Droppings
Aldhurst Farm AF3	TM 45407 63539	Droppings
Aldhurst Farm AF5	TM 45377 63525	Droppings
Aldhurst Farm AF6	TM 45368 63516	Feeding signs (on adjacent vegetation) Droppings
Aldhurst Farm AF7	TM 45350 63507	Droppings (likely WV but washed out)
Aldhurst Farm AF8	TM 44831 63465	Droppings

Float/Raft Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations
Aldhurst Farm AF10	TM 44853 63471	Droppings
Aldhurst Farm AF11	TM 44860 63475	Feeding signs Droppings
Aldhurst Farm AF12	TM 44869 63480	Feeding signs Droppings
Aldhurst Farm AF13	TM 44901 63493	Feeding signs Droppings
Aldhurst Farm AF15	TM 45169 63468	Feeding signs Droppings
Aldhurst Farm AF17	TM 45210 63437	Feeding signs Droppings
Aldhurst Farm AF18	TM 45223 63428	Feeding signs Droppings
Aldhurst Farm AF19	TM 45233 63407	Droppings
Aldhurst Farm AF20	TM 45237 63391	Feeding signs Droppings
SSSI Triangle Lagoon A8	TM 47083 64360	Feeding signs (adjacent to float) Droppings
SSSI Triangle Lagoon A10	TM 47086 64346	Feeding signs Droppings
Leiston Drain B4	TM 47260 64504	Feeding signs Droppings
Leiston Drain B6	TM 47225 64493	Feeding signs Droppings
Mink Raft 6AF	TM 45174 63469	Water vole droppings Water vole footprints
13th October		
Aldhurst Farm AF1	TM 45423 63513	Droppings
Aldhurst Farm AF5	TM 45377 63525	Droppings
Aldhurst Farm AF6	TM 45368 63516	Droppings
Aldhurst Farm AF7	TM 45350 63507	Droppings
Aldhurst Farm AF8	TM 44831 63465	Droppings
Aldhurst Farm AF10	TM 44853 63471	Droppings
Aldhurst Farm AF11	TM 44860 63475	Droppings
Aldhurst Farm AF12	TM 44869 63480	Droppings
Aldhurst Farm AF13	TM 44901 63493	Feeding signs Droppings
Aldhurst Farm AF14	TM 44918 63495	Droppings
Aldhurst Farm AF15	TM 45169 63468	Droppings
Aldhurst Farm AF17	TM 45210 63437	Droppings
Aldhurst Farm AF18	TM 45223 63428	Droppings
Aldhurst Farm AF19	TM 45233 63407	Droppings
Aldhurst Farm AF20	TM 45237 63391	Droppings
SSSI Triangle Lagoon A8	TM 47083 64360	Feeding signs (adjacent to float) Droppings
SSSI Triangle Lagoon A9	TM 47084 64355	Droppings
SSSI Triangle Lagoon A10	TM 47086 64346	Droppings
Leiston Drain B7	TM 47237 64500	Droppings

Float/Raft Reference	OS Grid Reference	Frequency of Water Vole Activity Signs and Observations
Leiston Drain B8	TM 47187 64479	Droppings
Mink Raft 6AF	TM 45174 63469	Water vole droppings Water vole footprints

1.2.21 See Section 3 for further details of the likely impacts on water vole as a result of the development.

1.3 Impact assessment (before mitigation or compensation)

a) Introduction

1.3.1 This Section describes potential impacts of the Sizewell C and the main development site on water vole.

1.3.2 The impact assessment showed the potential for the works to have an impact upon water vole and their habitats, namely a proportion / section of Leiston Drain, Sizewell Marshes SSSI, Sizewell Drain and East-west running drains west of Sizewell Drain by SZB. Potential impacts are detailed within the sub-sections below.

b) Incidental mortality

1.3.3 Water vole use a series of burrows with many entrances and interconnecting tunnels. They also occasionally build woven nests in the bases of sedges and reeds. Outside of their burrows, water vole activity is largely confined to runs in dense vegetation with 2-5m of the water's edge.

1.3.4 There is the potential for incidental injury or mortality to water vole from construction plant carrying out vegetation and ground clearance works, installation of security fencing, ditch realignment during the Phase 1 preliminary works, and site establishment phases of construction. Water vole would be particularly vulnerable when they are in their burrows.

c) Habitat loss (Permanent)

1.3.5 The water vole population within the main development site would experience an impact of habitat loss through the following:

- vegetation clearance and site preparation for the SSSI crossing;
- vegetation clearance and site preparation of land to form the north-west corner of the proposed Sizewell C Station Platform located within the Sizewell Marshes SSSI (see **Annex A**, **Figure 14C6B.2**); and

- installation of a sheet-pile barrier between Sizewell Marshes SSSI and the main development site; which would provide the platform to conduct the ditch realignment works for the diversion of the Sizewell Drain within Sizewell Marshes SSSI for approximately 500m (two options under consideration).

1.3.6 These activities would result in the loss of water vole foraging habitat and destruction of burrows.

1.3.7 The construction option chosen for the drain alignment, would require work over approximately 4.22ha of habitat that water vole may occupy and in a linear context, this represents approximately 1740m of ditch or drain. Water voles would need to be moved from these areas prior to the works commencing. Once completed, the realigned Sizewell Drain would be available for water vole to use. The location of this drain is presented in **Annex A**, **Figure 2.9.C5.2**.

1.3.8 **Table 1.5** shows the area (or length) of water vole habitat which is due to be lost due to the construction footprint. This is an approximate estimate which would be refined as construction plans are further developed, and further water vole survey work (to support any future Natural England derogation licence) is carried out.

Table 1.5: Components of water vole habitat to be lost

Location	Length/area to be lost	Reason for loss
Leiston Drain	390m (including 70m of culvert and 20m stand-off either side)	To create Sizewell Marshes SSSI crossing
Habitat lost within Sizewell Marshes SSSI	665m perimeter, 0.67ha of wet reedbed 1736m perimeter, 3.55ha of suboptimal dry reedbed	Infill for north-west corner of proposed Sizewell C Station Platform
Sizewell Drain	1319m	Drain realignment*
East-west running drains west of Sizewell Drain by SZB	31m (one section)	Drain realignment*

* Although new sections of realigned ditch will be created, this is still considered a permanent habitat loss, with replacement habitat provision. The details of the replacement realigned ditch are presented in section 1.4.

d) Habitat fragmentation

1.3.9 The construction of the Sizewell Marshes SSSI bridge crossing rather than a culvert reduces the potential for and may eliminate fragmentation effects for water voles which would have prevented dispersal movements between

Sizewell Marshes SSSI and Minsmere South Levels, along the Leiston Drain.

1.3.10 The greatest potential for short-term habitat fragmentation would be during the Phase 1 construction period, when the site clearance and construction work associated with the establishment of the Sizewell Marshes SSSI crossing is taking place. During the construction of the bridge that would form the Sizewell Marshes SSSI crossing, the integrity of the Leiston Drain and adjacent banks would be maintained, so a barrier to water vole movement via the Leiston Drain is only likely to occur for a short duration during the ground improvement works and the installation of the pre–cast culvert sections.

1.3.11 Potential fragmentation effects resulting from the SSSI Crossing have been assessed in **Annex C** and also within **Volume 2**, **Chapter 14** of the **ES** (Doc Ref. 6.03) [AS-033] and updated in **Volume 1**, **Chapter 2** of the **ES Addendum**.

1.4 Mitigation strategy overview

a) Introduction

1.4.1 This section outlines the proposed mitigation strategy for water vole, a justification of why this strategy was chosen and an explanation of how this strategy will be implemented.

1.4.2 In summary, the approach to mitigation for water vole on site includes:

- The primary approach for water voles mitigation is likely to be via displacement, given the relatively low populations detected in 2020. Displacement techniques and monitoring are proposed where there is a working area with maximum length of 50m (for watercourse this equates to 50m on each bank). However, should displacement be unsuccessful (i.e. programme, season, signs continuously recorded following vegetation clearance) trapping will be undertaken within those areas. Displacement is proposed to mitigate habitat loss/disturbance within the 31m section of the east-west running drains west of Sizewell Drain by SZB that is due to be impacted.

- Trapping out water vole from the Sizewell Marshes SSSI crossing construction footprint would only be undertaken if high populations are detected in a population resurvey prior to the works. It would be undertaken during spring and autumn periods as necessary. In spring, animals would be released directly into the receptor area at Aldhurst Farm. In the autumn and if the weather is cold (night-time temperature below freezing (0^{o}C)), a contingency option for water vole captured

during the 15 September to 30 November trapping is to be over-wintered in captivity. These water vole would then be released into the receptor area the following spring (between 1 March and 15 April). Trapping is proposed to mitigate habitat loss/disturbance within:

- Leiston Drain (where the SSSI crossing is to be constructed);
- Habitat Sizewell Marshes SSSI (where subject to landtake associated with the SZC platform); and
- Sizewell Drain (where the ditch is being realigned).

- As soon as water voles have been removed from the areas to be impacted, their habitat would be rendered unsuitable for recolonization;
- Monitoring of water vole populations will occur prior to, during and after the above approach at the receptor site, the areas impacted by the works and the areas reinstated, such as the Sizewell Drain.

1.4.3 Once the proposed SZC main development site works have been completed, it is considered that there will be an overall increase in the population of water voles across the EDF Energy estate as a result of an increase in greater habitat availability.

1.4.4 All works that have the potential to impact water vole will be undertaken under licence from Natural England following an agreed Draft Method Statement and would be overseen by an appropriately experienced Ecological Clerk of Works.

1.5 Water vole displacement

a) Displacement approach background

1.5.1 In England, activities aimed at displacing water vole in the context of a development project have previously been routinely undertaken without a licence, with reliance on the 'incidental result' defence. It is now considered that such activities are not covered by this defence, and therefore require a licence. The development proposals must therefore deliver a net benefit for water voles as the licence would be issued for the purpose of conservation.

1.5.2 Displacement will be used as the method for preventing incidental mortality. It is considered that the likely impacts of the project fall within the recommended restrictions of the project. According to the best practice guidelines (Ref. 3) displacement can be employed under the following circumstances (the project response is listed below in italics):

- where there is a working area with a maximum length of 50m (for watercourses this equates to 50m on each bank), although a shorter maximum length would be appropriate in situations where water voles are at high density;

  The works impacting upon the 31m section of the East-west running west of Sizewell drain is less than 50m in length. The water vole population in the ditch is low.

- works are conducted between 15 February and 15 April inclusive (although some seasonal variation is accepted depending on weather and geographical location); and

  The project is proposing to conduct the displacement in this time period as far as possible, although the autumn period may also be used, subject to agreement.

- where there is sufficient available alternative habitat for water vole to move into

  Extensive areas of water vole habitat are available both upstream and downstream of the areas of construction impact.

b) Displacement and destructive search methodology

1.5.3 In areas where impacts to water bodies supporting water vole are foreseen, displacement will be conducted followed by a destructive search. The protocol for this displacement and destructive search is presented in **Table 1.6** below.

Table 1.6: Displacement and Destructive search protocol

Step	Action
1	Before vegetation removal, identify and mark the position of all burrows in the working area so that these can be located later to ensure that they are not blocked. Cofirm the absence of other constraints to the works, such as nesting birds.
2	Remove vegetation on the bank face within the area subject to development works, plus at least an additional 3m either side of the working area, and on the bank top (i.e. at least 3m back from the bank). This would be achieved using a strimmer until only bare earth remains and will potentially be carried out in stages depending upon the vegetation conditions present. If feasible, also cut the emergent aquatic vegetation located along the water margin to below water level.
3	Rake off and remove any arisings from the cleared area.
4	Check that burrow entrances have not become blocked and remove any latrines or feeding remains.

Step	Action	
5	If feasible and environmentally acceptable, combine with de-watering of the affected section of watercourse.	
6	Leave the strimmed area intact for five days to allow animals time to relocate.	
7	Re-survey the site for fresh evidence of water vole. If there is no evidence that water voles are still present, undertake a destructive search of the burrows (under the supervision of a suitably experienced ecologist) as follows.	
7	a	Excavate burrows to ensure that no animals are present. Hand tools would preferably be used, and excavation would extend as far as possible, bearing in mind practical health and safety constraints.
7	b	Using an excavator with a toothed bucket, rake through the turf and topsoil on the bank face and top on the side that the excavator is positioned. Then with a second or third sweep of the bucket, remove the turf and topsoil to a depth beyond which any burrows would be present.
7	c	Remove in-channel vegetation within 50cm of the toe of the bank to prevent regrowth.
7	d	Smooth the surface of the bank using an excavator with a ditching bucket (or the back of the toothed bucket). Ensure that any lumps of topsoil that might provide a refuge for water vole are removed.
7	e	Repeat the process for the opposite bank (if necessary).
8	Ensure that water vole do not return prior to the development works commencing by: • undertaking the works within five days of completing the destructive search; or • in-filling the channel immediately following the destructive search; or • maintaining the works area as bare ground until the works have taken place. This is likely to require a repeat scraping/smoothing of the banks; or • covering the ground with a suitable matting to ensure that vegetative regeneration cannot occur; or • installing suitable water vole resistant fencing to prevent water vole returning.	

1.5.4 If monitoring after the displacement but prior to the destructive search finds evidence of water vole, steps 1 – 6 will need to be repeated, or trapping will subsequently be conducted, as outlined in section a).

1.5.5 During destructive search the vegetation clearance and subsequent excavator will work in the direction that the water voles are being encouraged to move (towards retained habitat of good quality for water vole.

1.5.6 It is not foreseen that there will be any necessity to capture water vole by hand as a component of the works.

1.5.7 Throughout the construction period there will be monthly monitoring of active works areas along ditch 1 to ensure that water vole have not recolonised these areas.

1.5.8 If a licence is obtained, the approach to displacement and destructive search would be implemented as outlined within this report.

c) Works timetable

1.5.9 **Table 1.7** outlines the indicative timescale for the licensable activities [to be confirmed].

Table 1.7: Works timetable

Activity	Timeframe	Notes
Displacement as outlined in Table 4	TBC	
Destructive search as outlined in Table 4	TBC	To be conducted immediately following displacement
Construction period	TBC	Monitoring of the impacted areas to ensure that water vole have not recolonised will occur monthly throughout this period
Reinstatement of realigned ditch sections to allow recolonization of vegetation to occur	TBC	Immediately following construction completion

1.6 Water vole trapping and translocation

a) Trapping Introduction

1.6.1 As noted above, displacement is anticipated to be the mitigation approach that will be adopted. However, in the unlikely event that trapping will be required, the following methodology would be applied.

1.6.2 Trapping of water vole can only be undertaken by a person licensed to do so by the relevant Statutory Nature Conservation Organisation (SNCO) (Natural England in England) and would only be carried out by those with sufficient experience to ensure the welfare of the animals. Much of the following is adapted from the approach defined in Dean et al. (Ref. 3).

1.6.3 Trapping of water vole would only be undertaken at an appropriate time of year (1st March – 15th April 15th September – 30th November). Trapping would also not be undertaken during the following conditions:

- cold conditions – night-time temperatures below freezing (0°C);
- hot conditions – daytime temperatures above 20°C; and
- high rainfall/flooding – where water-level rises could be sufficient to flood the traps (the use of floating platforms may allow trapping to continue during minor water level fluctuations, but not during major flooding events which would capsize the rafts).

1.6.4 The weather forecast would be monitored daily during any the trapping exercise, and the traps would be securely closed or removed if adverse weather conditions arise or forecast.

b) Traps

1.6.5 An ideal metal trap type for capturing water vole is constructed from 1cm × 1cm weld mesh with an aluminium or wooden shelter at one end. Its basic dimensions are 50cm long × 15cm wide × 15cm high. The aluminium shelter sits over the far end of the trap and is 215mm in length. The traps have a spring-loaded mechanism allowing a very light treadle weight and have a simple locking bar fitting in their doors which activates on closure. These traps are light and easy to handle.

1.6.6 Traps would be thoroughly cleaned, disinfected, rinsed in clean water and dried after use and between trapping sites. In areas with bovine tuberculosis (TB), care needs to be taken to ensure that the agent is effective against mycobacteria (e.g. Trigene © is an effective agent whereas Virkon is not).

1.6.7 If trapping is undertaken during inclement weather conditions, then wooden covers over the nesting areas of the trap would be used to insulate the bedding area. These can be additionally insulated with a covering of 'bubble-wrap' if poor weather conditions persist.

1.6.8 Traps would be checked prior to use to ensure that they are in complete working order. Any traps which break, or malfunction would be immediately replaced. Each trapping team would have enough traps to allow for a replaceable reserve.

c) Locating and securing traps

1.6.9 Traps would be placed at a density of at least one per 10m of bank and where possible would be located parallel to the bank edge and immediately

adjacent to latrine sites or in areas where runs are obvious. The ground beneath the trap would be flattened as far as possible without damaging the bank, to allow the trap to sit securely, and where possible placed on a slight incline with the nest chamber highest, to prevent submersion in the event of minor fluctuations in water level. All traps would be secured with pegs, to prevent them being dislodged.

1.6.10 Traps would not be set in precarious positions where the movement of captured animals could lead them to fall into water, or in situations where human interference is likely to occur[1].

1.6.11 Each trap would be uniquely numbered with indelible pen and either clearly marked using flags (where interference by the public is unlikely, as in this location) or their locations mapped accurately to ensure they can be relocated. All trap locations should also be recorded using a hand-held Global Positioning System (GPS).

1.7 Provisioning traps

1.7.1 Traps would be provisioned with dry straw bedding and half a fresh, sweet apple. Additional food can also be provided (e.g. pieces of carrot). These materials would be checked daily and changed at least every second day.

a) Checking traps

1.7.2 Traps would be checked at least twice daily:

- early morning check, between 6am and 10am, with all traps checked by 10am; and
- late afternoon/evening check, before dusk.

1.7.3 During warm weather conditions a third check in the middle of the day would be undertaken.

[1] Traps can also be set on floating platforms (such as mink rafts, or purpose-built structures). This approach is particularly helpful in capturing animals from wetland habitat where there is no bank; where the bank is too steep to allow traps to be set safely; where most of the latrines are located some distance from the bank on floating vegetation; or where water levels are likely to fluctuate, such as downstream of an outfall or in an artificially or tidally impounded reach. Floating platforms are also useful where the disturbance of traps by dogs or foxes is likely. They must be sufficiently buoyant and stable to ensure that they can support a water vole's weight (or that of any non-target species), and therefore must be of higher specification than those simply used for undertaking surveys. The traps must be secured to the platform, to ensure that they do not roll into the water, and the platforms must be secured using canes or similar, to prevent them floating away. They also need to be tethered in a way which allows them to rise and fall with changes in water level, and they should not be used in situations where there is significant water wash from boat traffic, which could cause them to capsize.

b) Handling captured animals

1.7.4 Handling of water vole would only be undertaken by individuals holding an SNCO licence, or their accredited agents. In the event of any trapping works being required, captured water vole would be released at the Aldhurst Farm receptor site. All animals would be examined upon release from the trap to determine their sex and approximate size. They would then be placed in a suitable container for transportation, such as a standard rodent laboratory cage.

1.7.5 When water voles are captured, traps would be replaced on the same spot, as it is likely that more than one animal would be present. Particular care would be taken to ensure that more than a single trap is placed side by side at any location where very small juveniles (30–50g in weight) have been captured. The chance of catching other sibling litter mates at the same point is high. These can be placed in holding cages together if they are captured at the same location but should not be mixed with any other adults.

1.7.6 All field staff would be made aware that water vole can carry leptospirosis, and be familiar with its symptoms, pathways for transmission to humans, and the precautions necessary when handling water voles to minimise the risk of infection.

c) Completion of trapping

1.7.7 Trapping would be considered to be complete once there has been a period of five days or more when overnight temperatures are above freezing, with no captured animals, and there are no new field signs within the capture site. Once completed, a destructive search of the area would be undertaken. Any animals found during the destructive search would be captured with nets or by hand and transported as described above.

1.7.8 Whilst considered at the time of writing as unlikely, based on the 2020 survey data collected, in the event of a large trapping exercise being required within any part of the site, it may be appropriate to consider completing trapping in some parts of the site before others, to prevent the chances of animals recolonising the cleared areas. Further consideration is to be given to this, particularly in light of the difficulties in accessing the area for all of the works described above.

d) Soft release

1.7.9 Water vole that are relocated by trapping should be released into their receptor site using a soft-release technique taken from Dean et al. (Ref .3). Although there is a lack of evidence of the additional benefits of soft-release

versus hard-release (or indeed of the potential benefits of a longer-term soft-release than that described below) it is the professional opinion of the authors that the use of soft-release pens is likely to increase the number of animals surviving at release sites by providing animals with time to adjust to their new location. There are two basic methodologies for this process:

- The creation of pens with no base that are sunk into the ground to a depth of at least 25cm adjacent to the water's edge. These can be complete (fold-up) units or constructed from separate materials.
- Complete cages positioned in the riparian vegetation next to the water's edge from which animals cannot escape until a front section (with 6cm diameter holes in either side of a predator-proof baffle) is fitted.

1.7.10 Although both systems can work well each has its advantages and disadvantages discussed in the following sections.

ii. Pens with no base

1.7.11 Using this release technique, the water vole burrows out of the holding pen. Studies of radio-collared individuals (P. Franklin, personal communication) demonstrated that they would remain under these structures, in the burrow systems they have established, for many days before moving out into the wider environment. Once in position, these cages are difficult to move and if water levels fluctuate, they can rapidly be submerged. In addition, if they are not designed as complete units and their construction materials leave gaps in the overall structure then the vole can readily escape before they have settled. Under certain ground conditions, such as stony soils, they can be hard to reliably install. They need to be covered at least partially from the weather and securing predator-proof lids can be difficult.

1.7.12 A successfully used design is constructed from aluminium, which folds down for transport, and has a hinged lid for feeding access. It is completely weather-proof, with a floor area of approximately 45cm × 45cm and a maximum height of 25cm. Once dug in, these pens are fitted with a cardboard sheet (5mm thick) in their base through which the water vole have to gnaw to access the soil beneath. The top lid functions as an access door for feeding and maintenance. These cages needed to be well shaded to avoid them heating up excessively, so they would be located to avoid direct or dappled sunlight.

iii. Complete cages

1.7.13 Using this technique, water voles are completely contained. Although they cannot establish burrow systems they would rapidly come and go from both their own and adjacent cages once the fronts are folded under the main

cage and a baffle (to deter large predator access) is placed in position. These types of release cages are easier to install in some cases (such as stony soils) and are easier to move if this is needed during the release. The water voles are released from this structure by folding the front section under the main cage and then fitting a baffle with 6cm diameter holes at either side.

1.7.14 These cages can also be used as an on-site holding facility in situations where the release of water vole needs to be delayed, such as to allow vegetation within the receptor site to become better established. In such cases the cages must have a covered section on their top, back and sides to prevent the bedding getting damp. This can be achieved by partially covering the cage with a tarpaulin. The pens must be positioned in an entirely secure location where they cannot be removed or interfered with in any way by predators or people. Their position in a receptor habitat must be well above the level of any potential rises in water level.

iv. Release

1.7.15 If groups of siblings are being released together, up to seven individuals can be released using either technique. Family groups of a mother and young can also be released together. In other circumstances, water vole should be released as individuals rather than in groups. Individuals of the same sex should be separated by a minimum of 40m intervals along the waterway (two pens, one containing a male, one a female, per 40m length). The pens should be sited as close to the water as possible, in (or near) tall vegetation. Release pens should be situated away from public access. If this is impossible then a security fence may be required to prevent interference.

v. Provisioning

1.7.16 Release pens must be checked daily during the relocation operation to ensure that the animals have enough food. They should be supplied with a straw-bale-section (one-sixth of a bale) to provide cover and bedding. In the experience of the authors, each water vole should be provided with quarter of a sweet apple, half a carrot and cut external vegetation daily; and the animals should be supported with food for eight days in the dug-in cage system before these are removed, leaving the old bedding in place. In the complete cage system, they should be supported with food for five days, released on the sixth day and then fed for another three days. Once again, all the old bedding from these pens should be left *in situ* on the bank. In situations where water vole are to be held in complete cages for longer than six days, as an on-site holding facility (see above), they should also be provided daily with a small bowl of dry alfalfa-rich rabbit feed and drinking water (clip-on water bottles should be attached to the side of the cage).

Shallow metal trays, 60cm long × 30cm wide × 10cm deep can also be provided as swimming trays. The cages should need to be checked daily to ensure that they are intact, and food and water must be replenished daily.

e) Taking into captivity

1.7.17 In the event of trapping being required and animals needing to be kept in captivity e.g. if trapping is required to be undertaken in autumn between 15 September to 30 November inclusive and the weather is cold (night-time temperature below freezing (0^{o}C)) in the autumn, there would be a contingency option for any water vole captured in the 15 September to 30 November window to be over-wintered in captivity and subsequently released into the Aldhurst Farm receptor area the following spring.

1.7.18 The following organisations are believed to have the facilities to hold water vole in captivity (should this be required if the weather turns cold (night-time temperature below freezing (0^{o}C)) during an autumn trapping programme):

- Chester Zoo (British and Irish Association of Zoos and Aquariums (BIAZA) registered).
- Derek Gow Consultancy.
- M&H Ecology.
- Wildwood Ecology (BIAZA registered).

1.7.19 All facilities and care regimes for water vole must be fully compliant with the legislative requirements present in the Welfare of Animals Act (Ref. 4). Ideally animals would be held by organisations registered with the British and Irish Association of Zoos and Aquariums (BIAZA) or in similar facilities (such as those noted above) which can maintain a consistently high standard of captive care and maintenance.

1.7.20 All operatives handling water vole must be suitably experienced and use appropriate equipment.

f) Post trapping destructive search

1.7.21 The following steps (outlined in **Table 1.8**) would be undertaken after the completion of any trapping. This approached has been adapted from the guidance in the most recent water vole guidance (Ref. 3).

Table 1.8: Post trapping destructive search protocol

Step	Action
1	Re-survey the site for fresh evidence of water vole. If there is no evidence that

Step	Action
	water voles are still present, undertake a destructive search of the burrows (under the supervision of a suitably experienced ecologist) as follows.
2	Excavate burrows to ensure that no animals are present. Hand tools would preferably be used, and excavation would extend as far as possible, bearing in mind practical health and safety constraints.
3	Using an excavator with a toothed bucket, rake through the turf and topsoil on the bank face and top on the side that the excavator is positioned. Then with a second or third sweep of the bucket, remove the turf and topsoil to a depth beyond which any burrows would be present.
4	Remove in-channel vegetation within 50cm of the toe of the bank to prevent regrowth.
5	Smooth the surface of the bank using an excavator with a ditching bucket (or the back of the toothed bucket). Ensure that any lumps of topsoil that might provide a refuge for water vole are removed.
6	Repeat the process for the opposite bank (if necessary).
7	Ensure that water vole do not return prior to the development works commencing by: • undertaking the works within five days of completing the destructive search; or • in-filling the channel immediately following the destructive search; or • maintaining the works area as bare ground until the works have taken place. This is likely to require a repeat scraping/smoothing of the banks; or • covering the ground with a suitable matting to ensure that vegetative regeneration cannot occur; or • installing suitable water vole resistant fencing to prevent water vole returning.

g) Timetable of trapping and translocation works

1.7.22 The timetable of the works described is dependent upon weather (i.e. extreme weather events such as high rainfall, daytime temperatures above 20^{o}C and night-time temperature below freezing 0^{o}C), trapping success and the completion of other ongoing protected species mitigation works being conducted within the application site. Any trapping works is anticipated to take a maximum of 21 days. The predicted timetable for the works can be seen in **Table 1.9** below [to be confirmed].

Table 1.9: Proposed timetable and summary of water vole mitigation trapping works at the application site (if required).

Activity and Key Points (if required in addition to the displacement activities)	Approximate Dates
Updated surveys	TBC
Licence submission	TBC
Licence granted This date assumes a 30 working day turnaround for the licence from submission to Natural England and any amendments in the event of trapping being required and a licence addendum needing to be submitted to cover any trapping works.	TBC
Site resurveyed to determine trap positioning This will allow the current status of water vole within the survey site to be assessed.	TBC
Installation of soft release pens Once a licence has been granted, soft release pens will be installed at the receptor site. The time between installation and the commencement of trapping will allow any damaged vegetation to recover prior to any animals being translocated to the release pens.	TBC
Baited traps opened.	TBC
Checking of open traps All open traps will be checked twice daily. Any captured animals will be moved to receptor site release pens and provisioned with adequate food resources.	TBC
Closing of traps Once a minimum of ten trapping days in suitable weather have been conducted with no animals being caught for 5 consecutive days, the destruction of habitat will be allowed. Should the destruction of habitat be postponed, the traps will remain active and in situ right up until the destruction of habitat occurs to ensure no window of opportunity exists for water vole to re-colonise.	TBC

Activity and Key Points (if required in addition to the displacement activities)	Approximate Dates
Destruction of habitat Once the site is determined to have been cleared of water vole and other protected species, the site will be destroyed under supervision of a suitably qualified ecologist, according to the methodology outlined in the Water Vole Conservation Handbook.	TBC
Soft release of captured water vole Once it is determined that all animals in the application site have been relocated and water vole habitat at the application site has been destroyed, or individual water vole have been held in release pens for 21 days, any captured animals present in release pens will be released through the removal of a small baffle. This will only occur if animals have been in the release pens for a minimum of four days. The pens will be left in-situ to provide shelter for the released animals and food supplies will continue to be provisioned.	TBC
Removal of soft release pens Five days after the animals are released from the soft release pens, these pens will be removed entirely. Any remaining bedding and food will be left in-situ.	TBC

1.8 Compensation

a) Release location

1.8.1 The proposed release location for any trapped water voles is the Aldhurst Farm receptor site where habitat enhancement and creation measures were implemented in 2014 to 2016, with ongoing management of the area.

1.8.2 The Aldhurst Farm area (bounded by Lovers Lane to the north and east, Valley Road to the south-east, and Leiston to the west and south-west) was in arable use up until 2014. It has the upper reaches of the Leiston Drain crossing the site from east to west and is immediately adjacent to the Sizewell Marshes SSSI to the east. Surveys found water vole present in the Leiston Drain.

1.8.3 Overall, the release site offers more extensive habitat than that being lost to the development, as presented in **Table 1.10**.

Table 1.10: Habitat loss and gain as a result of the development

Donor site		Receptor/habitat enhancement site	
Location	**Habitat loss - Size (perimeter/ length in m, or area in ha)***	**Location**	**Habitat Created/Enhanced - Size (perimeter/ length in m, or area in ha)**
Leiston Drain	390m of permanent habitat loss (Inc. 70m of culvert and 20m stand-off either side) on two banks	Aldhurst Farm lagoons and reedbed habitat creation/enhancement (including the release site the northern boundary on lagoon A.)	The total area of wetland habitat created / enhanced within Aldhurst Farm is approximately 6.2ha which includes: Wet reedbed (excluding open water areas) 3.15ha Open water within wet reedbed (assume 25% from 20—30% stated in Ecology and Landscape Management Plan, Appendix A) 1.1ha Dry reedbed and reed-based tall herb fen 1.2ha Approximately 2km of ditch (0.8ha) Of which the release area (Lagoon A) is approximately 1.9ha with approximately 790m of ditch
Sizewell Drain	Within SSSI triangle: 1319m of permanent habitat loss on two banks	Ditch realignment of Sizewell and Leiston Drain	Ditch realignment of Sizewell and Leiston Drain will create 1.09km of ditch
East-west running drains west of Sizewell Drain	31m (one section)	New habitat in the north eastern extent of the site	New habitat to be created in the marsh harrier habitat improvement areas of the site will comprise of 3.06ha of reedbeds and open water and 0.7ha of wet woodland
Lagoon and associated reedbed in SSSI	0.67ha of wet reedbed 3.55ha dry reedbed		
Total Area Lost:	4.22ha of reedbed	Total Area Available:	6.65ha Reedbed

Donor site		Receptor/habitat enhancement site	
Location	**Habitat loss - Size (perimeter/ length in m, or area in ha)***	**Location**	**Habitat Created/Enhanced - Size (perimeter/ length in m, or area in ha)**
	1740m of ditches	• Aldhurst farm • New habitat to be created in the marsh harrier habitat improvement areas created areas	1.86ha Open water 0.7ha Wet woodland Approximately 3km of ditches

1.8.4 Approximately 6.2ha of wetland and 2km of ditch and open water were created on this site in 2014 in the form of four lagoons either side of the Leiston Drain. These lagoons were designed to ensure that the reedbed and lowland ditch habitats could establish and develop a similar biodiversity value to those within the adjacent Sizewell Marshes SSSI. They were created through lowering the ground to expose the water table, securing water levels during low rainfall, with weirs to maximise water-level control.

1.8.5 The newly created lagoon banks and reedbed have established well and currently provide suitable habitat for water vole to burrow in; the reedbeds provide habitat for water vole to build nests in, and the diverse flora provides suitable foraging habitat.

1.8.6 The western-most lagoon (Lagoon A, see **Annex A**, **Figure 14C6B.7**) has an area of approximately 1.9ha and a ditch perimeter of approximately 790m. This lagoon has been designed to be the receptor site for water vole translocated from Sizewell C. A site visit on 6 October 2016 and subsequent visits in 2018 revealed that Lagoon A has establishing well as a potential water vole receptor site (see **Table 1.11**). Lagoon A was fenced with water vole-proof fencing in the spring of 2018. The outflows to the ditch system were covered in fine mesh to prevent ingress by water vole. Further site visits in 2018 (19 June and 7 August) confirmed the absence of water vole and the on-going development of the habitat as suitable for water vole. During the 2020 survey visits a small number of water vole field signs were found within the receptor site in Lagoon A where a breach in the fence had occurred. Following a review of the lagoon and surveys to confirm water vole population densities, the northern extent of Lagoon A is still considered suitable for use in the unlikely event that trapping works need to be undertaken.

1.8.7 A visit was undertaken in November 2019 to evaluate the ongoing management of the area and additional management prescriptions were recommended to ensure optimum quality.

Table 1.11: Photos of Lagoon A, Aldhurst Farm in 2016 and 2018

	
From west, looking east (06/10/16).	From east, looking west (06/10/16).
	
From west, looking east (22/06/18).	From west, looking east (22/06/18).

1.8.8 Plants identified within the reedbed in 2018 include: Water-plantain (*Alisma plantago-aquatica*), Bulrush (*Typha latifolia*), Purple-loosestrife (*Lythrum salicaria*), Water-cress (*Nasturtium officinale*), Pendulous Sedge (*Carex pendula*) and Hoary Willowherb (*Epilobium parviflorum*). Patches of Bramble (*Rubus fruticosus agg.*) were also developing around edge of reedbed. Therefore, the reedbeds and banks have become optimal habitats for water vole.

1.8.9 The other created lagoons and reedbeds at Aldhurst Farm (Lagoons B, C and D, see **Annex A**, **Figure 14C6B.7**) have been created as compensatory habitats to offset the landtake impacts associated with Sizewell SSSI Marshes described above, including habitat loss to water vole. Lagoons B, C and D have not been fenced off to prevent the natural colonisation of water vole. In habitat area terms, these lagoons would provide a conservation benefit to water vole and offset the overall habitat loss and fragmentation effects from the Sizewell C project in relation to reedbeds and ditches.

1.8.10 A management plan for Aldhurst Farm has been prepared and approved by the Local Planning Authority, ensuring the maintenance of habitat suitable for water vole.

1.8.11 In addition to the Aldhurst Farm habitat areas, described above, a new area of reedbed and wet woodland would be created in the north-eastern extent of the site. The area will comprise a mosaic of reedbed and open water (3.06ha) and wet woodland (0.7ha) adjacent to extensive areas of dry grassland and scrub created as habitat improvement areas for marsh harriers and surrounded by existing woodland to the north and east of the newly created habitat (see **Annex A**, **Figure 2.9.C5.3**). These wetland habitats would form an extension to the Minsmere South Levels to the north and east and when established would also be suitable for colonisation by water voles in due course.

1.8.12 Research has shown water vole require an area of 204m² per individual (based on home range minimum requirement of 185m² per animal with 10% included for resilience) (Ref. 5) and individual water vole of the same sex can also be released into receptor areas at 40m intervals along waterways with one male and one female being able to be released per 40m length (Ref. 3).

1.8.13 The 2009 survey results calculated an estimate of 5.2 individuals per 100m of ditch habitat. Based on the areas and lengths of water vole habitat that will be lost as part of the development (4.22ha of reedbed and 1740m of ditches) the maximum number of water vole that could be supported by these areas and potentially impacted would be approximately 295 individuals.

1.8.14 Taking into consideration the area and extent of habitat provided in the Aldhurst Farm receptor area (6.2ha reedbed and 2 km ditches) the receptor area has the potential to support a maximum of 353 individuals based upon the research above.

1.9 Monitoring and management

1.9.1 A regular monitoring programme, both during and after construction, is required to:

- assess the effectiveness of the mitigation; and
- provide early warning of any adverse trends in the population so that appropriate action can be taken.

1.9.2 This approach will provide the best opportunity of ensuring no adverse impacts arise on water vole populations over the short- or long-term.

1.9.3 Monitoring would be undertaken at both the construction site (and several hundred metres either side of it) and at the receptor site at Aldhurst Farm.

1.9.4 Monitoring water voles will provide information on:

- the establishment and success of the translocated population at the Aldhurst Farm receptor site;
- colonisation of the realigned Sizewell Drain;
- re-colonisation of the Leiston Drain; and
- population interchange across the new SSSI Crossing.

1.9.5 Surveys will be carried out during the breeding season (March to October), and at a time of year when field sign survey results can be compared with pre-construction survey data. The monitoring would be undertaken for a five year period, in accordance with the guidelines set out in the Water Vole Mitigation Guidelines (Ref. 3). Specific survey techniques are likely to be required to determine the extent of population interchange across the new SSSI Crossing.

1.9.6 Management of the receptor site will continue throughout the life cycle of the Sizewell C reactor and will be the responsibility of the site operator (SZC Co.). In the event of the receptor sites not being required and trapping and relocation works not needed, the exclusion fencing surrounding these areas will be removed and the areas made accessible for the local water vole population to naturally expand into and colonise. The management of the receptor site and of the existing ditches impacted by the works, realigned ditches and newly created habitats at Aldhurst Farm is designed to prevent incidental mortality and to achieve an optimum habitat as outlined in the Water Vole Conservation Handbook (Ref. 6). An approved (by the Local Planning Authority) management plan is in place and is presented in **Annex B**.

1.10 Development timetable

a) Timetable summary

1.10.1 **Table 1.12** shows the proposed construction and operational phases of the SZC main development site works. Where applicable, inputs in relation to water vole mitigation are also included.

Table 1.12: Construction and Operational Phases in relation to water vole mitigation

Phase	Generic action	Specific action	Timing
Preliminary works	Activities proposed prior to a DCO being granted, to expedite the delivery of the works.	Fencing to exclude water vole from proposed Aldhurst Farm receptor site, and further habitat enhancement.	Completed 2018. Maintenance ongoing.
		Surveys to confirm absence of water vole at proposed Aldhurst Farm receptor site.	Completed 2018. To be updated in 2020
		Draft licence preparation as part of the DCO.	2020
		Pre-licence population surveys at Sizewell Marshes SSSI crossing construction footprint.	2021
		Final licence preparation.	2021
		Licence submission.	Post DCO grant
Phase 1: Site establishment and preparation for earthworks	Establishment of the site and preparations for the main earthworks, focussing on securing and clearing the site and provision of early access routes. Ditch realignment.	Displacement of water vole from sections of watercourses to be impacted within the redline boundary. In the event of further mitigation being required in addition to displacement activities, spring (ideally) or autumn trapping of water vole from Sizewell Marshes SSSI crossing construction footprint (and if required, over-wintering in captivity).	TBC

Phase	Generic action	Specific action	Timing
	Installation of Sizewell Marshes SSSI crossing	Release of water vole from captivity (if required) into Aldhurst Farm receptor site.	TBC
		Displacement of water vole from 30m sections of Sizewell Drain.	TBC
Phase 2: Earthworks	Main ground materials which overlay construction area transported to the stockpile areas within the temporary construction area. New reedbed and wet woodland habitats to be created in the north eastern extent of the site	On-going monitoring programme at receptor site and Sizewell Marshes SSSI crossing construction footprint.	TBC
Phase 3: Main civil works	Main civil engineering works.	On-going monitoring programme at receptor site and Sizewell Marshes SSSI crossing construction footprint.	TBC
Phase 4: Fit out, instrumentation and commissioning	Mechanical and electrical plant installation phase.	On-going monitoring programme at receptor site and Sizewell Marshes SSSI crossing construction footprint.	TBC
Phase 5: Removal of temporary facilities and restoration	As the main construction phases conclude, temporary facilities would start to be removed and the temporary construction site areas restored to an agreed state consistent with Landscape Strategy for the EDF Energy estate.	On-going monitoring programme at receptor site and Sizewell Marshes SSSI crossing construction footprint.	TBC
Operational phase	On-going monitoring programme at receptor site, realigned ditches, crossing culvert and Sizewell Marshes SSSI crossing footprint.		TBC

1.11 Project plan for conservation gain

a) Net conservation gain

1.11.1 Macpherson & Bright (Ref. 7) considered the landscape approach to water vole conservation. They have shown, from population modelling, the importance of creating (through habitat creation/restoration of large reedbeds and grazing marsh sites) 'patches' of core water vole habitat which can sustain water vole metapopulations in the surrounding landscape where conditions are less favourable.

1.11.2 Although water voles were recorded in the Leiston Drain at Aldhurst Farm prior to the habitat creation programme, only a small number of signs were found, and the surrounding land was agricultural land, of negligible value for water vole. Habitat creation at Aldhurst Farm has created and would maintain a mosaic of habitat suitable for water vole including: approximately 5.4ha of wet and dry reedbed habitat (incorporating between 20-30% open water habitat) and approximately 2km of ditch habitat characteristic of lowland ditch habitat.

1.11.3 In addition, the new reedbed and wet woodland habitats in the north eastern extent of the main development site will be created during the construction phase and will likely to have established and available for use during the final stages of construction. These habitats, once established, would represent a net gain for water vole.

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8. Foresman, K. R. (2001). Small mammal use of modified culverts on the Lolo South Project of Western Montana - an update. UC Davis: Road Ecology Center. Retrieved from https://escholarship.org/uc/item/7cw8043j

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ANNEX A: FIGURES

Minsmere Old River
Drain
Drain
Drain
Drain
Drain
Drain
Drain
Drain
Drain
Cowmarsh Hill
Minsmere New Cut
Track
Track
Track
Path
Dovehill Plantation
SEE INSET 1
Sandypytle Plantation
Lower Abbey Farm
The Grove
Plantation
Track
1
2
3
4
5
6
7
8
9
10
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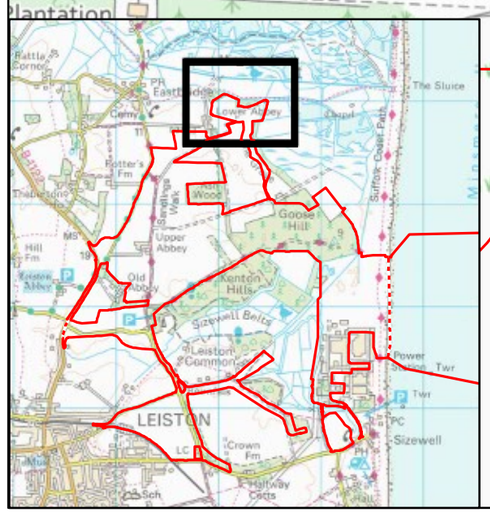

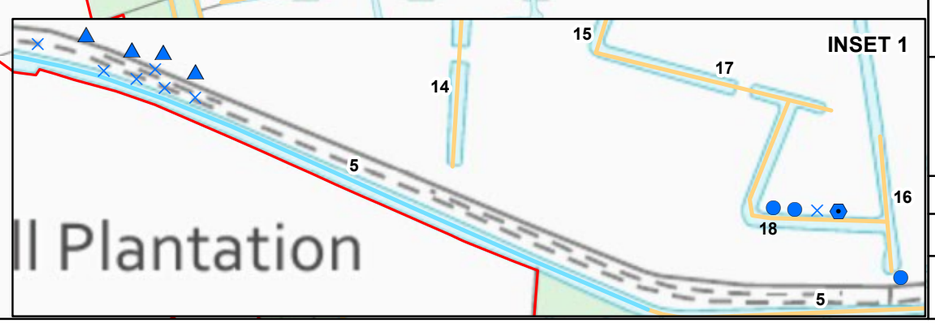

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE

WATEROURSE SURVEY STATUS

- NOT SURVEYED
- PARTIALLY SURVEYED
- SURVEYED

JUNE 2020 WATER VOLE SURVEY RESULTS

- BURROW
- FEEDING STATION
- OTHER SIGN
- SMALL MAMMAL HOLE
- LATRINE

AUGUST 2020 WATER VOLE SURVEY RESULTS

- BURROW
- FEEDING STATION
- FEEDING SIGNS
- SMALL MAMMAL RUN
- LATRINE

NOT PROTECTIVELY MARKED

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DOCUMENT:
ENVIRONMENTAL STATEMENT ADDENDUM
VOLUME 3
APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
COMBINED 2020 WATER VOLE SURVEY RESULTS
SHEET 1 OF 6

DRAWING NO:
FIGURE 2.9.C5.1

DATE:	DRAWN:	SCALE :	REV:
JAN 2021	R.G.	1:4,000 @A3	01

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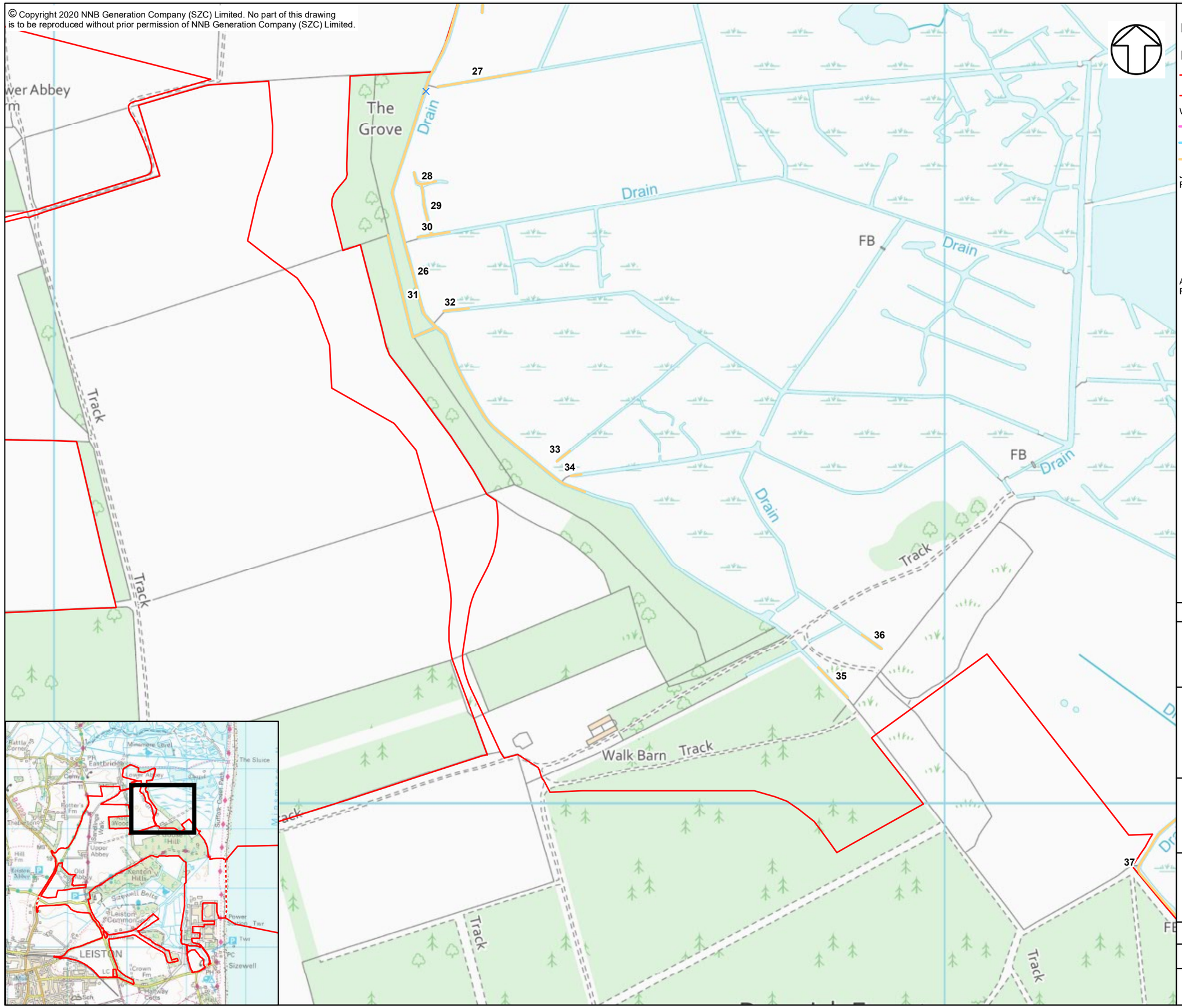

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE

WATEROURSE SURVEY STATUS

- NOT SURVEYED
- PARTIALLY SURVEYED
- SURVEYED

JUNE 2020 WATER VOLE SURVEY RESULTS

- BURROW
- FEEDING STATION
- OTHER SIGN
- SMALL MAMMAL HOLE
- LATRINE

AUGUST 2020 WATER VOLE SURVEY RESULTS

- BURROW
- FEEDING STATION
- FEEDING SIGNS
- SMALL MAMMAL RUN
- LATRINE

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WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
COMBINED 2020 WATER VOLE SURVEY RESULTS
SHEET 2 OF 6

DRAWING NO:
FIGURE 2.9.C5.1

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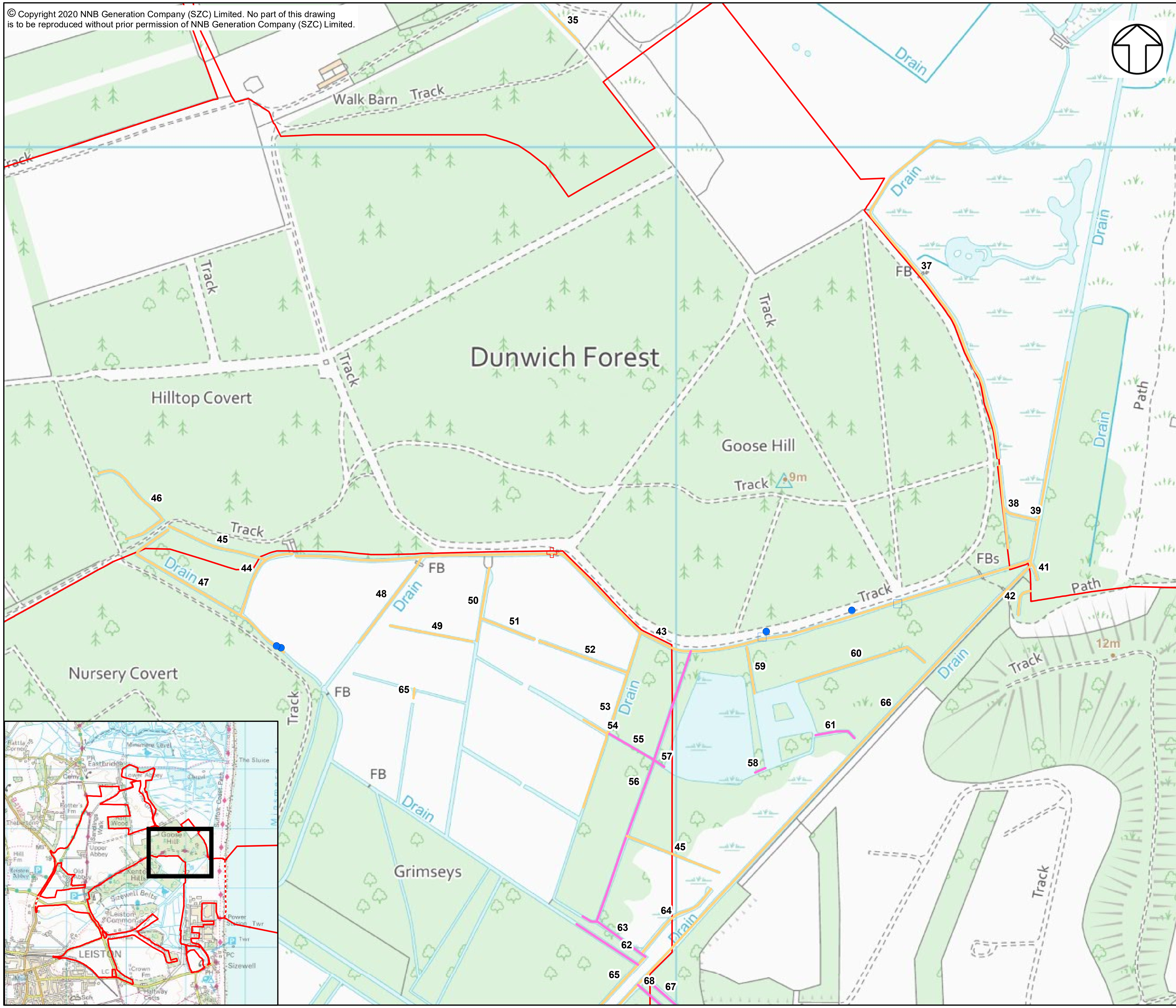

NOTES

KEY

SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY

DEMARCATION LINE

WATEROURSE SURVEY STATUS

NOT SURVEYED

PARTIALLY SURVEYED

SURVEYED

JUNE 2020 WATER VOLE SURVEY RESULTS

BURROW

FEEDING STATION

OTHER SIGN

SMALL MAMMAL HOLE

LATRINE

AUGUST 2020 WATER VOLE SURVEY RESULTS

BURROW

FEEDING STATION

FEEDING SIGNS

SMALL MAMMAL RUN

LATRINE

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DRAWING TITLE:
COMBINED 2020 WATER VOLE SURVEY RESULTS
SHEET 3 OF 6

DRAWING NO:
FIGURE 2.9.C5.1

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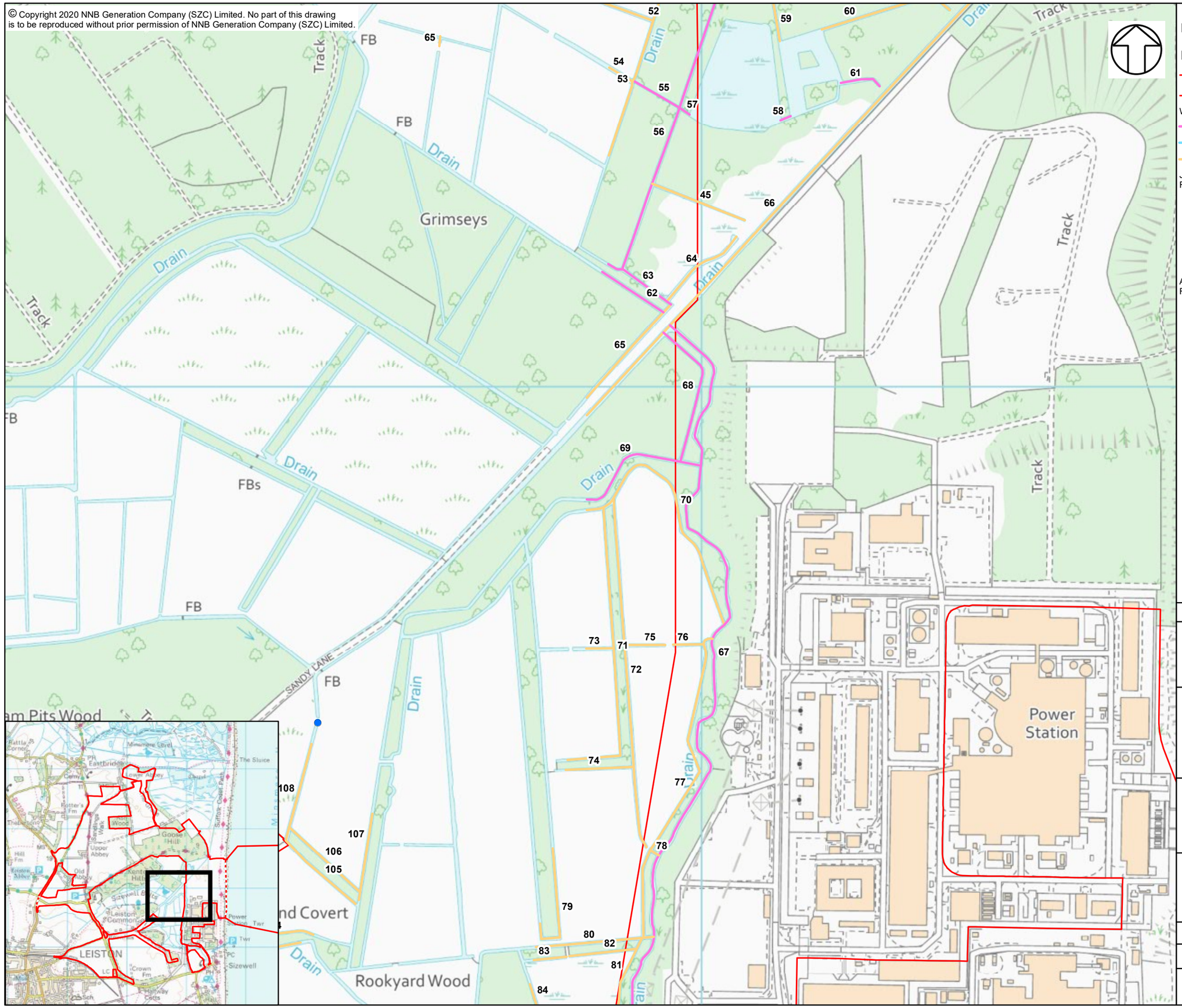

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE

WATEROURSE SURVEY STATUS

- NOT SURVEYED
- PARTIALLY SURVEYED
- SURVEYED

JUNE 2020 WATER VOLE SURVEY RESULTS

- BURROW
- FEEDING STATION
- OTHER SIGN
- SMALL MAMMAL HOLE
- LATRINE

AUGUST 2020 WATER VOLE SURVEY RESULTS

- BURROW
- FEEDING STATION
- FEEDING SIGNS
- SMALL MAMMAL RUN
- LATRINE

NOT PROTECTIVELY MARKED

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DRAWING TITLE:
COMBINED 2020 WATER VOLE SURVEY RESULTS
SHEET 4 OF 6

DRAWING NO:
FIGURE 2.9.C5.1

DATE:	DRAWN:	SCALE :	REV:
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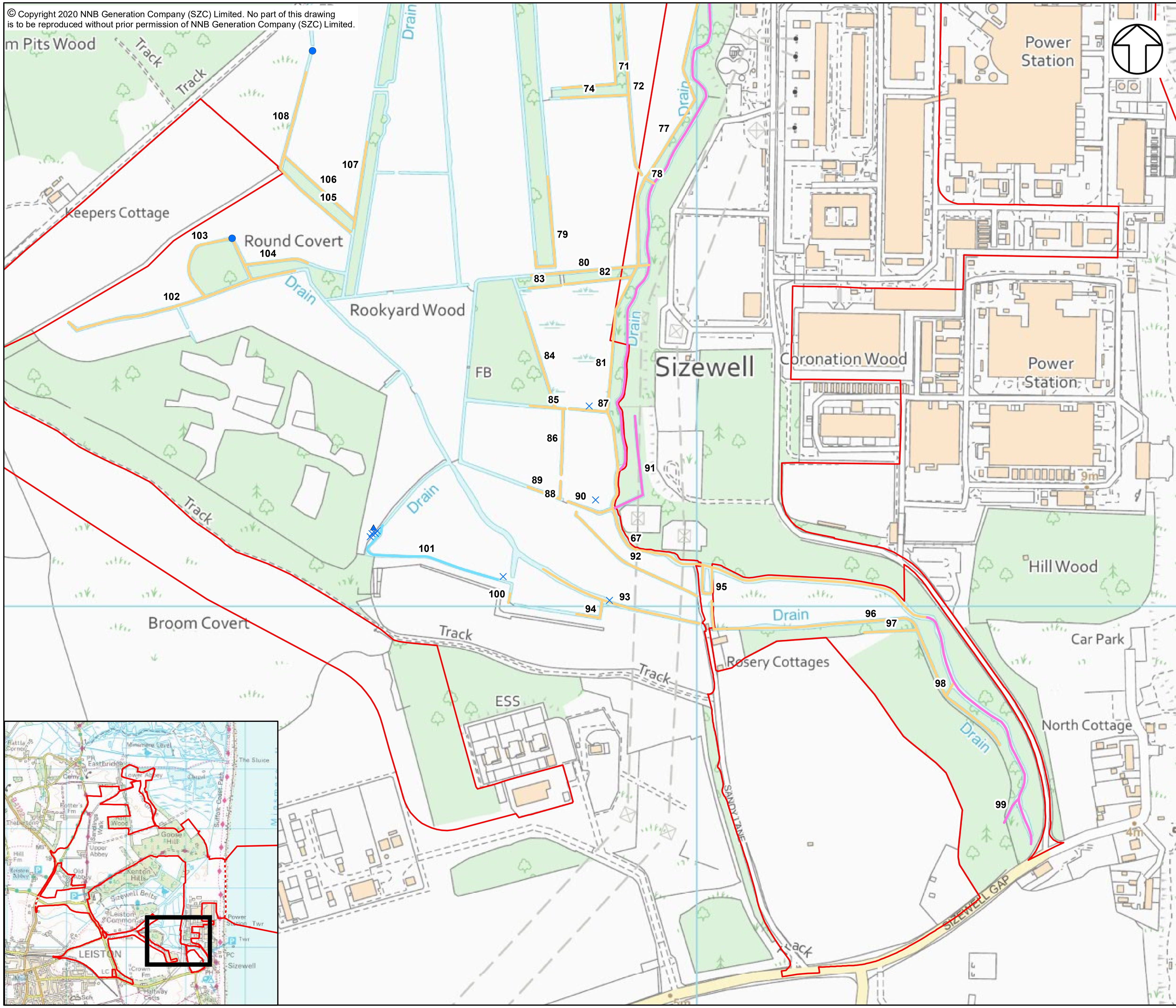

NOTES

KEY

SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY

DEMARCATION LINE

WATEROURSE SURVEY STATUS

NOT SURVEYED

PARTIALLY SURVEYED

SURVEYED

JUNE 2020 WATER VOLE SURVEY RESULTS

BURROW

FEEDING STATION

OTHER SIGN

SMALL MAMMAL HOLE

LATRINE

AUGUST 2020 WATER VOLE SURVEY RESULTS

BURROW

FEEDING STATION

FEEDING SIGNS

SMALL MAMMAL RUN

LATRINE

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WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
COMBINED 2020 WATER VOLE SURVEY RESULTS
SHEET 5 OF 6

DRAWING NO:
FIGURE 2.9.C5.1

DATE:	DRAWN:	SCALE :	REV:
JAN 2021	R.G.	1:4,000 @A3	01

SCALE BAR
0 25 50 75 100 125 M

Car Park
Mast
OVER'S LANE
Drain
Track
LOVER'S LANE
113
112
111
110
109
SEE INSET 2
Recycling Site
Drain
Sewage Works
LEISTON
Sizewell
INSET 2

NOTES

KEY

SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
DEMARCATION LINE

WATEROURSE SURVEY STATUS
NOT SURVEYED
PARTIALLY SURVEYED
SURVEYED

JUNE 2020 WATER VOLE SURVEY RESULTS
BURROW
FEEDING STATION
OTHER SIGN
SMALL MAMMAL HOLE
LATRINE

AUGUST 2020 WATER VOLE SURVEY RESULTS
BURROW
FEEDING STATION
FEEDING SIGNS
SMALL MAMMAL RUN
LATRINE

NOT PROTECTIVELY MARKED

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WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
COMBINED 2020 WATER VOLE SURVEY RESULTS
SHEET 6 OF 6

DRAWING NO:
FIGURE 2.9.C5.1

DATE:	DRAWN:	SCALE :	REV:
JAN 2021	R.G.	1:3,000 @A3	01

SCALE BAR
0 25 50 75 100 125 M

NOTES

KEY

- WFD Fluvial water body
- SSSI Crossing
- Indicative Development Site Boundary

WFD Coastal Water body

- Suffolk (GB650503520002)
- Walberswick Marshes (GB610050076000)

WFD Fluvial Catchment areas

- Leiston Beck (GB105035046271)
- Minsmere Old River (GB105035046270)

WFD Groundwater body

- Waveney and East Suffolk Chalk & Crag (GB40501G400600)

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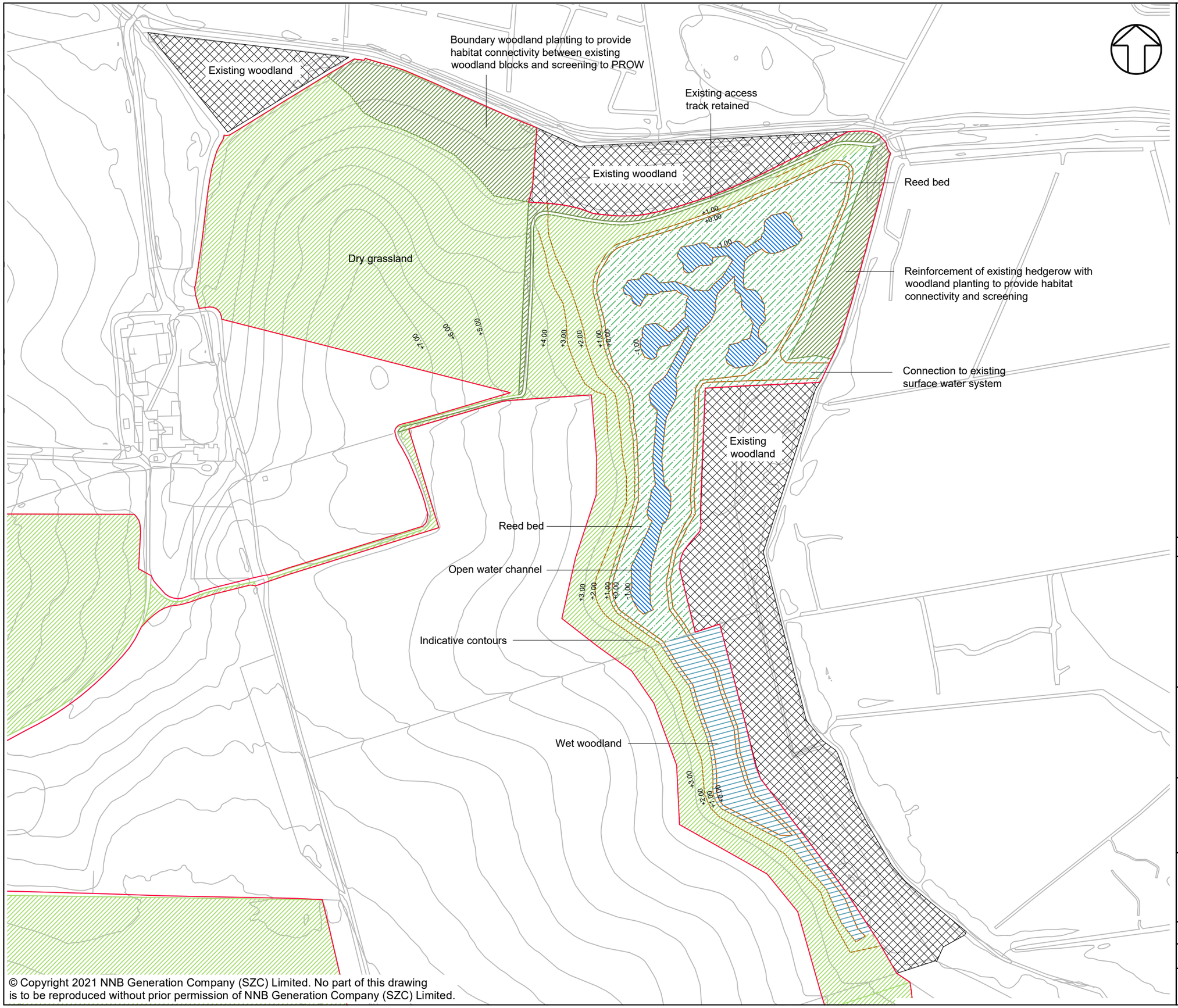
APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
LOCATION PLAN OF THE SSSI CROSSING

DRAWING NO:
FIGURE 2.9.C5.2

DATE:	DRAWN:	SCALE :
JAN 2021	R.G.	NTS



NOTES

KEY

- Existing contour
- Proposed contour
- Existing woodland
- Proposed woodland
- Proposed wet woodland
- Proposed reed bed
- Proposed dry grassland
- Open water channel

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APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
REEDBED AND WET WOODLAND HABITATS TO BE CREATED IN THE NORTH EASTERN EXTENT OF THE SITE

DRAWING NO:
FIGURE 2.9.C5.3

DATE:	DRAWN:	SCALE :	REVISION:
JAN 2021	LDA	NTS	2.0

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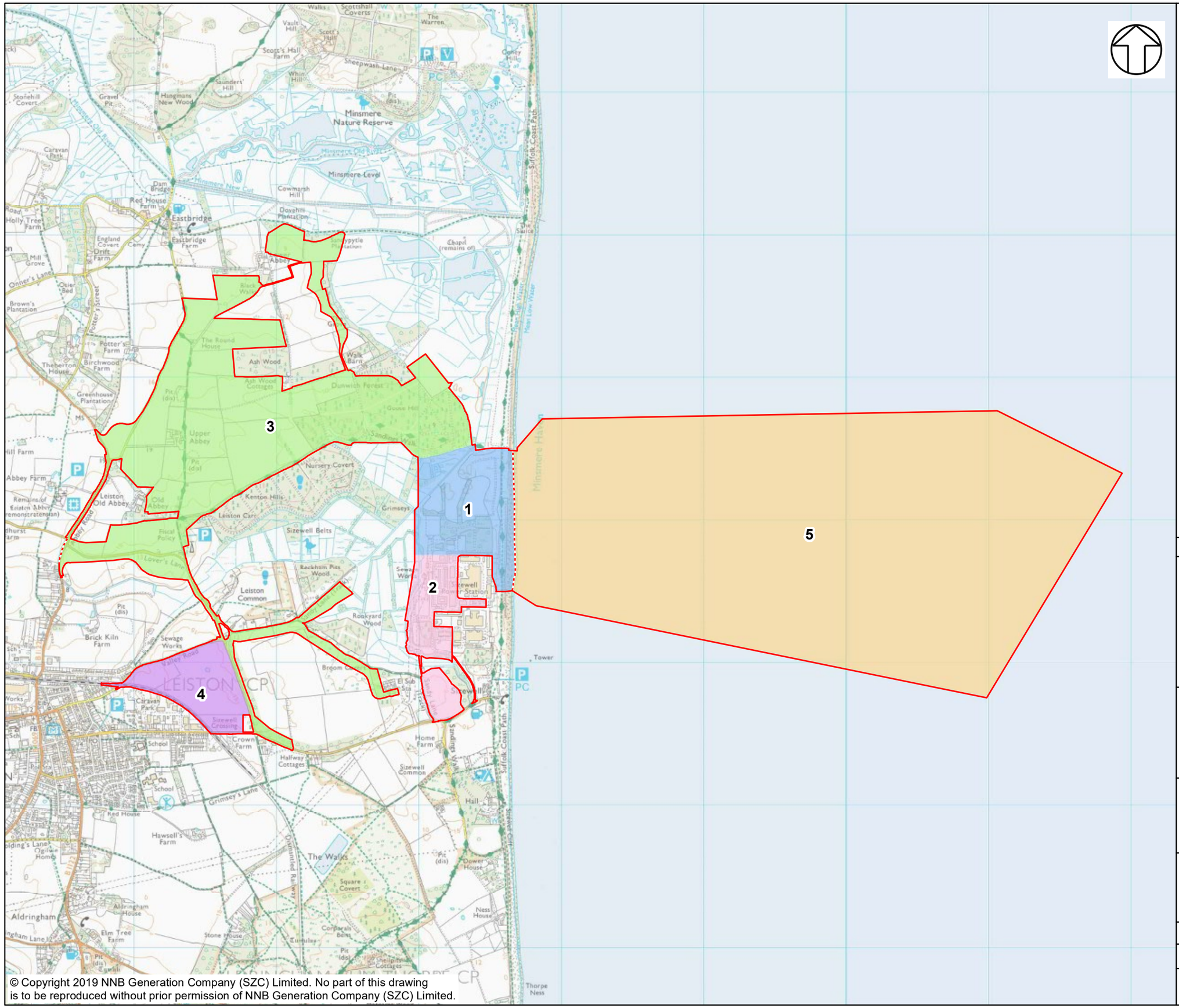

NOTES

KEY

- SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY
- DEMARCATION LINE

MAIN DEVELOPMENT SITE AREAS

- 1. MAIN PLATFORM
- 2. SIZEWELL B RELOCATED FACILITIES AND NATIONAL GRID LAND
- 3. TEMPORARY CONSTRUCTION AREA
- 4. LAND EAST OF EASTLANDS INDUSTRIAL ESTATE - LEEIE
- 5. OFFSHORE WORKS AREA

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APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
MAIN DEVELOPMENT SITE:
SITE SUB AREAS

DRAWING NO:
FIGURE 14C6B.1

DATE:	DRAWN:	SCALE :
JAN 2020	J.W.	1:25,000 @A3

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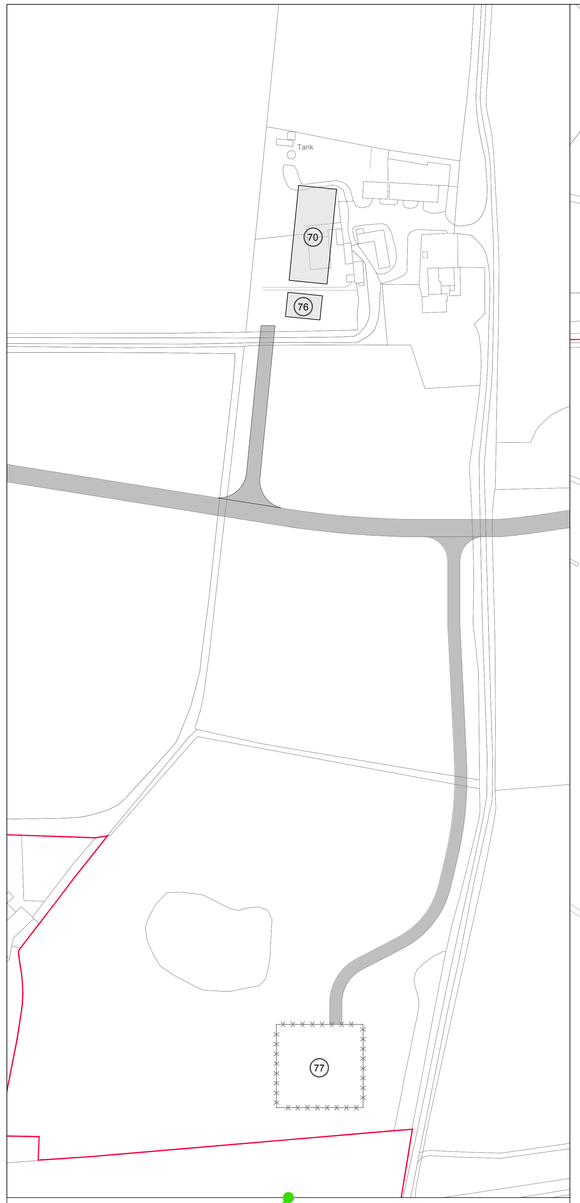

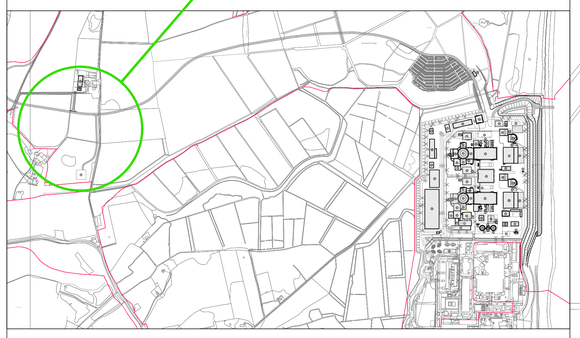

KEY PLAN

Ref:	Building	Ref:	Building
	Nuclear Island		**Ancillary Buildings - Plant/Office/Access/ Storage/Fuel & Waste Management**
01	Reactor Building	34	Demineralisation Station
02	Fuel Building	35	Valve Room for Demineralisation Station
03	Fuel Building Hall	36	Auxiliary Boilers
04	Boron Storage Building	37	Hydrogen Storage
05	Safeguard Elec Building	38	Oxygen Storage
06	Safeguard Mech Building	39	Hydrazine Storage
07	Nuclear Auxiliary Building	41	Raw & Potable Water Storage/Supply
08	Access Tower	42	Degassed Water Storage Tank
09	Radioactive Waste Storage Building	43	Marine Works Outfall Structure
10	Radioactive Waste Process Building	79	Chloronation Plant Tank
11	Radioactive Waste Treatment Building (Unit 2)	44	Interim Spent Fuel Store
12	Hot Laundry Building	45	Intermediate Level Waste Interim Storage Facility
13	Hot Workshop, Hot Warehouse, Facilities For Decontamination	46	Conventional Waste Store
14	Effluent Tanks & Refuelling Water Storage Tanks	47	Transit Area for Very Low & Low Level Waste
15	Emergency Diesel Generator Buildings	50	Main Access Control Building
16	Cooling Water Discharge Weir Buildings - Type 1	51	Secondary Access Control Building
17	Cooling Water Discharge Weir Buildings - Type 2	52	Auxiliary Administration Building
18	Nuclear Island Demineralised Water Tank	54	Emergency Response Centre
		58	Emergency Response Energy Centre
	Conventional Island	59	Meteorological Station
21	Turbine Hall	65	Chemical Products Storage
22	Conventional Island Electrical Building	66	Garage for Handling Facilities
23	Gas Insulated Switch Gear Building	67	Oil & Grease Storage
24	Main Transformer Platform	68	Contaminated Tools Store
25	Unit Transformer Platform	69	Warehouse
26	Auxiliary Transformer Platform	71	Equipment Store for Interim Spent Fuel Store
27	Conventional Island Demineralised Water Tank	74	Sewage Treatment Plant
	Operational	75	National Grid Substation Building
60	Operational Service Centre	53	Off-Site Delivery Checkpoint
61	Sky Bridge	70	Emergency Equipment Store
	Cooling Water Pumphouse & Associated Buildings	76	Back-Up Generator
28	Cooling Water Pump House	77	Ancillary Substation Compound
29	Forebay	79	Chlorination Plant
31	Outfall Pond Building		
32	Filtering Debris Recovery Pit		
33	Fire-Fighting Water Building		

DRAWING SYMBOLS & LEGEND

	NATIONAL GRID PYLONS		BUILDING STRUCTURES
	PYLONS & LINES - SZC Co STANDARD		
	FENCES		
	SIZEWELL C MAIN DEVELOPMENT SITE BOUNDARY		

THE MAXIMUM BUILDING HEIGHT FOR BUILDINGS / STRUCTURES COMPRISES THE ROOF HEIGHT STATED ON THIS DRAWING AND AN ADDITIONAL 3M TO TAKE ACCOUNT OF ANY ADDITIONAL ROOF PLANT OR MACHINERY THAT MAY PROTRUDE ABOVE THE STATED ROOF HEIGHT.

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APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
MAIN DEVELOPMENT SITE
GENERAL ARRANGEMENT
ILLUSTRATIVE - FOR INFORMATION

DRAWING NO:
FIGURE 14C6B.2

DATE:	DRAWN:	SCALE:
JAN 2020	SB	NTS

SCALE BAR:

NOTES

KEY

- Sizewell C Main Development Site Boundary
- Demarcation Line
- Hedgerows
- Mixed Woodland/Trees
- Dry Sandlings Grassland
- Semi-Improved Grassland
- Arable Land
- Amenity Landscape
- Marsh, Fen and Reedbed
- Vegetated Dunes and Shingle Beach

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APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
LANDSCAPE MASTERPLAN (OPERATIONAL)
ILLUSTRATIVE - FOR INFORMATION

DRAWING NO:
FIGURE 14C6B.3

DATE:	DRAWN:	SCALE :
JAN 2020	S.G	NTS

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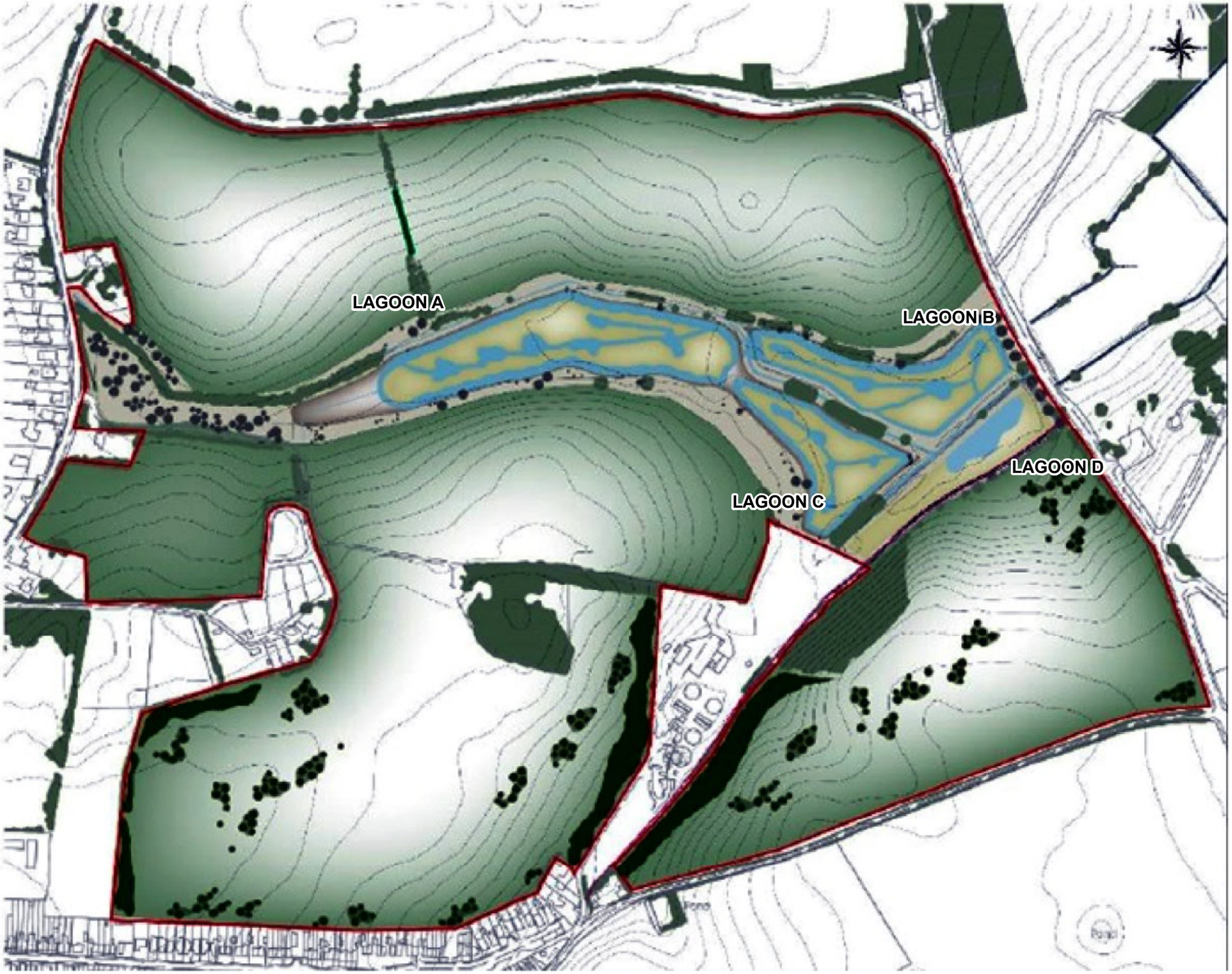

NOTES

KEY

NOT PROTECTIVELY MARKED

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VOLUME 3
APPENDIX 2.9.C5
WATER VOLE DRAFT LICENCE UPDATE - METHOD STATEMENT

DRAWING TITLE:
ALDHURST FARM HABITAT CREATION

DRAWING NO:
FIGURE 14C6B.7

DATE:	DRAWN:	SCALE :
JAN 2020	R.G.	NTS

ANNEX B: APPROVED ECOLOGY AND LANDSCAPE MANAGEMENT PLAN FOR ALDHURST FARM WATER VOLE AREA

ANNEX C: REVIEW OF LIKELIHOOD OF SIGNIFICANT FRAGMENTATION FROM SSSI CROSSING

C.1. Introduction

C.1.1. This section of the report outlines the rationale behind the assessment that there will be no significant impact from fragmentation.

C.2. Culvert Design for Water Vole

C.2.1. There is limited evidence as to whether culverts act as a barrier to water vole movement along watercourses. The Water Vole Conservation Handbook (Ref. 6) states that 'culverting does not seem to provide a major problem to water vole movement or fragmentation', although it also says that 'length may present a problem to water vole daily movement and dispersal'.

C.2.2. A review of the literature regarding the use of crossing structures by water vole, carried out to assess the potential impacts for culverts and bridges to form a barrier, and to assess potential mitigation options. From this review:

- in terms of distance alone, a 68m culvert within the territory of a water vole would not be too great a distance for water vole to negotiate;
- in terms of distance alone, a dispersing water vole could readily move 68m through a culvert, if required;
- the Sizewell Marshes SSSI and Minsmere South Levels water vole colonies are likely to be large enough to be genetically viable in the long term. If a barrier effect were to occur as a result of the construction of the Sizewell Marshes SSSI crossing, i.e. assuming that neither territorial nor dispersing individuals are prepared to use a structure (whether bridge or culvert), then the link along the Leiston Drain between the two populations is unlikely to be critical to the maintenance of either the Sizewell Marshes SSSI or Minsmere South Levels populations in the long term; and
- the potential exists to design a culvert to increase the likelihood of the structure being used by water vole, so that it is less likely to represent a barrier that would critically impact on the long-term maintenance of the combined Sizewell Marshes SSSI and Minsmere South Levels populations.

C.2.3. As a result of the literature review it was assessed that there would be no significant fragmentation as a result of the new culvert across the SSSI.

C.2.4. The literature review below suggests the following design measures would increase the likelihood of a structure being used by water vole, although robust evidence that such measures work is lacking.

- Large box culverts allow maximum light to pass through.
- Ideally, the diameter of any culvert should be at least 2000mm with a berm included, and culverts should be straight with no bends, so light can be viewed at both ends.
- Box culverts are better for water vole than pipe culverts.
- Gabions installed within each culvert can be used to provide a shelf just above mean water level, to permit water vole to pass easily from one end of the culvert to the other; these should be fully integrated into the existing bank at either end. This may also allow water vole to leave the water to rest, if required.
- Disturbed banks and gabions should be hydro-seeded to encourage rapid regeneration of vegetation.

C.2.5. The culvert proposed as a component of the development has been designed with these parameters in mind.

C.3. Detailed literature review

C.3.1. The table below (**Table C3.1**) outlines the literature reviewed that informed the conclusion that the new culvert would not cause significant fragmentation of populations of water vole.

Table C3.1: Results of detailed literature review

Evidence of water vole using culverts	
Small mammal use of modified culverts on the Lolo South Project of Western Montana (Ref. 8)	Several small mammal species were found using a culvert in Montana under a highway. A total of six culverts were monitored over a distance of three miles along a series of wetlands – three with 25inch shelves and three without as controls. Small and large mammals used the shelving.
An evaluation of corrugated steel culverts as transit corridors (Ref. 9).	• In 1995, 12 dry corrugated steel pipe culverts (35 x 1m) with soil substrate were installed at 50 m intervals under a four-lane highway at one wetland. Eight of the culverts were monitored. At another wetland, two wet cross-drainage corrugated steel pipe culverts (31 x 0.6m) were monitored. Aluminium track-plates covered with soot were installed 1-2m inside each culvert and were monitored nine times in July-October 2000. • Small mammals used most of the eight dry culverts, particularly racoons (11% of plates), species from the weasel family (32%) and mice, vole and shrews (31%). Similar species, although in much lower numbers were recorded using wet culverts.
Water vole wander across 'fragmented' Scottish habitat (Ref. 10)	"Those animals typically have a home range of a few hundred square meters, and we found them moving two to three kilometres, a few even moving 15km between [the site of] their birth and their first reproduction."
Water Vole Conservation Handbook (Ref. 6)	Open – sized box culverts up to 30-35m in length have been shown to be used by water vole. Water vole were shown to colonise from an existing population isolated by culverts of this length. Radio-collared water vole in Northumberland were shown to move considerable distances in an upland environment with many small culverts and pipes.
Kevin O'Hara, Project Officer Northumberland Wildlife Trust, pers. comm.	Kevin has undertaken studies looking at water vole and culverts. In his professional opinion: • a 70m culvert would not be considered a major barrier to the movement of water vole. • culverts should be straight with no bends, so light can be viewed at both ends. • a minimum circumference of 600mm is recommended. • an option that allowed pockets of vegetation to establish may improve the suitability of any corridor for the passage of water vole.

APPENDIX 2.9.D: FEN MEADOW STRATEGY

CONTENTS

TABLES

Plates

None provided.

FIGURES

None provided.

APPENDICES

None provided.

1 BACKGROUND

1.1.1 The Sizewell C (SZC) proposals would lead to the permanent loss of approximately 0.5ha of 'fen meadow' habitat from the Sizewell Marshes SSSI. This permanent loss arises from the size and location of the SZC main platform to the north of the existing Sizewell B station. The platform location is constrained to the west and north by the SSSI and to the east by the coast and the appropriate coastal defence alignment such that the loss of this area of fen meadow is unavoidable.

1.1.2 Sizewell Marshes SSSI is designated in part for its fen meadow habitats and the loss of the fen meadow habitat from the SSSI leads to a need to provide compensatory habitat for this loss. SZC Co. is therefore proposing to deliver substantially larger areas of compensatory habitat at a series of off-site locations and has undertaken an extensive series of studies to define these. These studies are summarised in **section 4**.

1.1.3 The Development Consent Order (DCO) application submitted in May 2020 included two fen meadow compensation sites at Benhall and Halesworth. As a result of further engagement with stakeholders, a third site at Pakenham is also included to provide further compensatory fen meadow habitat. The application for development consent [now as amended with a recent change application] includes within the draft order limits, the three sites identified as follows:

- Works no.7: Fen Meadow compensation site at Benhall.
- Works no.6: Fen Meadow compensation site at Halesworth.
- Works no. 18: Fen Meadow compensation site at Pakenham.

1.1.4 This document has been prepared to define SZC Co's commitment to provide appropriate compensation measures to mitigate the loss of fen meadow habitat through the creation of compensatory fen meadow habitats, and the provision of a contingency fund. SZC Co. proposes that a 'Fen Meadow Plan' be prepared in accordance with this Fen Meadow Strategy and be subject to a DCO Requirement 14A, in the following form:

Main development site: Fen meadow

(1) Vegetation clearance within Sizewell Marshes SSSI, pursuant to Work No. 1A must not be commenced until a fen meadow plan for the development of fen meadow has been submitted to and approved by East Suffolk Council, in consultation with West Suffolk Council and the relevant Statutory Nature Conservation Body. The fen meadow plan must be

developed in general accordance with the Fen Meadow Strategy and include details of proposed works, including—

(i) landscape and planting details;

(ii) water management measures; and

(iii) an implementation timetable for the works.

(2) Work No. 6, Work No. 7 and Work No. 18 must be carried out in accordance with the approved fen meadow plan.

2 SCOPE

2.1.1 The document addresses the compensatory habitats required for the permanent loss of fen meadow habitats from the Sizewell Marshes SSSI, associated with the construction of the Sizewell C nuclear power station. This impact is assessed in **Volume 2, Chapter 14** of the **ES** (Doc Ref. 6.3) [AS-033].

2.1.2 This document does **not** address other potential impacts on the fen meadow habitats which are included in the ES. These other impacts are assessed in the **Volume 2, Chapter 14** of the **ES** (Doc Ref. 6.3) [AS-033], as summarised in table below.

Table 2.1: References to fen meadow impacts in the ES

Impact	Paragraph References
Temporary 'landtake' or other use of land associated with installation of replacement overhead lines	14.3.34, 14.4.16, 14.7.125, 14.7.131-136
Air Quality impacts	14,7,149-160
Hydrological impacts	14.7.139-148

2.1.3 Mitigation measures for these impacts are defined within the ES as relevant and secured within the **Code of Construction Practice (CoCP)** (Doc Ref. 8.11(A)) and the Water Level management Plan (in prep) and are not considered further.

3 THE NEED FOR COMPENSATORY FEN MEADOW HABITAT

3.1.1 The overarching NPS for Energy (EN-1) and NPS for Nuclear Power Generation (EN-6) (Ref 1) provide the primary policy framework within which the application for development consent will be considered. Several paragraphs within NPS EN-1 are directed towards the issue of impacts to biodiversity interests and the specifically landtake to SSSIs. Two

paragraphs within NPS EN-6 directly address the issue of landtake from the Sizewell Marshes SSSI and specifically in respect of 'wet meadows', as follows.

Table 3.1: Topic requirements within National Policy Statements EN-1 and EN-6

Ref.	NPS topic requirement
EN-1 5.3.7	*'As a general principle, and subject to the specific policies below, development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives []; where significant harm cannot be avoided, then appropriate compensation measures should be sought.'*
EN-1 5.3.11	*'Where a proposed development on land within or outside an SSSI is likely to have an adverse effect on an SSSI (either individually or in combination with other developments), development consent should not normally be granted.* *Where an adverse effect, after mitigation, on the site's notified special interest features is likely, an exception should only be made where the benefits (including need) of the development at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs. The [IPC] should use requirements and/or planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest.'*
EN-6 C.8.60	*'Some responses focused on designated sites including Sizewell Marshes Site of Special Scientific Interest (SSSI) and Leiston-Aldeburgh SSSI, and potential effects on Minsmere-Walberswick Heaths and Marshes SSSI,* ***from which the site boundary includes some land-take****. Some responses questioned how direct land take could be mitigated.'*
EN-6 C.8.63	*'The Appraisal of Sustainability identified the potential for the mitigation of biodiversity effects on sites of UK wide conservation importance (Sizewell Marshes SSSI), including the creation of replacement habitat. The Appraisal of Sustainability notes that developers could avoid or minimise losses and disturbance to protected species through careful site layout, design, routing, location of the development, associated infrastructure, and construction management and*

Ref.	NPS topic requirement
	timings. ***The Appraisal of Sustainability finds that there is potential for habitat creation within the wider area in order to replace lost "wet meadows" habitats of the Sizewell Marshes SSSI, but also finds that it may not be possible to fully compensate for losses of this habitat. The applicant will need to develop an ecological mitigation and management plan to minimise the impacts.'***

3.1.2 The provision of compensatory fen meadow habitats using the approach outlined in this strategy directly addresses the requirement for compensation set out in EN-1 5.3.7 and aligns with the specific direction in EN-6 C.8.63 to develop 'an ecological mitigation and management plan' to replace the 'lost "wet meadows"'.

3.1.3 Irrespective of the requirements outlined in and EN-1 and EN-6, it is acknowledged by SZC Co that landtake to a SSSI should be fully addressed so far as is possible in order to compensate for the adverse effect on the SSSI. SZC Co. is therefore proposing to deliver substantially larger areas of compensatory habitat at a series of off-site locations. The conclusion reached in the ES, in relation to landtake of fen meadow from the SSSI, is that there would be no significant residual effect, provided that the fen meadow strategy is successfully delivered.

3.1.4 In the ES, rush pasture and fen meadow within the Sizewell Marshes SSSI was assigned National/High importance under CIEEEM/EIA methodology criteria respectively given that fen meadow within Sizewell Marshes SSSI would be subject to direct habitat loss. This habitat is listed in the citation for the Sizewell Marshes SSSI. This habitat is nationally scarce and listed on both Section 41 of the NERC Act [Ref 2] and the Suffolk Local BAP [Ref 3].

3.1.5 Detailed survey work and an ecohydrological assessment of the fen meadow vegetation present within Sizewell Marshes SSSI presented in the ES has shown that there is a strong relationship between the most diverse areas of fen meadow and wet ground conditions, low fertility and a neutral-to-basic pH. Details of the ecohydrological assessment are presented within the Plants and Habitats Synthesis Report (Appendix 14B1 of ES Volume 2). Based on National Vegetation Classification (NVC) survey data the fen meadow habitat can be placed within the M22 *Juncus subnodulosus – Cirsium palustre* fen meadow category. The defining characteristic, in what can be a habitat of relatively low floral diversity, is the presence of

Juncus subnodulosus (blunt-flowered rush) and this species is used as the key indicator of fen meadow establishment within this strategy (section 6).

3.1.6 In order to compensate for the loss of fen meadow habitats, SZC Co. has undertaken an extensive series of studies to identify sites where the development of compensatory fen meadow habitats would be possible. These studies are summarised briefly in the next section and the relevant study reports appended to this strategy.

3.1.7 SZC Co is confident that it will be able to create the appropriate quantum of compensatory fen meadow habitats, given the suitability of the sites, however in order to further ensure the loss is adequately compensated for and to recognise the risks which might arise outside of SZC's control, contingency provisions have also been introduced and are defined in Section 7.

4 STUDIES TO DATE

a) Potential for on-site compensatory habitats

4.1.1 Where habitats are lost, it is normally preferable to create compensatory habitats as close to the lost habitats as possible. In 2015 it was concluded that there were no suitable areas within the EDF Energy estate immediately adjacent to the Sizewell Marshes SSSI which could be used to create fen meadow habitats. This is predominantly a function of the topography and soil types and that there are no low-lying areas within the small Leiston drain catchment, but outside the SSSI, which might be suitable for such a habitat creation approach.

b) Off-site compensatory habitats – Phase 1 and Phase 2 studies

4.1.2 Two initial studies focussed on the provision of compensatory fen meadow habitat, and were presented as Phase 1 of the study, which covered a search of the whole of Suffolk and were reported in Wood [REF 4[1]]. This report provides the attributes required for selection.

4.1.3 Five sites were identified for further investigation as they appeared best suited to the potential for creation of fen meadow habitats, being close to existing fen meadow habitats and in river valleys where topography and soil conditions were likely to be suitable. 17 further sites were put on hold subject to further assessment of initial five sites.

[1] Wood (2018). Sizewell C. Fen Meadow Compensation Study – Approach and Initial Site Screen Report 2018. EDF Energy

4.1.4 The five sites identified for further investigation were:

- Site No. 10 – Aldecar Lane (Benhall site, in part);
- Site No. 11 – Watering Lane (Benhall site in part);
- Site No. 28 – Blyth Road (Halesworth site);
- Site No. 33 – Stratford St Andrew; and
- Site No. 54 – Pakenham Fen (Pakenham site).

4.1.5 Phase 2 [Ref 5] of the study involved a one-day site visit to each potential site comprising (except Site No. 33 for which access had not been agreed at the time of the visits):

- A walkabout survey to identify areas where (1) the peat is currently influenced by groundwater or near-surface seepage; and (2) fen meadow species are present within or close to the site margins; and
- A reconnaissance hand augering survey to identify general peat quality (substrate condition), sub-surface geological materials, presence of water table and areas of upwelling groundwater; and consideration of broad options for water management and potential for changes to land management.

4.1.6 The Benhall sites (sites 10 and 11) and Halesworth site (site 28) were visited on 9 and 10 April 2019, with two accessible areas of the Pakenham site (site 54) visited on 30 April and 1 May 2019. The results of Phase 2 of the study were reported in Wood (2019)[2]. Based on the results of these studies, it is considered that the sites that were visited all have good potential for the development of fen meadow. The Pakenham site (site 54) was initially excluded as it was further away from Sizewell C and the area of fen meadow loss and the Benhall sites (sites 10 and11) and the Halesworth site (site 28) were initially considered sufficient to deliver an acceptable quantum of compensatory habitat. The Pakenham site (site 54) has been subsequently introduced to increase the quantum of fen meadow delivered in response to stakeholder concerns. The sites are therefore as follows:

- Works no.7: Fen Meadow compensation site at Benhall (which comprises both sites 10 and 11 combined)
- Works no.6: Fen Meadow compensation site at Halesworth (site 28)

[2] Wood (2019). Sizewell C. Fen Meadow Compensation Study – Report of Visits to Target Sites 2019. EDF Energy

- Works no. 18: Fen Meadow compensation site at Pakenham (site 54)

4.1.7 Within the boundaries of each site, there are areas which hold the greatest potential for fen meadow creation, based on the Phase 2 studies. These are termed the 'primary foci'. Other areas which hold less potential are also defined within the overall site areas. The potential for fen meadow habitat creation at these sites is as follows:

- Benhall: primary locus of habitat creation opportunity of 1.5ha, further area of potential 0.7ha;
- Halesworth: primary locus of habitat creation opportunity of 1.2ha, further area of potential 1.3ha; and
- Pakenham Fen: primary locus of habitat creation opportunity of 4.9ha, further area of potential 10.5ha.

4.1.8 These sites were selected on the basis that they best fulfilled the criteria defined below, giving confidence that fen meadow establishment is achievable:

- Underlying peat is currently influenced by groundwater or near-surface seepage and likely of suitable quality;
- The water table is near surface and likely to influenced by areas of upwelling groundwater
- Fen meadow species are present within or close to the site margins; and
- There are broad options for water management and potential for changes to land management.

4.1.9 Detailed site investigations are underway at all three sites to monitor ground and surface water level flows and determine the management actions which will be described in the Fen Meadow Plan. These investigations and the measures subsequently set out in the Fen Meadow Plan will seek to maximise the extent of the establishment of fen meadow at each site. These investigations are outlined below.

c) Fen Meadow Plan

4.1.10 The Fen Meadow Plan will include conceptual models for the three compensation sites based on detailed data review and investigations and including:

- Detailed ecological survey, including survey of existing fen meadow adjacent/local to the three compensation sites, including Pakenham Meadows SSSI, to identify species, including plants and invertebrates, which would then enable measures to be targeted to encourage their colonisation of newly created fen meadow habitat;
- Review of available groundwater level data (including output from the Environment Agency model for high, low and average groundwater level conditions) and the seasonal variation in groundwater levels. Also effects of groundwater abstraction on groundwater levels below the site;
- Collection of topographic data;
- Collection of surface water level and groundwater level data to determine the relationship between groundwater and surface water levels on site. Also detailed study of the existing and wider ditch network to determine potential for water management without risk to upstream receptors; and
- Collection of hydrochemical data.
- Preliminary conceptual design to define:
  - Most appropriate restoration methods;
  - How water levels could be managed (if needed); and
  - To what extent earthworks will be required.

4.1.11 A series of three reports which will lead to the establishment of the Fen Meadow Plan will be prepared to further define the approaches to maximise the extent of fen meadow habitats at the three sites. The reports will be delivered in order to provide updates to the planning process, as follows:

- Fen Meadow Plan Report 1 will be prepared for submission in Q1 2021, to provide the baseline reports for the sites and water data available to that period, timed to inform stakeholders and the commencement of the examination;
- The Fen Meadow Plan Draft 1 will provide further interim data and define in draft the management interventions required to create fen meadow habitats. The measures will include draft monitoring and remedial measures to maximise the extent of the establishment of fen meadow at each site and will describe any interventions that may be required to ensure the successfully delivery of fen meadow of SSSI

quality at each site. This draft will be submitted later in the examination process.

- Fen Meadow Plan Draft 2 will provide the full scope of the plan after 12 months of water data collection at each site and for review by the environment panel. Upon finalisation it will become the **Fen Meadow Plan** and will be submitted to East Suffolk Council for approval in consultation with West Suffolk Council and the relevant Statutory Nature Conservation Body pursuant to the DCO Requirement 14A.

4.1.12 SZC Co will then take forward the establishment of the fen meadow in accordance with the approach set out in the approved Fen Meadow Plan, under the direction of a Review Group (see below) and will seek to maximise the extent of fen meadow habitats at the three sites. Further details of the proposed approach are provided in Section 5 below.

5 ESTABLISHING NEW FEN MEADOW HABITATS

5.1.1 This section outlines the approach for delivering compensatory fen meadow habitats, the interfaces with stakeholders and the monitoring and remedial actions which will be deployed to maximise the chances of successfully establishing the habitat.

5.1.2 Fen meadow establishment is likely to be a relatively long-term endeavour and a ten-year programme of works is outlined below.

a) Review Group

5.1.3 A Review Group would be established under the terms of the Section 106 Agreement and would be responsible for overseeing the establishment of the compensatory habitat works including the delivery of the Fen Meadow Plan.

5.1.4 Further details of the role of the Review Group will be included in the Section 106 Agreement and is likely to include:

- Reviewing the draft Fen Meadow Plan to enable it to be finalised;
- Approving or amending the actions required for the capital works in the first year of the habitat creation at the fen meadow sites;
- On an annual basis, reviewing progress against the success criteria outlined below; and

- In the event of failure to meet the success criteria, to determine how the contingency measures are then deployed.

b) SZC Co / Ecological Contractor

5.1.5 SZC Co, or an ecological contractor appointed by SZC Co, will be responsible for delivering the works outlined below at the compensation sites. and which will be defined further in the Fen Meadow Plan.

5.1.6 As noted above, in the event of a failure to meet the success criteria (see section 6), the Review Group would determine how the contingency approach (see section 7), to develop alternative sites, should be taken forward.

c) Site Establishment

5.1.7 SZC Co is taking steps to acquire the land at each of the three sites by agreement. In the event such an agreement is secured for any given site, the fen meadow proposals would be taken forward once the relevant measures for habitat creation are defined, subject to any consents that may be required. The DCO application includes powers to compulsorily acquire the land required to undertake the required habitat compensation works, so that the fen meadow proposals can still be delivered in the event the land cannot be acquired by agreement. In that case, the habitat creation works would be taken forward once the DCO is made.

5.1.8 Once the land for the three fen meadow locations has been secured, either by agreement or by compulsory acquisition powers in the DCO as made, SZC Co will undertake the relevant 'Year 1 works' to be defined in the Fen Meadow Plan and as detailed below at 5.1.9 onwards, within a period to be defined within the plan and linked to the commencement of works in the DCO as made.

5.1.9 The Year 1 works, at each of the three sites, will include, but not be limited to the following:

- Any further ecological surveys required[3] to further inform final design proposals and or protected species mitigation or monitoring requirements.
- Making applications for any necessary consents.

[3] Noting that ecological surveys have been or are being undertaken in the period 2019-2021 at each site in any event to inform the proposed **Fen Meadow Plan**

- Site acquisition and establishment of any required access or works compound.
- Any required ground works, such as reworking of ground levels, removal of field drains or re-alignment of surface drains or ditches, preparation of substrate if required.
- Any required installation of monitoring equipment, such as boreholes or gauge boards.
- Translocation of 'seed turves' from the impacted areas within the fen meadow landtake from the SSSI, subject to programme.
- Green hay transfers from the Sizewell Marshes SSSI.

5.1.10 No habitat creation of the target habitat per se is expected in Year 1.

d) Management – Years 2-5

5.1.11 The Year 2-5 works, at each of the three sites, will include, but not be limited to the following:

- Annual green hay transfers from the Sizewell Marshes SSSI, or in the case of the Pakenham site, from the adjacent SSSI, if this is viable.
- Monitoring and remedial works to any of the infrastructure installed in year 1 and any ongoing required management actions identified to optimise the water levels and ground conditions for the establishment of the target habitat.
- Habitat monitoring.

e) Management – Years 6-10

5.1.12 Year 6-10 works at each of the three sites, will include, but not be limited to the following:

- Supplementary green hay transfers from the Sizewell Marshes SSSI, as necessary, or in the case of the Pakenham site, from the adjacent SSSI, if this is viable.
- Any ongoing required management actions identified to optimise the water levels and ground conditions for the establishment of the target habitat.

- Habitat monitoring.

5.1.13 Success at any given site would be determined in Year 10, as follows, for each site:

- Completion of works defined above for Years 1-10.
- Establishment of the target water levels, in accordance with the Fen Meadow Plan.
- Establishment of M22 habitat, as determined by quadrat survey, at the relevant site.
- Establishment of a **long-term management plan** to maintain the newly established fen meadow habitat for the operational lifetime of the Sizewell C Project.

5.1.14 These criteria will determine whether M22 is established at the relevant site. The spatial extent of M22 establishment will be mapped and the area of M22 habitat calculated.

f) Management – Year 10 onwards

5.1.15 Year 10 and onwards works at each of the three sites will comprise management in accordance with the **long-term management plan.**

6 THE TEST OF SUCCESS

6.1.1 The critical metric is the successful establishment, by Year 10, of at least 4.5ha of M22 fen meadow habitat, under the NVC across any combination of the three sites. Providing that is achieved, with long term management plans in place to secure this compensatory habitat in the long term, then the Fen Meadow Plan will have been successful.

6.1.2 In Year 10, the Review Group will confirm, or otherwise, whether the target quantum of 4.5ha of fen meadow has been achieved

6.1.3 If 4.5ha of M22 habitat has not been established by this time, the contingency provisions detailed in section 7 below and secured in the Section 106 Agreement will be triggered.

6.1.4 In Year 10, the Review Group will also review and approve as relevant the **long-term management plan** for each site where fen meadow habitat has been successfully established.

7 CONTINGENCY PROVISIONS

7.1.1 As stated above, SZC Co is confident that it will be able to create the appropriate quantum of compensatory fen meadow habitats, given the suitability of the sites. However, in order to further ensure the loss is adequately compensated for and to recognise the risks which might arise outside of SZC's control, contingency provisions have also been introduced.

7.1.2 The continency provisions will provide funding for another party or parties, to create new fen meadow habitats or undertake improvements to existing fen meadow habitats across Suffolk, to deliver SSSI quality fen meadow habitats based upon a material shortfall in delivering M22 fen meadow habitats at the three fen meadow compensation sites. A phased release of funding is proposed to align with the quantum of the shortfall in the delivery of M22 fen meadow habitats, as follows.

Table 7.1: Phased release of funding for fen meadow

Fen Meadow delivered (Year 10)	Fen Meadow Shortfall (Year 10)	Fund released
Greater than 4.5ha	None	0%
3.0-4.5ha	0.5-1.5ha	40%
2.0-3.0ha	1.5-2.5ha	60%
1.0-2.0ha	2.5-3.5ha	80%
0.0-1.0ha	3.5-4.5ha	100%

7.1.3 The Review Group would determine the most productive way forward to deliver new or enhance existing fen meadow habitats in appropriate locations, drawing on input from the statutory and non-statutory sectors and use the funding released to that end.

REFERENCES

1. National Policy Statements for energy infrastructure: National Policy Statement for Energy (EN-1) and National Policy Statement for Nuclear Power Generation (EN-6). July 2011. Available from: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure (Accessed 12 March 2019).

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4. Fen Meadow Phase 1 report

5. Fen Meadow Phase 2 report

6. Fen Meadow Phase 3 scope

7. Fen Meadow Phase 3 interim report (in prep)

8. ES Volume 2 Appendix 14C4 – Fen Meadow Phase 2 Report

9. Sizewell Marshes SSSI citation