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Rev. 2



### **Onshore Cable Works**

# European Protected Species Report DCO Requirement 29

## Applicable to Work Numbers 5B to 20, 25 to 38, 41 to 49 and 52 to 61

Note: this report contains confidential information relating to legally protected species which should be for limited circulation only

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#### 1 INTRODUCTION AND SCOPE

#### 1.1 Project Overview

- East Anglia Three Limited (EATL) was awarded a Development Consent Order (DCO) by the Secretary of State, Department of Business, Energy and Industrial Strategy (DBEIS) on 7 August 2017 for the East Anglia THREE Offshore Windfarm (EA THREE). The DCO granted consent for the development of a 1,200MW offshore windfarm and associated infrastructure. The DCO has now been subject to three non-material variations:
  - In March 2019 EATL submitted a non-material change application to DBEIS to amend the consent to increase the maximum generating capacity from 1,200MW to 1,400MW and to limit the maximum number of gravity base foundations to 100. In June 2019 DBEIS authorised the proposed change application and issued an Amendments Order.
  - In July 2020 EATL submitted a second non-material change application to DBEIS to amend the parameters of its offshore substations and wind turbines. On 15 April 2021 DBEIS authorised this proposed change application and issued an Amendments Order.
  - In August 2021 EATL submitted a third non-material change application to DBEIS to amend the consent to remove the maximum generating capacity of 1,400MW and to amend the parameters of its wind turbines (a decrease in the number of turbines and an increase in their hub height and rotor radius). In September 2022 DBEIS authorised the proposed change application and issued an Amendments Order.
- The onshore construction works associated with EA THREE will have a capacity of 1,400MW and transmission connection of 1,320MW. The construction works will be spread across a 37km corridor between the Suffolk coast at Bawdsey and the converter station at Bramford, passing the northern side of Ipswich. As a result of the strategic approach taken, the cables will be pulled through pre-installed ducts laid during the onshore works for East Anglia ONE Offshore Windfarm (EA ONE), thereby substantially reducing the impacts of connecting to the National Grid (NG) at the same location. The infrastructure to be installed for EA THREE, therefore, comprises:
  - The landfall site with one associated transition bay location with two transition bays containing the connection between the offshore and onshore cables;
  - Two onshore electrical cables (single core);
  - Up to 62 jointing bay locations each with up to two jointing bays;
  - One onshore converter station, adjacent to the EA ONE Substation;
  - Three cables to link the converter station to the National Grid Bramford Substation;
  - Up to three onshore fibre optic cables; and
  - Landscaping and tree planting around the onshore converter station location.
- Since the granting of the DCO, the decision has been made that the electrical connection for EATHREE will comprise a high voltage direct current (HVDC) cable rather than a high voltage alternating current cable and, therefore, the type of substation that will be required is a HVDC converter station. The substation will be referred to here as a 'converter station' and this amended terminology has been agreed with the relevant authorities on 15 November 2020. It has also been determined that only one converter station will be constructed rather than two and that the converter station will be installed in a single construction phase.
- 4. The EA THREE onshore works commenced development in July 2022, with works at the Converter Station, Paper Mill Lane, Playford Corner and Clappits.

#### 1.2 Purpose and Scope

5. This European Protected Species (EPS) Report presents information relating to certain species with the highest level of legal protection. This document sets out the results of update survey information and provides appropriate risk-based mitigation measures that are designed to avoid adversely affecting resident populations of European Protected Species within the vicinity of the Development Order Limits (DOL) of the Onshore Cable works for the EA THREE Offshore Windfarm. This document has been produced to discharge DCO Requirement 29(1) and (2) which state:

**29** (1) No stage of the connection works may commence until final pre-construction survey work has been carried out to establish whether a European protected species is present on any of the land affected, or likely to be affected, by that stage of the connection works or in any of the trees to be lopped or felled as part of that stage of the connection works.

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(2) Where a European protected species is shown to be present, the relevant part(s) of the connection works must not begin until, after consultation with Natural England and the relevant planning authority, a scheme of protection and mitigation measures has been submitted to and approved by the relevant planning authority. The connection works must be carried out in accordance with the approved scheme.

- Part 3 of Requirement 29 states that ""European protected species" has the same meaning as in regulations 40 and 44 of the Conservation of Habitats and Species Regulations 2010(a)."1
- The scope of this document relates to the onshore cable route that runs from the landfall location at Bawdsey to the Converter Station works located near Bramford, Suffolk. This comprises Work Nos. 5A to 61 in the DCO (see Figure 1 Site Context Plan) as defined in the EA THREE DCO. The Requirement Discharge Documents (RDDs) relating to the construction and installation of cable route infrastructure within the Clappits Works Stage (Work Nos. 21 to 24), Playford Corner Works Stage (Work Nos. 39 and 40), Paper Mill Lane Works Stage (Work Nos. 50 and 51) and Converter Station Stage (Work Nos. 62 to 69) have previously been discharged. For the sake of completeness and to provide a suite of comprehensive RDDs for use by the Principal Contractor for the cable route (NKT), the infrastructure and activities that fall within these areas and the associated management measures for these will also be addressed in this document. Nevertheless, this document seeks only to discharge this Requirement with respect to Works Nos. 5B to 20, 25-38, 41-49 and 52 -61.
- 8. The purpose of the European Protected Species Report is to ensure that measures will be implemented to minimise and avoid any adverse impacts to European Protected Species and to reduce or eliminate the risk of offences being committed under relevant wildlife legislation.
- 9. In respect of this report, relevant EPS are Great Crested Newt (GCN), bats and otter as habitats for these species occur within the DOL.
- The following documents have been used to inform this European Protected Species Report: Pre-construction Ecological Survey; Walkover (EA3-GEN-ENV-REP-BOW-000001); and Pre-construction Ecological Survey Report; Great Crested Newts (EA3-GEN-ENV-REP-BOW-000002). These can be made available if required. Up to date survey information is included within this report.

#### 1.3 Structure of this Document

- Habitat within the DOL associated with the Onshore Cable Works is predominantly arable land with hedgerows, adjacent broadleaved woodland and watercourses intersecting the cable corridor. Associated with these habitats are the following potential European Protected Species interests: Great Crested Newt (GCN, *Triturus cristatus*), Bats (*Chiroptera* sp.) and otter (*Lutra lutra*).
- This report provides information in relation to GCN, bats and otter in terms of current survey information (GCN Section 4, Otters Section 5 and Bats Section 6) and species protection information (GCN Section 7, Bats Section 8 and Otters Section 9). Survey information is presented on plans in Appendix 1 and Appendix 2.

#### 2 ABBREVIATIONS

ccs	Construction Consolidation Site
DBEIS	Department of Business, Energy and Industrial Strategy
DBH	Diameter at Breast Height
DCO	Development Consent Order
DOL	Development Order Limits
EA ONE	East Anglia ONE Offshore Windfarm
EA THREE	East Anglia THREE Offshore Windfarm
EATL	East Anglia THREE Limited
EcoMP	Ecological Management Plan

<sup>&</sup>lt;sup>1</sup> The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the 2017 Regulations so that they continue to operate effectively with respect to 'European species', following the UK's departure from the European Union. Most of these changes involved transferring functions from the European Commission to the appropriate authorities in England and Wales. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant. <a href="https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations

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ECoW	Ecological Clerk of Works
eDNA	Environmental DNA
EPS	European Protected Species
EPSL	European Protected Species Licence
ES	Environmental Statement
FCS	Favourable Conservation Status
GCN	Great crested newt
HDD	Horizontal Directional Drilling
HSI	Habitat Suitability Index
HVDC	High Voltage Direct Current
MW	Megawatt
NE	Natural England
NG	National Grid
RAMS	Reasonable Avoidance Measures

#### **3 LEGAL REQUIREMENTS**

The species referred to in this plan are all protected by national legislation. This section provides a summary of the relevant legislation for each of those species and licensing. Table 3-1 lists the relevant legislation, schedules, and offences under the stated legislation. The species that the legislation applies to have been identified within and in the vicinity of the DOL during the surveys to inform the Environmental Statement (ES) and on-going surveys during the EA ONE construction period, EA ONE post construction monitoring and for pre-construction surveys for EA THREE.

Table 3-1 – Summary of Relevant Legislation

Relevant Legislation	Schedules and Offences	Species
The Conservation of Habitats and Species Regulations 2017 (as amended)	Listed on Schedule 2 – subject to the provisions of Regulation 41.  It is an offence to:  • Deliberately capture, injure or kill any wild animal of a European protected species [Regulation 41 (1)(a)]  • Deliberately disturb any wild animals of any such species [Regulation 41 (1)(b)]  • Disturbance of animals includes any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young [Regulation 41 (2)(a)(i)] or in the case of animals hibernating or migratory species, to hibernate or migrate [Regulation 41 (2)(a)(ii)] or to affect significantly the local distribution or abundance of the species to which they belong. [Regulation 41 (2)(b)]  • Deliberately take or destroy the eggs of such an animal [Regulation 41 (1)(c)]  • Deliberately damage or destroy a breeding site or resting place of such an animal [Regulation 41 (1)(d)].	European protected species i.e.:  Great crested newts Bats (all species) Otter

- European Protected Species Licenses (EPSL) for mitigation are issued under the Conservation of Habitats and Species Regulations 2017 (as amended) only after three tests have been satisfied in relation to the proposed action, as follows:
  - The proposed action must be for the purpose of preserving public health or public safety or other imperative reasons of
    overriding public interest including those of a social or economic nature and beneficial consequences or primary importance
    for the environment; and for preventing serious damage to property;
  - There is no satisfactory alternative to the proposed action; and
  - The action authorised will not be detrimental to the maintenance of the species concerned at a Favourable Conservation Status (FCS) in their natural range.

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Individual mitigation licences for the purpose of development are available, under the Conservation of Habitats and Species Regulations 2017 (as amended) for GCN, bats and otter.

#### 4 GCN SURVEYS

#### 4.1 Baseline

- The detailed baseline relating to GCN is provided in section 23.5.4 of Chapter 23 Terrestrial Ecology of the ES. There are background records of GCN within the 2km area of search of the DOL.
- Ponds where GCN were present during the surveys are identified on Figure 23.8a 23.8g in the ES and are shown on the constraints plans in Appendix 1. These ponds were included under Natural England licence 2016-24231-EPS-MIT during the construction of EA ONE.
- 18. Baseline surveys have been updated by surveys of all ponds between 2021-2023 in the vicinity of the cable route. This report focuses on those ponds that are relevant (within 250m) of the proposed cable works and all associated activities.

#### 4.2 Methodology

- 19. Environmental DNA (eDNA) surveys were undertaken for all ponds within proximity to the DOL.
- 20. Sampling methods for eDNA analysis followed those outlined in Biggs et al. 2015. Pond water samples were sent to SureScreen Diagnostics, a Natural England accredited laboratory for eDNA analysis.
- A Habitat Suitability Index (HSI) assessment of each pond was undertaken in accordance with Oldham et al. (2000). HSI is a numerical index, between 0 and 1, with 0 indicating unsuitable habitat and 1 representing optimal habitat.
- If the pond tested positive for GCN in the eDNA test or had previously confirmed GCN presence, a population assessment was undertaken. The population survey methodology followed Natural England's Great Crested Newt Mitigation Guidelines (English Nature, 2001). A combination of survey techniques was used; torch survey, bottle trapping, egg searching and terrestrial searches.
- The surveyors who undertook the surveys between 2021-2023 were: Jack Taylor BSc (Hons), Lucy Pocock BSc (Hons), Mark Breaks BSc (Hons), Sam Robinson BA, Charlotte Green BSc, Alex Robinson BSc (Hons) MSc, Helena Davies BSc (Hons). All were working under licence: 2015-17546-CLS. Surveyors during 2020 were Jade Relf MSc BSc (Hons) ACIEEM NE License 2017-32397-CLS-CLS, Keith Langdon BSc (Hons). All surveys were completed within optimal survey conditions.

#### 4.3 Limitations

- The coronavirus pandemic placed constraints on surveys which prevented bottle trapping being undertaken on the fourth visit in 2021. Other methods were used in the absence of bottle trapping therefore, it was not considered a major constraint to the surveys.
- The eDNA survey was carried out on the 19/03/2021. Whilst the survey was undertaken earlier than the advised period, several factors were taken into account, including the geographic location and the fact that positive eDNA results were returned during the surveys confirming that GCN were active at that time<sup>2</sup>. Where there was any concern regarding data validity (particularly for ponds with previous GCN records) traditional surveys were conducted during the optimal survey window.

#### 4.4 Results

- 26. Twelve relevant ponds were subject to detailed surveys, these are described as follows:
  - P81 is a medium sized pond located within a strip of woodland dominated by ash, oak, and hazel, which is bordered by arable fields to the east. The water is clear with a maximum depth of approximately 50cm; water crowfoot and duckweed are present within the water. The pond banks are formed from steep (45-75-degree angle) earth and are vegetated by dogs mercury, lords-and-ladies, lesser celandine, common ivy, feather moss sp., and creeping buttercup.

<sup>&</sup>lt;sup>2</sup> It should be noted that the current eDNA protocol for Natural England is based on a guidance note produced in 2014, this was a new method at the time and there is increasing evidence to support extending the period (Rees & Baker et al 2017, *The detection of great crested newts year-round via environmental DNA analysis* December 2017 BMC Research Notes 10(1). Luke Gorman CEcol FCIEEM, Stephen Nisbet and Claire Wansbury CEcol CEnv FCIEEM (2020). *Extended Season Environmental DNA Surveys for Great Crested Newts*. In Practice, Dec. 2020.)

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- P69 is a large circular pond within a species poor grassland. The banks are gradual and steep in places, formed from vegetated earth. The water is relatively clear (2/5 turbidity) and approximately 20cm deep at the edges, up to 1.5m at the centre. There is an island within the pond, vegetated by alder and willow. Marginal vegetation comprises brooklime, willowherb, soft rush, burdock, common reed and Mediterranean spurge. The bankside vegetation comprises common nettle, chickweed, red clover, red dead nettle, primrose, creeping thistle, dog violet, yarrow, dovesfoot cranes bill, cow parsley, broadleaved dock, bramble, foxglove, green alkanet, comfrey, lesser celandine, cleavers, birds eye speedwell, garlic mustard, coltsfoot, and daisy. Semi-mature alder and willow trees situated on the banks overhang into the pond. Canada geese were present at the time of survey.
- P70i, j, n and 110 are a collection of shallow ponds surrounded by young willow and alder trees, and bramble scrub. Emergent broadleaf cattail is present throughout some of the ponds. Pond 110 has some algal blooms and very dark water. All of these ponds have been reported as being filled in by the landowner (as of 14/02/23).
- P58 is a large pond surrounded by a small band of woodland. Some chicken pens are located to north, adjacent to the pond. The pond water was turbid so it was difficult to detect water quality. There were signs of some drainage into the pond.
- P53 is a moderately sized, irregular shaped pond situated within a poor semi-improved field. The field is fenced off at all boundaries, and lined with species rich hedgerows, tall ruderal and scattered mature trees. Behind the fence to the west is a ditch, which also feeds into the pond via a narrow, shallow, stagnant, vegetated channel, with lots of willowherb in the channel. Within the pond, there is lots of fallen dead wood, along with sprawling willow trees overhanging into the water, creating a lot of leaf litter input into the pond. The banks are made of gradually sloping, vegetated earth. The water is clear (1/5 turbidity), with a very gradual depth of 5cm at the margins, up to no more than 1m in the centre. Aquatic vegetation is limited to marginal species comprising brooklime, willowherb, common nettle, soft rush and bramble. The banks are characterised by several mature trees including ash, black poplar, willow, hawthorn, and blackthorn along with cut leaved cranesbill, common nettle, creeping thistle, lesser celandine, creeping buttercup, cow parsley and dog rose.
- P46 and P46a are both irregular shaped ponds located within amenity grassland within a golf course. A small patch of juvenile woodland is located adjacent to the ponds. The banks are mostly flat, with a plastic pond liner present. The water is green with algae, though relatively clear (1/5 turbidity). The water is approximately 1m deep at the centre. Frogspawn is present within the water, and lots of duckweed. There is no other aquatic or marginal vegetation. Bank species comprise Yorkshire fog, daisy, white clover, cats ear, dandelion, groundsel, dovesfoot cranesbill, bitter cress, ragwort, creeping buttercup, creeping thistle, sow thistle and lords and ladies. The adjacent woodland contains silver birch, cherry, alder and holly.
- P34a is a garden pond fed by a spring. Water from the pond runs into a ditch connecting to another pond (pond 34). Sticklebacks are present within the pond. Lots of water cress and water crowfoot is present, and the pond is adjacent to areas of woodland.
- P3 is a large pond surrounded by many semi-mature trees providing shade on the banks and hanging over the water. Tree species present include sycamore, hazel, blackthorn, alder and willows. There is lots of leaf litter and a fallen tree within the pond. The pond has moderate water clarity. Aquatic vegetation comprises two patches of common reeds and lots of brooklime and water crowfoot. The water is approximately 50cm deep. The pond is situated in a small patch of managed woodland, with ground flora dominated by Angelica. A small brash pile is present on the pond edge. A road runs adjacent to the pond, and arable fields and hedgerows are present to the west.
- Tables 4-1, 4-2 and 4-3 present the results of the GCN habitat, eDNA, presence/absence and population assessment surveys:

Table 4-1 – GCN HSI & eDNA RESULTS

Pond	HSI	eDNA 2021		
			eDNA 2022	eDNA 2023
85	GOOD - 0.78	POSITIVE	ABSENT	POSITIVE
81	AVERAGE - 0.69	NEGATIVE	ABSENT	POSITIVE
100	AVERAGE - 0.69	POSITIVE	PRESENT	NEGATIVE
110	GOOD - 0.73	POSITIVE	Pond no longer present	N/A
70i	BELOW AVERAGE - 0.6	POSITIVE	Pond no longer present	N/A
70j	POOR - 0.47	POSITIVE	Pond no longer present	N/A
70n	POOR - 0.4	POSITIVE	Pond no longer present	N/A
69	GOOD - 0.75	NEGATIVE	NO ACCESS	NO ACCESS
58	GOOD - 0.73	POSITIVE	NO ACCESS	NO ACCESS
53	GOOD - 0.78	NEGATIVE	PRESENT	POSITIVE
52a	POOR - 0.49	POSITIVE	PRESENT	POSITIVE
52	AVERAGE - 0.68	NEGATIVE	PRESENT	POSITIVE
46a	POOR - 0.4	POSITIVE	PRESENT	Pond no longer present
46	POOR - 0.4	POSITIVE	PRESENT	POSITIVE
34a	EXCELLENT - 0.83	POSITIVE	N/A	N/A
3	GOOD - 0.78	NEGATIVE	ABSENT	NEGATIVE

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Table 4-2 - GCN SURVEY RESULTS (surveyed in 2021)

Pond	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Population size
81	None	None	None	1 female	None	None	SMALL
100	None	5 male	1 female	None	None	None	SMALL
110	2 male, 4 female	1 female	3 female	4 male	1 male, 4 female	1 female	SMALL
70i	2 male, 1 female	None	None	1 female	None	None	SMALL
70j	1 male	None	None	1 female	None	None	SMALL
70n	1 male	1 male, 3 female	None	1 female	None	None	SMALL
69	None	None	None	None	None	None	NO GCN
58	None	None	None	None	None	None	NO GCN
53	4 male, 7 female	4 female	14 female	5 female	13 male, 9 female	1 male, 2 female	MEDIUM
46a	None	None	None	None	None	None	NO GCN
46	1 female	4 male, 5 female	None	1 male, 2 female	None	None	SMALL
34a	None	None	None	None	None	None	NO GCN
3	None	None	None	None	2 female	1 female	SMALL

Table 4-3 – GCN SURVEY RESULTS (surveyed in 2022)

Pond	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6	Population size
81	None	None	None	None	None	None	NO GCN
100	None	None	None	None	1 female	None	SMALL
53	None	None	5 male, 6 female	4 female	None	None	SMALL
46a	None	None	1 female	None	None	None	SMALL
46	3 male, 5 female	6 male, 12 female	1 male, 5 female	2 male	7 male, 8 female	None	MEDIUM
3	None	None	None	None	None	None	NO GCN

#### 4.5 Summary

Twelve ponds of relevance to the cable route works were subject to surveys in respect of GCN, all of which included presence/absence and population assessment. In general, only low numbers of GCN were encountered during the surveys, this reflects either the poor condition of breeding habitats or suboptimal nature of terrestrial habitats throughout the majority of the cable route. The only exceptions to this were higher counts (medium sized populations) recorded at Pond 53 in 2021 (maximum of 22 adults); and at Pond 46 in 2022 (maximum count of 15 adults).

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#### 5 OTTER SURVEYS

- Otter (Lutra lutra) are carnivorous and forage on watercourses and water bodies. Their diet consists of fish, amphibians, crustaceans, small mammals and wildfowl. Otters are active throughout the year and can breed at any time. Otters use many different sites for shelter, such as holts and couches, depending on availability. Holts can be a hole in a riverbank, under tree roots, within rocks and caves, under manmade structures, or excavated out of soft ground such as sand dunes.
- 30. Otters are a European Protected Species (EPS). Otters and their resting sites/shelters are protected in the UK under The Conservation of Habitats and Species Regulations 2017 (as amended).

#### 5.1 Baseline

Baseline survey results for otters are provided in section 23.5.4 of Chapter 23 Terrestrial Ecology of the ES. Updating baseline surveys were undertaken in 2021 and 2022 in which all watercourses with potential to support otters have been surveyed. A total of 19 watercourses were survey in 2021 and 26 watercourses were surveyed in 2022 for presence of otter with 7 sites recording presence (Watercourses 45, 27a/b, 20, 31, 5, 43 and River Gipping).

#### 5.2 Methodology

- During otter surveys, the following evidence was searched for: spraints, footprints, holts, couches, feeding remains, lay-ups and sightings. An intensive search of all likely locations of the watercourse was undertaken to locate signs of otter presence. During the survey, inspections were made of any thick waterside vegetation, outfalls and footbridges to determine any use by otter, particularly for resting and denning purposes.
- 33. Trail cameras were also installed at suitable locations on the watercourses, with each camera remaining in situ for at least 7 days.

#### 5.3 Limitations

During Some of the watercourses were dry upon visiting, limiting the survey by providing suboptimal habitat and limiting the presence of survey signs. Further, dense vegetation on some watercourses may have obscured evidence of otter.

#### 5.4 Results

Otters were recorded at River Fynn, River Lark and Queens Fleet, however no holts or resting places have been found within 50m of the DOL. It is considered that impacts to otter can be avoided. Potential considerations of otter present need to be maintained for watercourse 43 (proposed watercourse crossing WC43, near Jointing Bay JB 8/9), watercourse 31 (proposed bridge watercourse crossing WC31, (near Jointing Bay JB 12/13) and watercourse 20 (proposed watercourse crossing WC20, near Jointing Bay JB 17/18), all of which have confirmed presence for otter (assumed to be commuting only in these watercourses).

#### 5.5 Summary

36. A total of 26 watercourses were surveyed for presence of otter with 7 sites recording otter presence (Watercourses 45, 27a/b, 20, 31, 5, 43 and River Gipping).

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#### 6 BAT SURVEYS

Bats (*Chiroptera*) and their roosts are protected by law because all species have declined, and some are threatened or endangered. There are 17 species of bat in the UK. They use a wide variety of roosts including buildings, trees and underground places. Many bat roosts are used seasonally as bats have different roosting requirements throughout the year.

#### 6.1 Baseline

- Detailed baseline information relating to bats is provided in section 23.5.4 of Chapter 23 Terrestrial Ecology of the ES. No tree roosts were identified within the wider onshore works DOL although high levels of bat activity were recorded at four boundary features (i.e., greater than 200 bat passes).
- In addition, two hedgerows recorded greater than five barbastelle passes (therefore six hedgerows in total within the ES were classified as important for bats). A further five hedgerows which recorded single barbastelle passes were subsequently identified as important during post submission discussions with consultees. This includes hedgerow 160 (listening point 11 Appendix 2) midway along the southern side of the DOL which was previously identified as a high value hedge for bats.

#### 6.2 Methodology

#### 6.2.1 Bat Trees

- A ground level tree assessment was undertaken in 2020 which identified potential roosting features and classified trees with features as having 'high', 'moderate' or 'low' potential to support roosting bats. The assessment was undertaken in line with the British Standard BS8596:2015 'Surveying for bats in trees and woodland Guide' and the Bat Conservation Trust 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (3rd edition).
- The trees considered to support potential bat roosting features were subject to further survey, aided by tree climbing equipment, torches and an endoscope (Rigid Micro CA-300). Potential roost features were searched for bat field signs, such as bats, bat droppings, urine stains, bat feeding remains (moth wings, insect cases), scratch marks and smoothing of surfaces. The suitability of potential roost features was evaluated based on additional information gained from the aerial inspection, including the internal dimensions and conditions of the feature.
- Tree surveys were undertaken on 16/03/21 by Sarah Birtley MBiolSci (NE License: 2016-22674-CLS-CLS) and Catrin Scott MRes, BSc (Hons) (NE License: 2019-39208-CLS-CLS). Weather conditions during the survey were 8/8 cloud cover, 6-7°C, a light breeze F2³, and intermittent rain.

#### 6.2.2 Bat Transects

- The proposed cable works will have limited effects on bats in terms of habitat removal. There will be limited hedgerow removal other than at previously used access locations to allow for haul road/trackway installation works. Impacts will therefore be limited to removal of short sections of hedgerows that have been recently replanted as a result of the EAONE project.
- 44. Given the limited nature of impacts associated with the cable works further surveys undertaken in 2021 focused upon previously installed hazel hurdle mitigation (barbastelle locations). Transect locations are shown on the plans at Appendix 2. Static Detectors were deployed (see locations on the plans at Appendix 2) at listening point 9, 2a, 3c and 4c to assess the use of hazel hurdles.
- A walked transect survey commenced at dusk and included monitoring points, at which surveyors remained stationary for a standardised three-minute period. Walked sections of the transect between each monitoring point were walked at a slow steady pace. Surveyors carried a broadband full spectrum detector (EM3 Touch attached to iPad). Transect surveys followed the Bat Conservation Trust 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (3rd edition).

<sup>&</sup>lt;sup>3</sup> Wind strength is reported using the Beaufort Scale of Wind Force, this scale runs from 0 to 12, information on the conditions experienced during surveys are as follows: 0 – Calm (vertical smoke); 1 – Light Air (slight smoke drift); 2 – Light Breeze (leaves gently rustle). Cloud cover is reported in oktas or eighths (i.e., 0 oktas represent the complete absence of cloud, 1 okta cloud cover of 1 eighth or less, and so on to 8 oktas which represents full cloud cover), with the additional convention that 9 oktas represent sky obscured by fog or mist.

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46. Bat passes at each walk and monitoring point were recorded with the number of bats observed, species and any other contextual data such as flight direction, social calling or feeding buzzes. The transect route and monitoring points were designed to sample the range of habitats present across the site, whilst avoiding any features which could be difficult to safely navigate in darkness.

The transect routes identified for survey covered a variety of habitats throughout the DOL associated with the cable works. These habitats include: arable fields lined with hedgerows; mature tree lines; scrub; and mature woodlands. The surveys were undertaken by experienced bat surveys: Mark Breaks BSc (Hons) and Sophie King BSc MSc, assisted by Gemma McMullan. Weather conditions during each transect survey are shown in Table 6-1:

Table 6-1 Weather Conditions During Transect Surveys

Weather Conditions – Transect Surveys:							
Transect		Transect 1		Transect 2			
Visit	Visit 1	Visit 2	Visit 3	Visit 1	Visit 2	Visit 3	
Date	24.06.2021	22.07.2021	19.08.21	17.06.2021	21.07.2021	09.08.2021	
Start Time	21:20	21:01	20:14	20:48	20:31	20:31	
End Time	23:21	22:40	22:20	22:48	22:35	22:31	
Sunset	21:20	21:01	20:10	21:28	21:01	20:31	
Temp. °C (start)	16	17	18	18	16	15	
Rain (start)	Dry	Dry	Dry	Dry	Dry	Dry	
Wind (start) (Beaufort)	2 SW	1 SE	0	2	1	1	
Cloud (start) oktas	8/8	0/8	6/8	8/8	3/8	7/8	
Temp. °C (end)	16	16	16	16	15	15	
Rain (end)	Dry	Dry	Dry	Dry	Dry	Dry	
Wind¹(end)	2 SW	1 SE	0	2	1	1	
Cloud <sup>2</sup> (end)	8/8	0/8	6/8	8/8	3/8	7/8	

#### 6.3 Limitations

There were no limitations to the ground level tree assessment of bat roost potential. With regards to the transect surveys, detectability of some bat species (e.g. *Plecotus*) is lower than others (e.g. *Nyctalus* and *Pipistrellus*) as a consequence of echolocation and hunting strategies. Careful interpretation has been applied when comparing across species. Myotis species have overlapping call characteristics and it is therefore not possible to identify these bats to species level with good confidence (at least 80%).

#### 6.4 Results

#### 6.4.1 Bat Trees

With regards to the cable route and associated works, 15 trees that were subject to updated bat roost potential surveys with confirmed bat roost potential are considered to be of relevance. Of these, 4 trees were assessed as having high potential to support roosting bats, 2 trees offered moderate potential to support roosting bats, and 9 trees offered low potential to support roosting bats (see Table 6-2).

Table 6-2 - Bat Trees

Tree ID	Location	Roost Potential
294	Access Point AP-02	Low
293	Access Point AP-02	Low
375	Access Point AP-14	High
376	Access Point AP-14	Moderate
294	Access Point AP - 17	Low
323	Access Point AP - 21	High
295	Access Point AP-18	Low

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Tree ID	Location	Roost Potential
296	Access Point AP-18	Low
297	Access Point AP-18	Low
377	Access Point AP - 15	High
302	Water Crossing WC21/Jointing bay JB 16/17	Moderate
326	Jointing Bay JB 15/16	Low
323	Access Point AP - 21	High
338	Access Point AP-08	Low
362	Access Point AP-29	Low

#### 6.4.2 Bat Transects

- The transect routes (see Appendix 2) cover a wide area of habitat with a number of linear features, including hazel hurdle locations, which run between the fields and along their boundaries associated with the cable works. These include broadleaved tree lines, dense scrub, poor semi-improved grassland, hedgerows (both species-rich and species-poor). It should be noted that bat transect survey effort was focused towards areas of greatest potential impact to commuting/foraging bats which was associated with the western end of the cable route, results are repeated here to give an overview of bat activity across the site.
- Transect surveys recorded common pipistrelle, soprano pipistrelle, myotis, brown long eared, noctule and serotine. All bat species except brown long eared were found on transect routes. No barbastelle activity was recorded during transect surveys but activity was confirmed at all hazel hurdle from static detector locations across multiple nights (< 5 barbastelle passes at each location). All hazel hurdle locations (HH1-HH4, Appendix 2) along hedgerows and replanted hedges are therefore still considered important and in use by barbastelle bats.

#### 6.5 Summary

- Following the aerial tree inspections, 15 trees are considered to have bat roost potential ranging from low-high in the vicinity of the proposed cable works.
- Bat transect surveys confirmed the continued presence of barbastelle associated with linear features with hazel hurdles. It should be noted that bat activity was generally low and no counts of >5 barbastelles were recorded during the surveys.

#### 7 GCN IMPACTS AND MITIGATION

#### 7.1 Impact Assessment

The cable works are predominantly within arable land and land reinstated and/or landscaped following the construction of EA ONE. These habitats are all considered to be suboptimal for the potential presence of GCN. Recent surveys demonstrate the continued presence of GCN populations associated with ponds along the route of the cable works. Table 7-1 provides a summary of GCN ponds associated with the cable works, locations and population assessments.

Table 7-1 – Great Crested Newt Pond Populations

Pond ID	Location	Population
81	Jointing Bay JB 1/2 and Bullen Lane CCS	Small
69	Jointing Bay JB 3/4	Small
70i,j,n & 110	Jointing Bay JB 3/4	Small
58	Jointing Bay J B6/7	Unconfirmed
53	Jointing Bay JB 6/7	Small
46 & 46a	Jointing Bay JB 7/8	Medium
34a	Jointing Bay JB 12/13	Unconfirmed
03	Transition Jointing Bay TJB 1-2/Access Point AP-31	Small

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The majority of the Onshore Cable Works will be within suboptimal habitats for GCN such as large arable fields with no aquatic habitat that could attract amphibians. Suboptimal terrestrial habitats that are to be crossed by the Onshore Cable works include small field ditches/watercourses and hedgerows. The majority of these are young hedgerows replaced following the EA ONE works and, as such, provide lower value habitat than established hedgerows. On this basis, it is considered that the potential risk of impacts to GCN are likely to be low.

- In general it is expected that impacts to GCN will be of a low magnitude, with cable works including jointing bays, HDD proving locations and Construction Consolidation Sites (CCS) and haul roads/trackway largely within arable fields which are considered to be of low value for GCN particularly where ponds only recorded small populations. Works will be temporary in nature. Therefore, given the low risk of GCN presence within areas affected by construction, protection will be achieved by the implementation of Reasonable Avoidance Measures (RAMs) including careful vegetation removal and management to discourage amphibians from working areas. All RAMs will be implemented according to a detailed method statement and under the supervision of the ECoW.
- The only potential exceptions to this are associated with the following ponds:
- Pond P81 is situated within woodland which is considered to be optimal habitat for GCN. Generally cable works will be distant from this pond (200-300m<sup>4</sup>) and therefore impacts to the local GCN population are considered unlikely. Consideration does need to be given to the proposed location of the Bullen Lane CCS with containers, a skip and soil mounds which are located in arable land within c. 80m of Pond P81.
- Ponds P69, 70i,j, n and P110 are considered to be part of a meta-population of GCN that will potentially utilise terrestrial habitats associated with Jointing Bay JB 3/4. Ponds 70i, j and n are no longer present but are part of extensive series of water bodies that remain and it is assumed that GCN are still present and using the remaining waterbodies as potential breeding sites. Pond 69 occurs to the north of the jointing bay location (c. 97m) whilst the pond cluster 70 and pond 110 occur to the south of the jointing bay (123m 70i,j). Therefore, there is a high likelihood that GCN migration will occur across the DOL/ construction works site. Figure 2 illustrates the context of the ponds with Jointing Bay JB 3/4, woody habitats (G364 Figure 2) provide a linked corridor for amphibian refuge and dispersal running to the east of Jointing Bay JB 3/4, however, this feature will not be impacted by the proposed works. However, there is a risk that GCN will utilise habitats associated with haul road to the jointing bay location and the jointing bay location itself.

<sup>&</sup>lt;sup>4</sup> At distances greater than 100m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality. Creswell, W & Whitworth R (2004).

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Figure 2 - Jointing Bay JB 3/4 and context with GCN ponds



- It is considered that an appropriate route to manage GCN mitigation for the cable works would be via Natural England's District Level Licensing scheme (DLL) (DLL-ENQ-NOSU-00182). Outline details of RAMS are provided in Sections 7.2 and 7.3 below, these should be implemented as good practice irrespective of NE DLL Licensing.
- 61. Implementation of the GCN mitigation works will be the responsibility of the Principal Contractor.

#### 7.2 Pre-Construction Mitigation

- An application for a District Level Licence (DLL) has been approved by NE (DLL-ENQ-NOSU-00182). The DLL provides means of offsite compensation to be undertaken by a third party (NE appointed contractors) which correlates to the level of impacts of the works. With approval of the DLL, works can commence onsite without the need for traditional mitigation to be undertaken such as exclusion fencing.
- In order to minimise any potential incidental impacts to GCN, or other amphibians, that may still be present within the Onshore Cable DOL good practice measures will be undertaken onsite prior to works commencement, including:
  - Pre-commencement checks and hand searches to be undertaken of all terrestrial habitat within the works area by the ECoW;
  - Where clearance of scrub or shrub layer is required, a two-stage cut will be undertaken, under the supervision of the ECoW. The first cut will remove the habitat to ground level (where possible undertaken between October-early February outside of the bird nesting season) with stumps left in the ground. Stump removal would be carried out under supervision of the ECoW during the active season for amphibians (March-October). Should vegetation be removed within bird nesting season appropriate measures will be employed as detailed within the EcoMP (EA3-LDC-CNS-REP-IBR000093).
  - All vegetation within any working areas will be cut using hand held machinery (i.e., strimmer or brush cutter) to a height of no less than 150mm. Arisings will be removed from the immediate area and either: installed in a suitable location to create habitat piles/refugia; or chipped and spread thinly in suitable locations under ECoW supervision.

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• Cut areas must then be left for a minimum of 48 hours to allow any amphibians that may be present to move out of the immediate area. A fingertip search will then be undertaken by the ECoW prior to a second cut using hand held machinery (i.e., strimmer or brush cutter) to a height of 50mm. Once the second cut is complete, fingertip searches of the cleared areas will be undertaken by the ECoW immediately prior to works, to confirm that such works can commence.

- Areas of unmanaged non-woody habitat (e.g., coarse grassland, tall herbs) will be strimmed to 150mm prior to construction
  commencing. Following strimming, the ECoW will undertake a check to ensure that the area is free of amphibians. These
  areas will be maintained as short vegetation throughout the construction and reinstatement period.
- These processes will be undertaken under a watching brief by a suitably qualified ecologist and any amphibians found would be transported to suitable receptor sites away from the works as defined by the ECoW and subject to landowner permission where required.

#### 7.3 During Construction Mitigation

- The good practice measures as outlined in section 7.2 above will be implemented by the ECoW as and when required onsite throughout the construction phase:
  - The ECoW will provide an amphibian ecology induction Toolbox Talk for site staff including information on recognising common British amphibians. Briefing notes containing this information would also be available at the site offices.
  - The ECoW will be present during works close to or within areas of suitable amphibian habitat.
  - Excavations deeper than 1m must be covered at the end of each working day, or include a means of escape for any animal
    falling in.
  - Stockpiling of materials will be guided by the ECoW to reduce potential for providing suitable amphibian habitat e.g. located as far from known GCN presence as feasible, raised off the ground where possible.

#### 7.4 Post Construction Monitoring

As required, post construction monitoring may be implemented to monitor GCN populations; this will consist of an eDNA survey to confirm the continued presence of GCN. The surveys would take place between mid-April and June. Currently no post-construction surveys are considered necessary. Further, post construction mitigation will not be required as a DLL route has been secured for any potentially licensable impacts to GCN.

#### 7.5 Emergency Procedures

- In the event that GCN or other amphibians being found, the following procedures shall be followed:
  - All activities and actions at the site of, and within the immediate vicinity of, where any individual or group of amphibians are found, shall stop immediately.
  - The ECoW or an appropriately qualified ecologist shall be contacted at the earliest possible opportunity, to make an assessment of the situation, in consultation with Natural England if required, and advise as to whether:
    - Works can re-commence where it is possible to work around the area where an individual GCN or group of GCN, other
      amphibian species are found, in a manner that will avoid disturbance and with negligible risk of causing harm (killing or
      injury) to any animals.
    - Activities and / or works can proceed with extreme caution, due diligence and ecological supervision where it is assessed
      that the risk of disturbance or harm of animals is assessed as negligible.
    - The individual or group of amphibians are relocated out of the working area into pre-determined receptor sites by the ECoW.

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#### 8 BAT IMPACTS AND MITGATION

#### 8.1 Impact Assessment

- The proposed cable works will have limited direct effects on bats in terms of habitat removal. There will be limited hedgerow removal other than previously used access locations to allow for jointing bay works. Loss of trees has been minimised through careful routeing of the onshore cable route and no confirmed bat roost potential trees will be removed as a result of the cable works.
- Impacts will therefore be limited to removal of: short sections of hedgerows that have been replanted as a result of the EAONE project; and two trees (1 wych elm and 1 oak, both immature specimens with no bat roost features). Given the limited nature of impacts associated with the cable works further surveys undertaken in 2021 focused upon previously installed hazel hurdle mitigation (barbastelle locations).
- Hazel hurdles were deployed as temporary mitigation in respect of impacts to hedgerows (bat foraging and commuting habitat) during the construction of EA ONE. Transect surveys recorded common pipistrelle, soprano pipistrelle, myotis, brown long eared, noctule and serotine. All bat species except brown long eared were found on transect routes. No barbastelle activity was recorded on transect surveys but activity was confirmed at all hazel hurdle from static detector locations across multiple nights (< 5 barbastelle passes at each location). All hazel hurdle locations along hedgerows and replanted hedges are therefore still considered important and in use by barbastelle bats, these are summarised below with Hedgerow reference number, construction reference and Hazel Hurdle reference (see Appendix 2 for locations). Hazel hurdle locations potentially affected by the cable works are:
  - H6 and H7 (HH1) potentially impacted at CP01; and
  - H18, 16, 15, 14, 19 (HH2), by the haul road between Access Point AP12 and Jointing Bay JB 7/8.
- while hazel hurdles were required during the construction of EA ONE to mitigate for extensive hedgerow removal (35-50m), given the small gaps required (5m) for the haul road it is considered that hazel hurdles or other temporary mitigation measures are not required for hedgerows or replanted hedgerows for EA THREE. All hedgerows will be replanted and managed following construction according to the Landscape Management Scheme (EA3-LDC-CNS-REP-IBR-000077).
- 71. The activities which may require temporary external artificial lighting at night are:
  - Continuous works, such as concrete pouring;
  - Security purposes at laydown areas;
  - Delivery of abnormal loads;
  - · Potential emergency works; and
  - Equipment such as stockpiles and emplacement areas, which will be carefully sited to ensure no light spillage.
- Indirect impacts can potentially arise through light pollution and disturbance. Construction Artificial Lighting Emissions Management Plans (CALEMP) (EA3-LDC-CNS-REP-IBR-000085) have been developed which include specific measures to be employed for sensitive ecological receptors such as bats.
- It is therefore considered that impacts to bats will largely be avoided and the mitigation measures set out in the EcoMP (DCO Requirement 21, EA3-LDC-CNS-REP-IBR-000093) will be followed through out.

#### 8.2 Pre-Construction Mitigation

- Loss of trees has been avoided through careful selection of the Onshore Cable route and site locations. Access routes have been selected to have the least impact on trees and hedges, including utilising EA ONE replacement hedgerow sections for haul road/trackway crossing points. Main impacts associated for the Onshore Cable Works are removal of small sections of young replacement hedgerow following EA ONE works for haul road access (5.m width) and visibility required at new access points not utilised for EA ONE.
- Hazel hurdles (see para. 91) were deployed as temporary mitigation in respect of impacts to hedgerows (bat foraging and commuting habitat) during the construction of EA ONE. This was to mitigate for extensive hedgerow removal (35-50m). Given the small gap required (5m) for the haul road/trackway it is considered that hazel hurdles are not required.
- The activities which may require temporary external artificial lighting at night are:

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- Continuous works, such as concrete pouring or testing and commissioning;
- Security purposes at the temporary laydown and Converter Station sites;
- Delivery of abnormal loads;
- Potential emergency works; and
- Cable pulling in at the landfall;
- Dewatering of excavations (if tankering is required);
- · Equipment such as stockpiles and emplacement areas, which will be carefully sited to ensure no light spillage.
- 77. The Construction Artificial Lighting Emissions Management Plan (CALEMP) (EA3-LDC-CNS-REP-IBR-000085) has been developed. Measures to be implemented, as required, include but are not limited to:
  - The lighting scheme will ensure, as far as practicable, that there is no lighting directed towards any of the trees listed in Table 6-2.
  - Light spill will be reduced by directing the light to where it is needed. The design of the luminaire and accessories such as hoods, cowls, louvres will be used achieve this.
  - LED luminaires will be used where possible;
  - Column heights will be carefully considered to minimise light spill;
  - Narrow spectrum light sources will be used to lower the range of species affected by lighting;
  - Light sources that emit minimal ultra-violet light will be selected;
  - White and blue wavelengths of the light spectrum will be avoided to reduce insect attraction and where white light sources
    are required in order to manage the blue short-wave length content, they will be of a warm / neutral colour temperature;
  - External security lighting will be set on motion-sensors with short (1 minute) timers;
  - Directional beams and non-reflective surfaces will be used to ensure light spill and nuisance does not encroach onto adjacent areas including:
    - Woodland, so as not to disturb emerging or foraging bats. Flood lighting will be directed away from any potential roost identified.
    - Other high value foraging habitats and potential flight paths, such as connecting hedgerows and trees.
  - External lighting at night will be avoided as far as feasible, particularly during the months of higher bat activity (August –
    October); and
  - When lighting at night is required, it will comply with the Bat Conservation Trust (2018) recommendations on external lighting (as set out above) as agreed with Natural England.

#### 8.3 During Construction Mitigation

- The good practice measures as outlined in section 8.2 above will be implemented by the ECoW as and when required onsite throughout the construction phase:
- 79. The ECoW will provide a bat Toolbox Talk for site staff including emergency response should a bat be found or suspected onsite
- The ECoW will be present during works to ensure controls measures are being adhered to, such as ensuring lighting control measures and exclusion barriers (tree protection fencing for example) are in place as required.

#### 8.4 Post Construction Monitoring

Further surveys for bats will be undertaken post-construction in order to assess whether the mitigation implemented has been successful. This will include reinstated hedgerow sections. Three surveys will take place following the same methodology as the baseline surveys, these will take place in May, July and September and in years one, three and five post construction. Due to the avoidance of direct impacts to bats, no further compensation measures are advised for bats in respect of the cable works.

#### 8.5 Emergency Procedures

- 82. In the event that bats are found at any time during the construction works, the following procedures shall be followed:
  - All activities and actions at the site of, and within the immediate vicinity of, where any individual or group of bats is/are found, shall stop immediately.
  - The ECoW or an appropriately qualified ecologist shall be contacted at the earliest possible opportunity, to make an assessment of the situation and advise as to whether:

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works can re-commence where it is possible to work around the area where an individual or group of bats is/are found
in a manner that will avoid disturbance and with negligible risk of causing harm (killing or injury) to any animals; or

• activities and/or works can be modified to reduce the risks to any individual animal until such time as an animal naturally migrates out of the working area.

#### 9 OTTER IMPACTS AND MITGATION

#### 9.1 Impact Assessment

Otters have been recorded at River Fynn, River Lark and Queens Fleet, however no holts or resting places however have been found within 50m of the DOL. It is considered that impacts to otter can therefore be avoided. Potential considerations of otter present need to be maintained for watercourse 31 (proposed bridge watercourse crossing WC31, near Jointing Bay JB 12/13) and watercourse 20 (proposed watercourse crossing WC20, near Jointing Bay JB 17/18), both of which have confirmed presence for otter (assumed to be commuting only in these watercourses).

#### 9.2 Pre-Construction Mitigation

- Monitoring of watercourses with previously recorded otter presence, or suitability to support otters, will be undertaken prior to works and continue throughout the construction phase.
- No mitigation is currently considered necessary, however should further evidence of otters be recorded and risk of damage/disturbance to otters and their resting places be considered likely, then an EPS mitigation licence may be required from NE.

#### 9.3 During Construction Mitigation

- 86. ECoW pre-works surveys and ongoing monitoring will be undertaken throughout works.
- 87. Control measures will be in place for all works near to waterbodies with confirmed/potential to support otters, including:
  - Toolbox talks will be given to site staff and would include information on recognising holts and signs of otters. Briefing notes containing this information would also be available at the site offices.
  - · Pollution control measures to be in place for all watercourse crossing to prevent silt or other pollution to the watercourse.
  - Watercourse crossings required will be of a nature to ensure no restrictive to movement along the watercourses.
  - A ramp/means of escape will be provided for any excavations that may be close to a watercourse.
  - Night-time works near to watercourses will be avoided or else minimised as far as possible.
    - Any night-time lighting required will be designed to avoid light spill onto the watercourse and surrounding banks.

#### 9.4 Post Construction Monitoring

- 88. No specific post-construction requirements are currently deemed necessary.
- 89. Watercourses are to be reinstated to pre-construction condition allowing for natural regeneration of the habitat.

#### 9.5 Emergency Procedures

- 90. In the event that any otters, or evidence of otter, are found at any time during the construction works, the following procedures shall be followed:
  - All activities and actions at the site and within the immediate vicinity of where any otter, or signs of otter, are found shall stop immediately.
  - The ECoW or an appropriately qualified ecologist shall be contacted at the earliest possible opportunity, to make an
    assessment of the situation and advise as to whether:
    - o works can re-commence where it is possible to work around the area where an otter is/are found in a manner that will avoid disturbance and with negligible risk of causing harm (killing or injury) to any animals; or
    - o activities and/or works can be modified to reduce the risks to any individual animal until such time as an animal naturally migrates out of the working area.
    - o works are to remain ceased until such time a licence is obtained from NE for any required mitigation works.

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#### 10 REFERENCES

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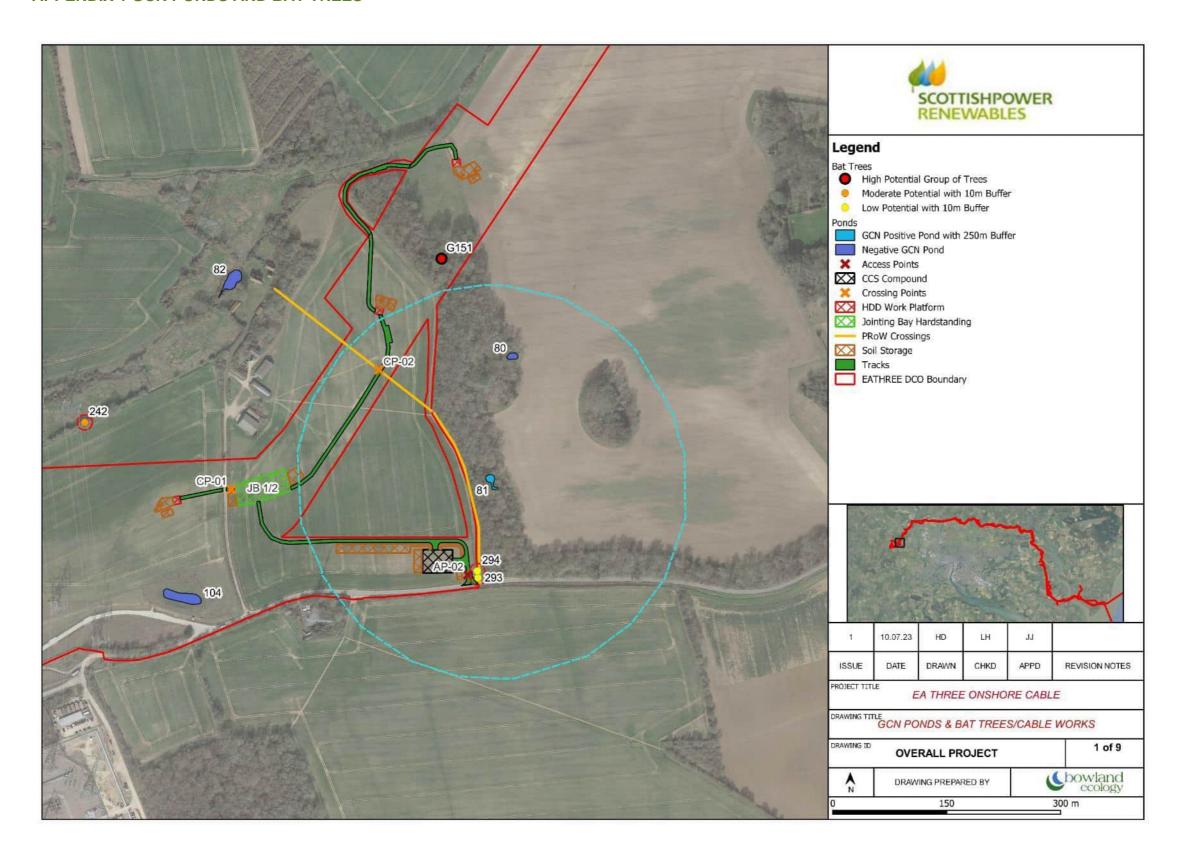
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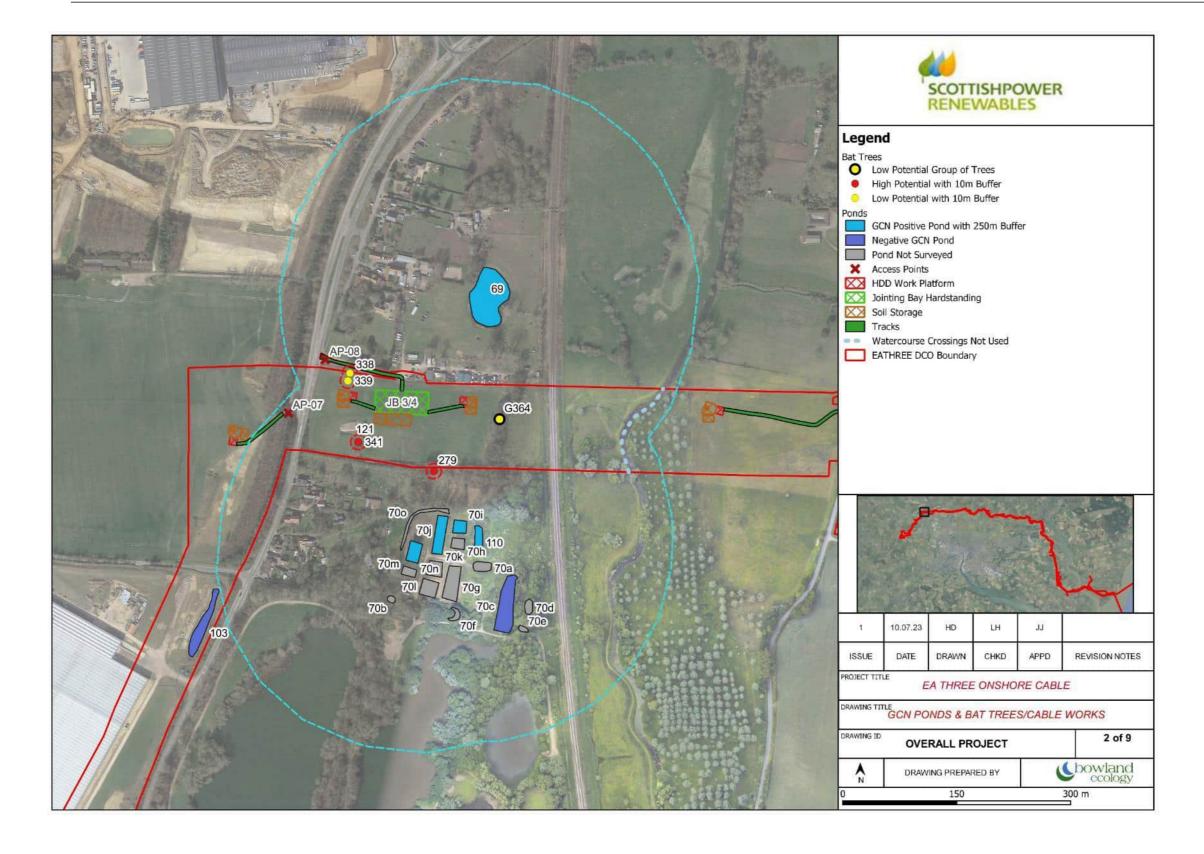
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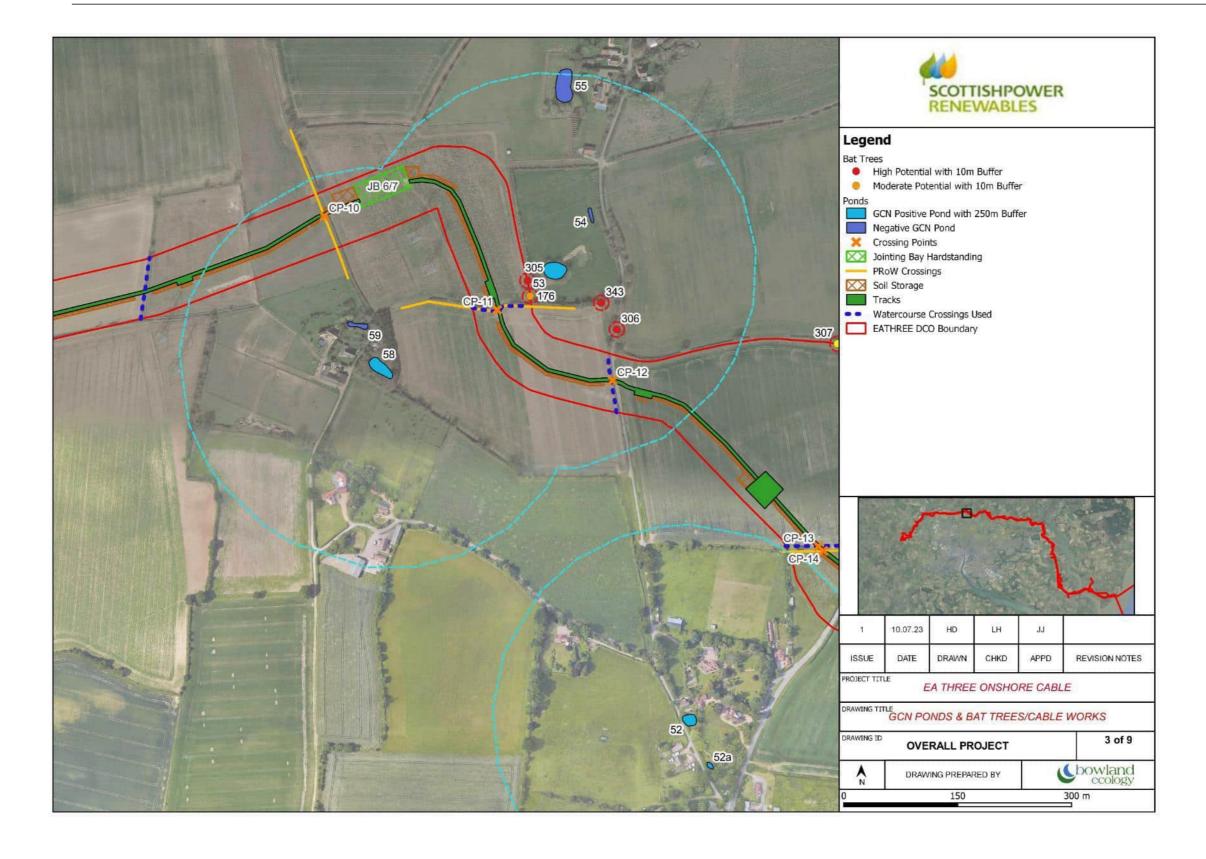
#### **APPENDIX 1 GCN PONDS AND BAT TREES**





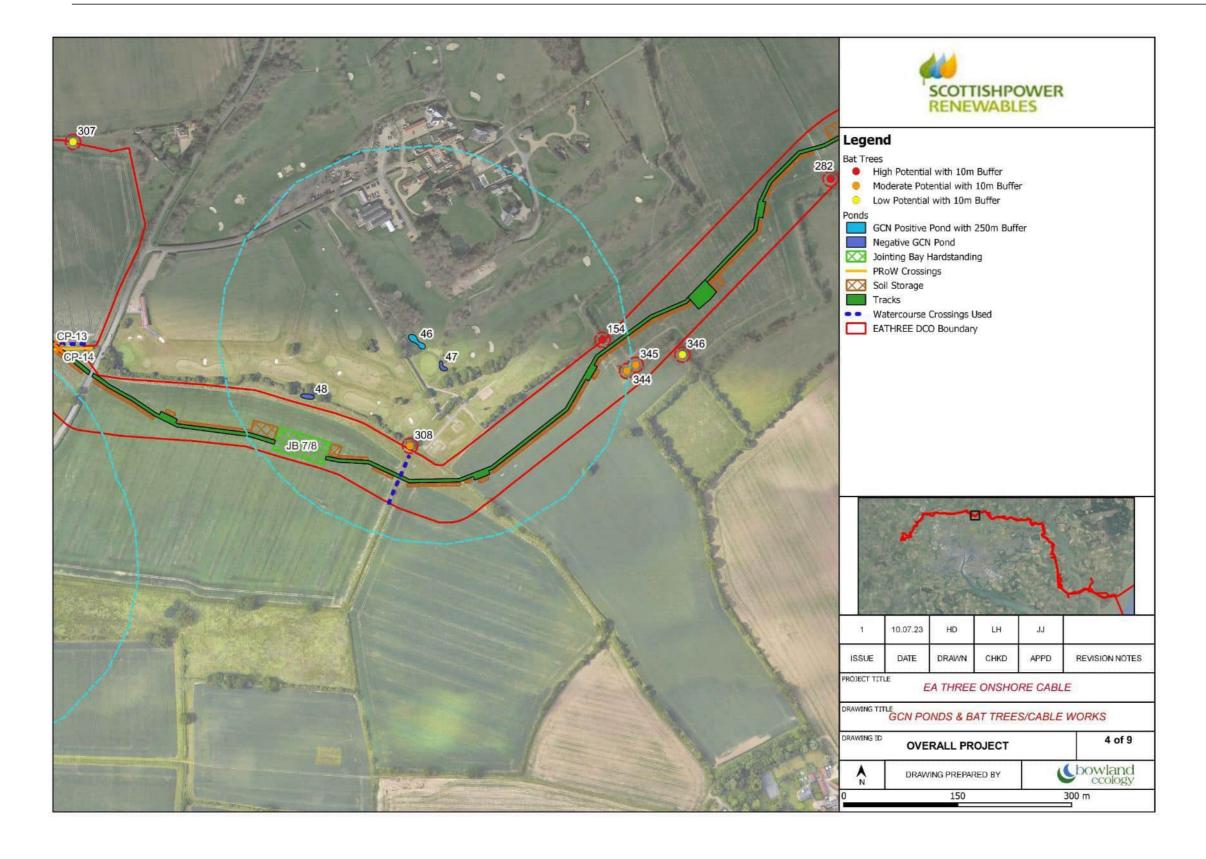




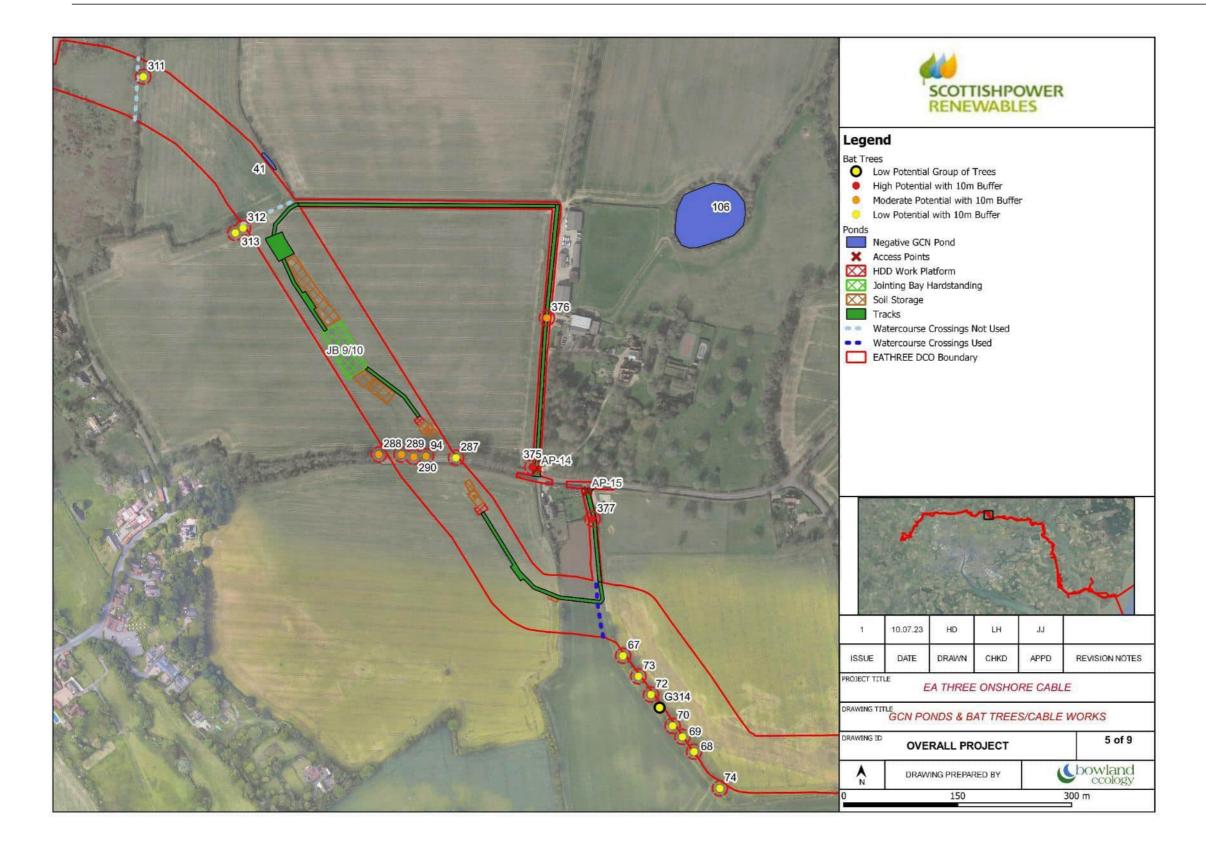


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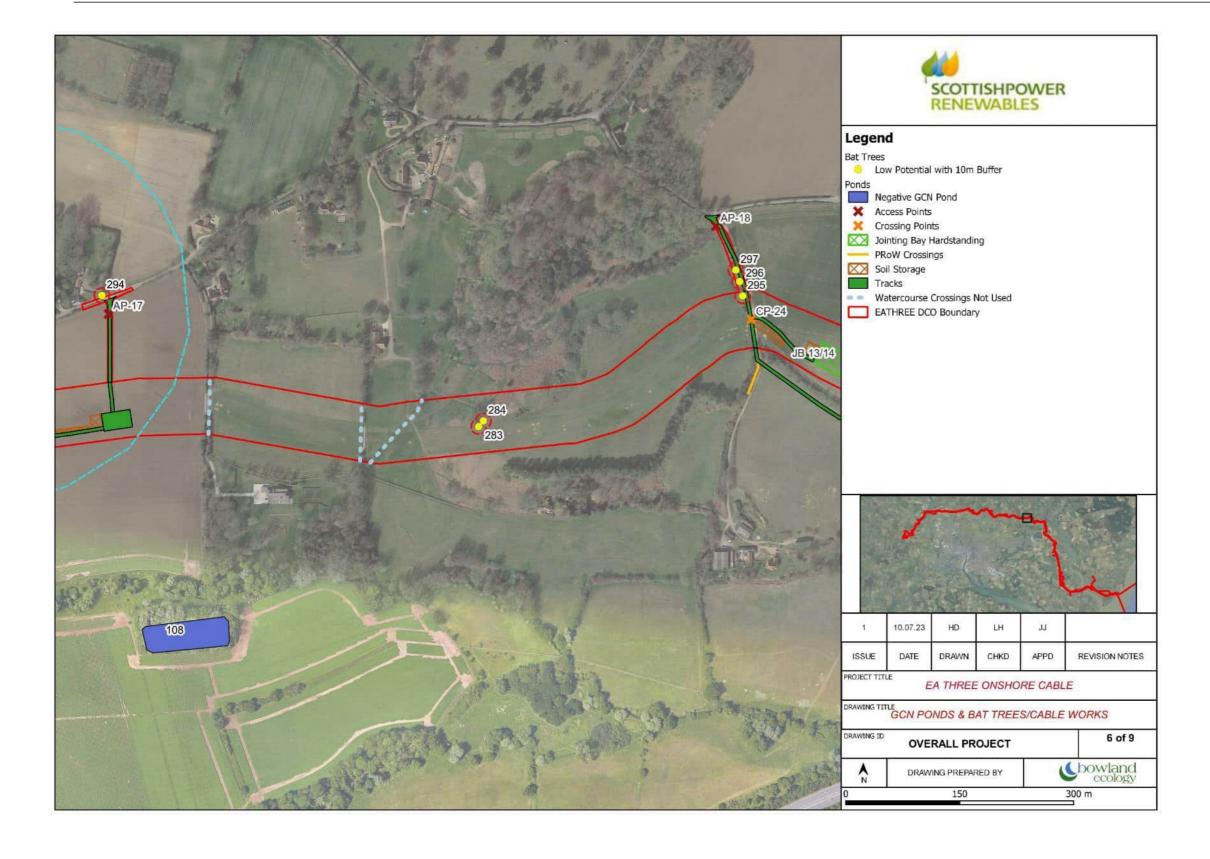




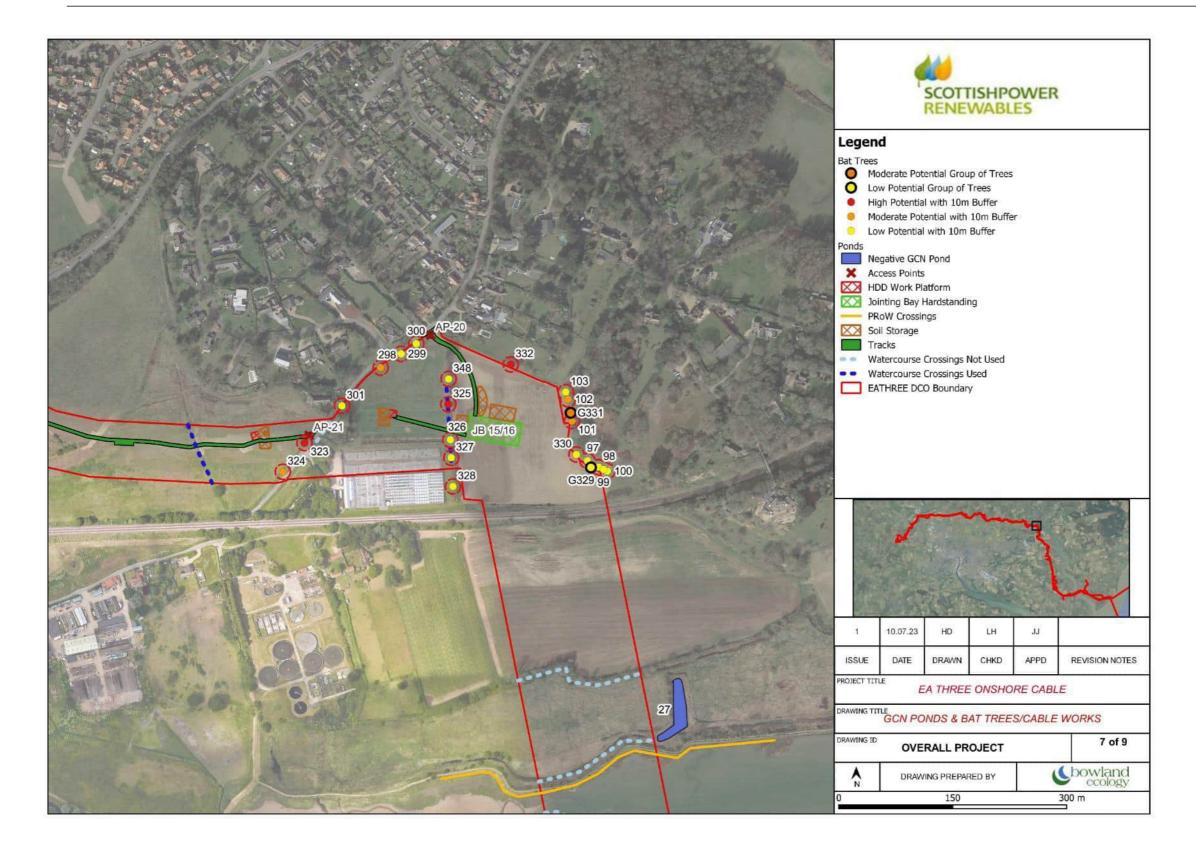




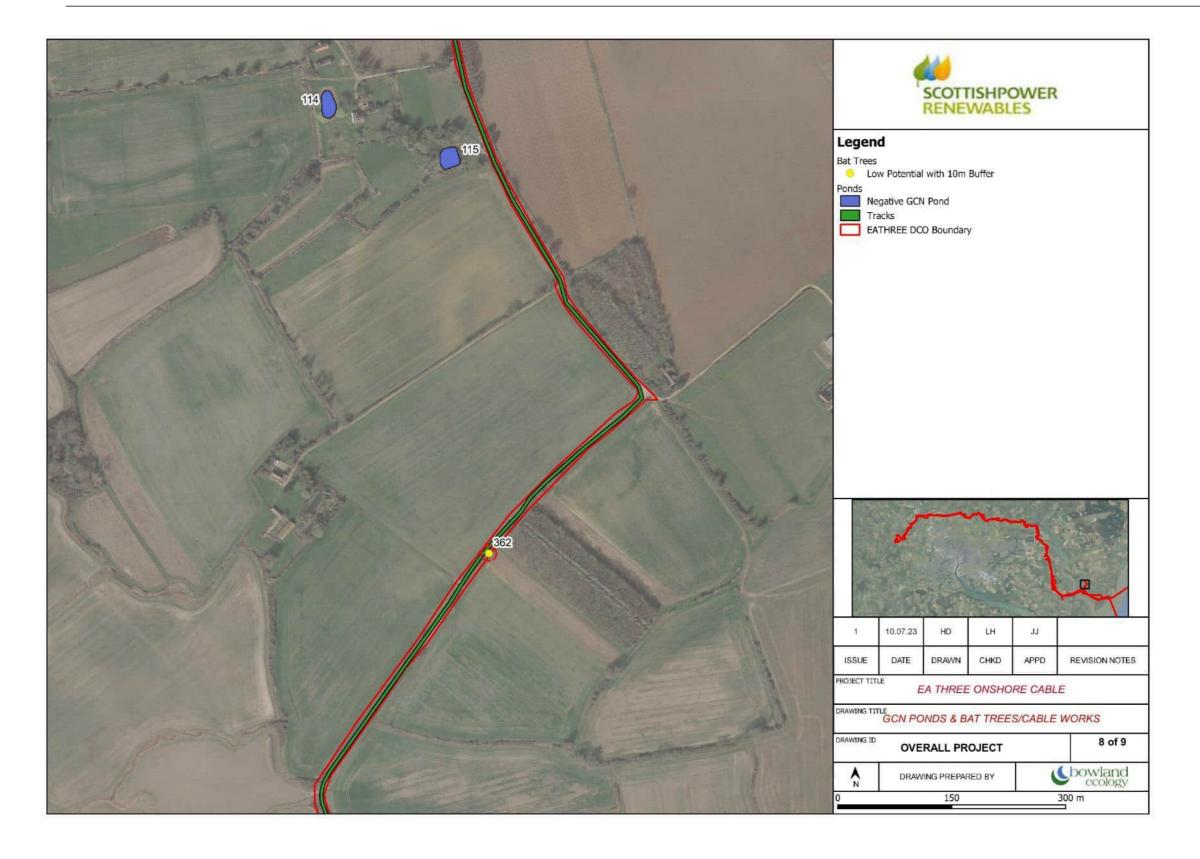




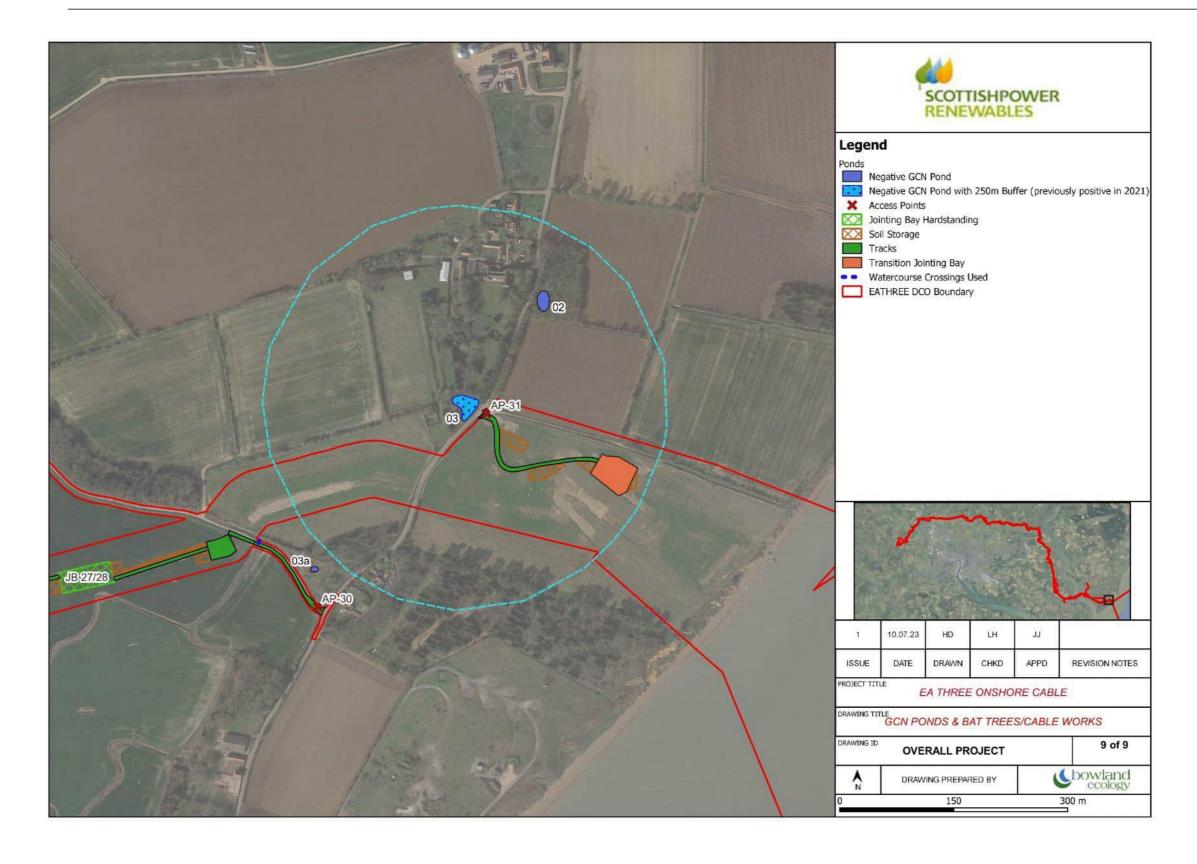












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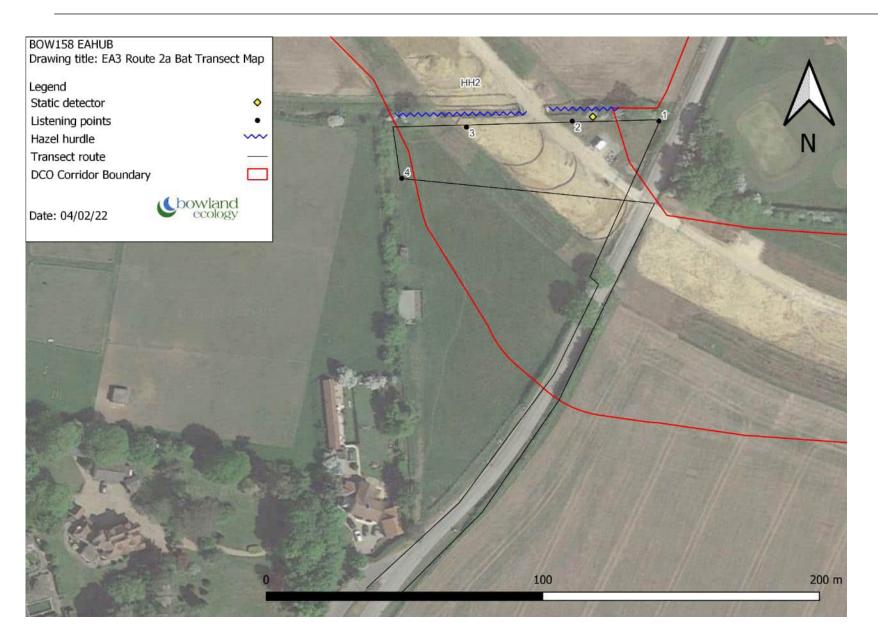
Rev. 2



#### **APPENDIX 2 BAT TRANSECT ROUTE**

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