

# REPORT

## **Preliminary Ecological Appraisal Report**

Knocknagael Site, Essich, Inverness

Client: Field Knocknagael Ltd

Reference: PC3506-RHD-07-XX-RP-Z-0003

Status: Final/1

Date: 28 June 2024

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Document title: Preliminary Ecological Appraisal Report

Subtitle: Knocknagael Site, Essich, Inverness  
Reference: PC3506-RHD-07-XX-RP-Z-0003  
Status: Final/1  
Date: 28 June 2024  
Project name: Field Energy - SGS Knocknagael Ecology  
Project number: PC3506  
Author(s): RL

Drafted by: RL

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Checked by: TC

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Date: 06 June 2024

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Approved by: JP

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Date: 19 June 2024

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Classification

Project related

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Appendix 1: Statutory Biodiversity Metric

## Acronyms

<b>BAP</b>	Biodiversity Action Plan
<b>BESS</b>	Battery Energy Storage System
<b>CAR</b>	Water Environment (Controlled Activities) (Scotland) Regulations 2011
<b>CIEEM</b>	Chartered Institute of Ecology and Environmental Management
<b>EU</b>	European Union
<b>IUCN</b>	International Union for Conservation of Nature
<b>PEA</b>	Preliminary Ecological Appraisal
<b>PEAR</b>	Preliminary Ecological Appraisal Report
<b>SAC</b>	Special Area of Conservation
<b>SBL</b>	Scottish Biodiversity List
<b>SPA</b>	Special Protection Area
<b>SSEN</b>	Scottish and Southern Electricity Networks
<b>SSSI</b>	Site of Special Scientific Interest
<b>UKHab</b>	UK Habitat Classification
<b>ZoI</b>	Zone of Influence

## 1 Introduction

Royal HaskoningDHV has been commissioned on behalf of Field Knocknagael Ltd. (Field), to carry out a Preliminary Ecological Appraisal (PEA) of land at Essich, Inverness, IV2 6AJ. This location is centred upon National Grid Reference NH649389 and is herein referred to as the 'Site' (**Figure 1.1** Knocknagael redline site boundary2).

Field is seeking to construct a Battery Energy Storage System (BESS) (up to 200 MW capacity), with associated infrastructure (including an underground cable route to the adjacent Knocknagael substation), including access and ancillary works. These proposals are herein referred to as the Proposed Development.

The findings of the PEA have been reported within this Preliminary Ecological Appraisal Report (PEAR), which has been produced following the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

The purpose of this PEAR is to evaluate the potential ecological receptors and constraints present within the Site. Identification of such ecological factors will allow for the development of appropriate avoidance, mitigation and compensation measures where needed, and for these to be incorporated into the project design. Additionally, the PEAR identifies where further data collection on specific receptors may be needed.

### 1.1 Background to the Project

#### 1.1.1 Description of Development

The Proposed Development is expected to have a final development footprint for electrical infrastructure of up to 6 hectares (ha), including an underground cable route approximately 500m long, although this is subject to change following engagement with Scottish and Southern Electricity networks (SSEN). The site boundary encompasses land which will not be used as part of the final development footprint, particularly in areas to the east of Biorraid Road and north of the existing Knocknagael substation. This is to allow for flexibility of the final cable route with the transmission operator. The layout of the Proposed Development is shown in **Figure 1.1**.

The location of the Proposed Development is driven by the need for its proximity to the agreed grid connection point with Scottish and Southern Electricity Networks (SSEN), who have confirmed that there is an available connection point, and available capacity for the existing Knocknagael substation. Field has accepted a grid connection offer at this point of connection for the Proposed Development. Locating the proposed BESS next to the existing substation maximises electrical efficiency, decreases the required cable length (which reduces development impacts) and ensures the co-location of electrical infrastructure.

During operation, the Proposed Development would be unmanned and operated remotely with minimal on-site activities required, with the exception of infrequent maintenance activities.

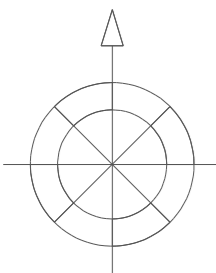
### 1.1.2 Site Description

The Proposed Development covers an approximate 43 hectare (ha) area, although the final development footprint covers only approximately 6 ha of the wider Site, including an approximate 500 m cable route. The broader area identified as the Site includes the existing Knocknagael substation and an indicative cable corridor to connect the Proposed Development to the substation; this wider Site area is to allow for uncertainty in the exact point of connection within the substation. Works within the substation will be undertaken by SSEN.

Of the Site area, approximately 24.4 ha were surveyed during the PEA; this covers the full area within which works for the Proposed Development will take place and is hereby referred to as the 'Ecology Study Area' (**Figure 1.2**). It is anticipated that construction and associated activities associated with the Proposed Development will be contained within the Ecology Study Area.

The approximately 24.4 ha Ecology Study Area is dominated by pasture, sheep grazed modified grassland. The Ecology Study Area included accessible areas within the planning boundary.

The Proposed Development is located within a rural area, surrounded by grazed, modified grassland to the north, south and west and heathland to the east. There are no designated ecological sites present within or adjacent to the Ecology Study Area.




- Notes**
- All dimensions are shown in metres unless noted otherwise.
  - Do not scale from this drawing.
  - This drawing is indicative only and the site layout is likely to change as more information becomes available.

- Legend**
- Planning Boundary
  - Access Track - Unbound Finish
  - Access Track - Asphalt Finish
  - Attenuation Basin
  - Palisade Fence
  - 4m Acoustic Fence
  - 3m Acoustic Fence
  - Stock Proof Fence
  - Indicative Underground Cable Route
  - Site Landscaping and Planting
  - Existing Trees to Remain

1:10	0	100mm	200mm	300mm	400mm	500mm	600mm	700mm	800mm	900mm	1m
1:20		0.5m	1m	1.5m	2m	2.5m	3m	3.5m	4m	4.5m	5m
1:50		1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
1:100		1m	2m	3m	4m	5m	6m	7m	8m	9m	10m
1:200		5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
1:500		5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
1:1000		10m	20m	30m	40m	50m	60m	70m	80m	90m	100m

REV	DATE	DESCRIPTION	BY	CHKD
3	27.08.2024	Landscaping and planting area amended	JH	AP
2	20.06.2024	Change and landscaping amended. Annotations added	JH	AP
1	30.05.2024	Site layout amended	JH	JW
0	28.03.2024	Site Layout Plan - Original	JH	AP



**Field**  
 Field  
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 186 Shoreditch High Street,  
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 E1 6HU

PROJECT: Knocknagael

TITLE: Indicative Site Layout Plan

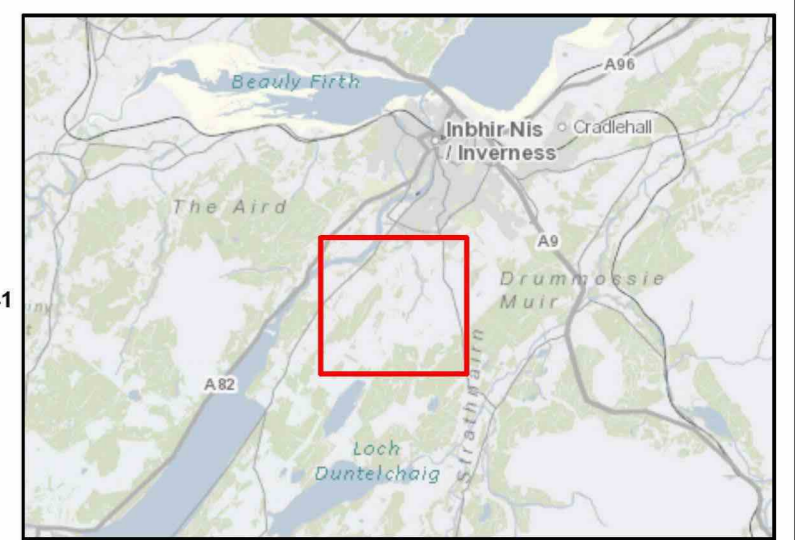
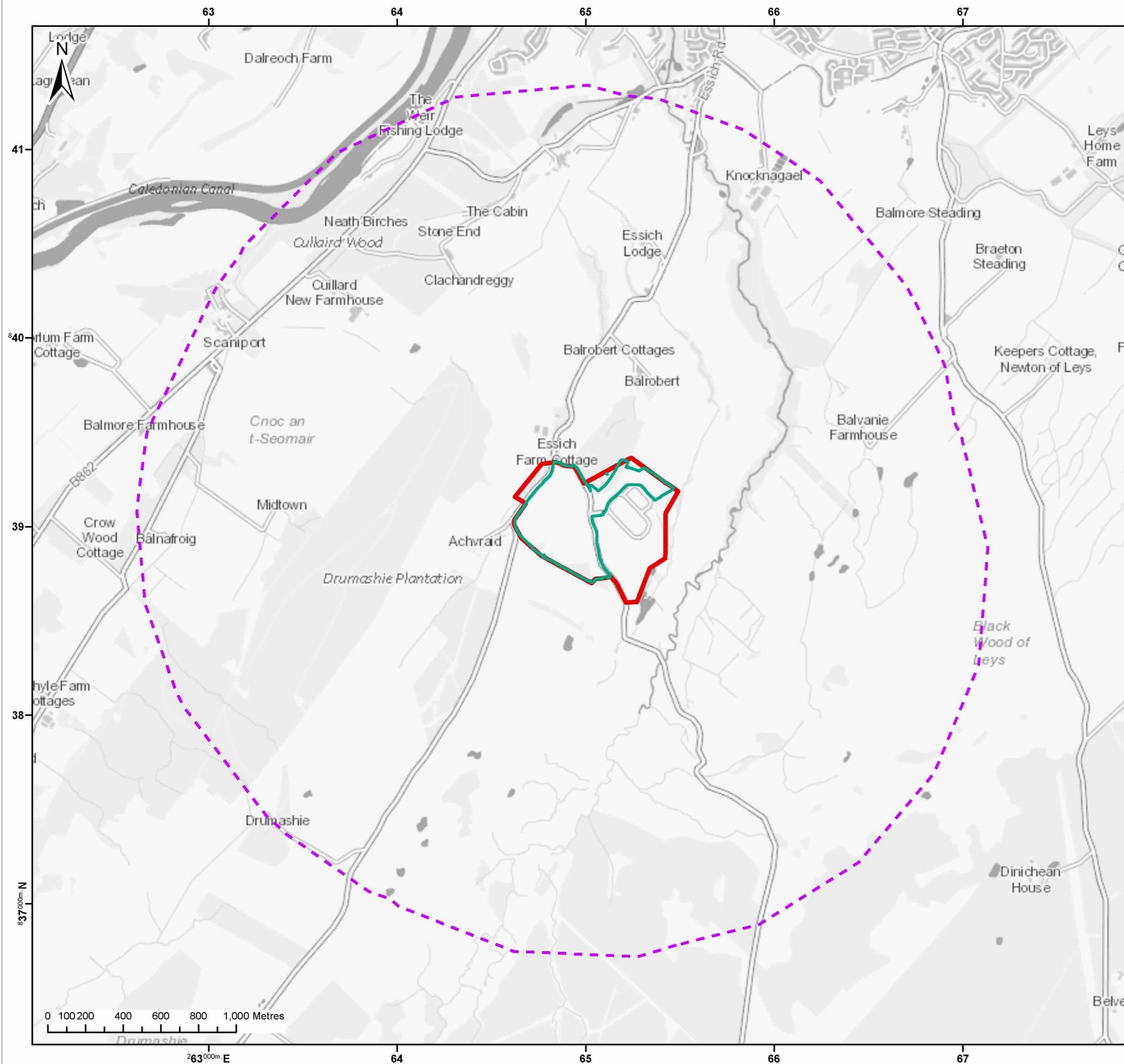
DISCIPLINE: PLANNING

DRAWING STATUS: FOR PLANNING

SCALE	DATE	DRAWN BY	CHECKED BY	APPROVED BY
1:1000 @ A0	28.03.2024	JH	AP	JM
PROJECT NO.	DRAWING NO.	REV.		
BTGBKN001	001.1	03		







**Legend:**

- Planning Boundary
- Ecology Study Area
- 2km Study Area

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Client: <b>Field Knocknagael Ltd</b>	Project: <b>Knocknagael Battery Energy Storage System</b>
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Title:  
**Knocknagael Ecology Study Area**

Figure: 1.2      Drawing No: PC3506-RHD-KN-ZZ-DR-GS-1.2

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01	18/06/2024	MW	JH	A3	1:20,000

Co-ordinate system: British National Grid



## 2 Legislation and Policy

### 2.1 Legislation

#### 2.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (also known as the Habitats Regulations) transposed into UK law the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives). The Habitats Regulations were amended in 2019 to retain the provision of the Regulations following the UK's exit from European Union (EU).

These regulations provide protection for specific habitats listed in Annex I and specific species in Annex II of the Habitats Directive. They set out the decision-making procedures for the protection of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) which, following the 2019 amendment, now form the UK's National Site Network. Under the Habitats Regulations it is an offence (subject to exceptions) to deliberately capture, injure, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, uproot, destroy, or trade in the plants listed in Schedule 4.

#### 2.1.2 The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act (1981) was enacted in order to implement the Birds Directive and Bern Convention in Great Britain but has been amended and supplemented over the intervening decades. It contains four parts and 17 schedules which cover:

- Part 1: Wildlife – the protection of birds, animals, plants and measures to prevent the establishment of non-native species which may be detrimental to native wildlife;
- Part 2: Nature conservation – the countryside and National Parks (including the designation of protected areas);
- Part 3: Public rights of way; and
- Part 4: Miscellaneous provisions of the act.

Under the Wildlife and Countryside Act (as amended) the country nature conservation bodies have a duty to notify any area of land which is 'of special interest by reason of any of its flora, fauna, or geological or physiographical features'. These sites are known as Sites of Special Scientific Interest (SSSIs).

The Wildlife and Countryside Act 1981 (as amended) makes it a criminal offence to:

- Intentionally kill, injure or take any wild bird;
- To take, damage or destroy the nest of any wild bird while that nest is in use or being built;
- To take or destroy the egg of any wild bird;
- To intentionally kill, injure or take any animal listed in Schedule 5 of the act and protects occupied and unoccupied places used for shelter or protection by such animals;
- To intentionally pick, uproot or destroy any wild plant listed in Schedule 8 of the Act; or
- To plant or otherwise cause to grow any non-native, invasive species listed under Part 2 of Schedule 9 of the Act.

### **2.1.3 Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)**

The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (known as CAR) regulate certain activities in Scotland that could affect its water environment. The regulations cover rivers, lochs, transitional waters (estuaries), coastal waters groundwater, and groundwater dependant wetlands (also known as ground water dependent terrestrial ecosystems). In order to carry out activities near or in waterbodies, a CAR license may be required depending on the nature of the works.

## **2.2 Policy and Guidance**

### **2.2.1 National Planning Framework 4 (NPF4)**

NPF4 is a long-term plan looking to 2045 that guides spatial development, sets out national planning policies, designates national developments and highlights regional spatial priorities. Policy 3 of the NPF4 supports development that helps to secure positive effects for biodiversity. The Policy states that development proposals should seek to “*conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention*”.

Research has since been carried out by the Scottish Government regarding the implementation of NPF4, Policy 3 (Scottish Government, 2023). The findings state that the Defra Biodiversity Metric could be adapted for planning and development use in Scotland.

### **2.2.2 Scottish Biodiversity List**

The Scottish Biodiversity List (SBL) is a list of animals, plants and habitats that Scottish Ministers consider to be of Principal Importance for biodiversity conservation in Scotland (NatureScot, 2020). Habitats and species in this list are noted where appropriate herein.

### **2.2.3 Highland Nature Biodiversity Action Plan**

The Highland Nature Biodiversity Action Plan (BAP) contains nine key actions for Highland nature conservation and details priority species and habitats within the Highland region that must be considered within any development assessment. Any BAP habitats or species which may be affected by the development proposals are referenced herein.

### **2.2.4 The Highland Council Biodiversity Planning Guidance (BPG)**

The Highland Council have developed BPG as non-statutory planning guidance to manage biodiversity enhancement (Highland Council, 2024). This includes the use of the Department for Environment, Food and Rural Affairs’ (Defra) Biodiversity Net Gain (BNG) Metric (Defra, 2023) until a suitable metric for use in Scotland has been developed. At the time of writing there is no statutory requirement for BNG in Scotland, and a BNG metric, which will be relevant to Scottish habitats, is in development by NatureScot.

The Chartered Institute of Ecology and Environmental Management (CIEEM) has defined BNG as a goal for a development project, policy, plan or activity in which the impacts on biodiversity are outweighed by measures taken to avoid and minimise the impacts, to restore affected areas and finally to offset the residual impacts, to the extent that the gain exceeds the loss (CIEEM, 2019).

## 3 Methodology

### 3.1 Desk Study

A desk study was carried out to identify potentially relevant nature conservation sites and notable habitats/species that could be affected by the proposed works.

European designations and other statutory conservation sites were searched for within 5km of the Ecology Study Area using the Multi-Agency Geographic Information for the Countryside (MAGIC) maps online database (MAGIC, 2024). This search was completed in May 2024.

Non-statutory designated sites were identified within 2 km of the Ecology Study Area boundary following a data request from the Highland Biological Recording Group (HBRG) in April 2024.

Data regarding SBL habitats within 2 km of the Ecology Study Area is available across various databases through NatureScot (2023) which is collated by local environmental data centres.

Records of protected and notable species for within 2km of the Ecology Study Area were requested and received from HBRG in April 2024.

Any identified designations, habitats or species within the relevant ZoI were reviewed with respect to their qualifying features, connectivity and distance from the Ecology Study Area, to determine whether they are at risk of being affected by the Proposed Development.

The outcomes of the desk study are detailed in **Section 4.1**.

#### 3.1.1 Zones of Influence

This section identifies the ecological features to be considered in this appraisal; including the methods and resources to be used and establishes the zone of influence (ZoI) for surveys and any subsequent assessments. The ZoI is the area over which off-site ecological features may be subject to significant effects arising from the Proposed Development and associated activities within the Site.

For the purposes of this appraisal, the features considered and their ZoI are:

- Statutory designated sites within 5 km of the Ecology Study Area;
- Non-statutory designated sites within 2 km of the Ecology Study Area;
- Notable (e.g. SBL Habitats of Principal Importance and ancient woodland) habitats present within or adjacent to the Ecology Study Area; and
- Species located within 2km of the Ecology Study Area.

### 3.2 Field Survey

A PEA survey of the Ecology Study Area (**Figure 1.2**) was carried out on 4<sup>th</sup> and 6<sup>th</sup> of March 2024 by a suitably qualified ecologist (Tom Clemence, MSc, ACIEEM), in accordance with CIEEM's guidance for PEA (CIEEM, 2017). The field survey classified habitats using the UK Habitat Classification (UKHab) methodology (UKHab Ltd, 2023).

The UKHab survey method was 'extended' to assess the potential for, identify evidence of, or confirm presence of protected or notable species within the site boundary, in accordance with CIEEM guidelines (CIEEM, 2017).

Details have been provided within this report of characteristic habitats, species composition and highlighted features of ecological interest encountered during the field survey. Invasive non-native species presence was also noted if encountered. The outcomes for the field survey are detailed in **Section 4.2**.

### 3.2.1 Biodiversity

In accordance with the NPF4 policy which seeks "*positive effects for biodiversity*", research from the Scottish Government (2023) and in support of The Highland Council Biodiversity Planning Guidance (2024), the value of habitats present and those proposed within the Ecology Study Area have been quantified using the Defra Statutory Biodiversity Metric (Defra, 2024). The output of this calculation is summarised in **Section 4.4**, and a copy of the Statutory Biodiversity Metric used is set out in **Appendix 1**.

The methodology followed to calculate baseline and post development biodiversity values have been based on Defra (2024) guidance, using the Biodiversity Metric (Defra, 2024). This includes determining habitat condition, ecological connectivity and strategic significance of the habitats present within the Ecology Study Area.

### 3.3 Limitations

The survey was undertaken over two days in early March and recorded species and habitats observed during this period. There is potential that species present in the Ecology Study Area would not have been observed during the surveys and therefore not recorded. This may include ground nesting birds that nest later in the year but were not present at the time of survey.

The BNG metric used has been developed for habitats in England and is not adjusted to reflect the value of the habitats found in Scotland. Therefore, where required, the quantified biodiversity values as calculated by the Biodiversity Metric are used as a guide. Where appropriate, professional judgement has been used to also qualify habitat value and recommended proportionate mitigation measures.

Despite these constraints, when considering the objective of the survey, the habitats present and the surrounding areas, it is considered that these constraints would not have a major impact on the validity of findings.

## 4 Results

### 4.1 Desk Study

#### 4.1.1 Designated Sites

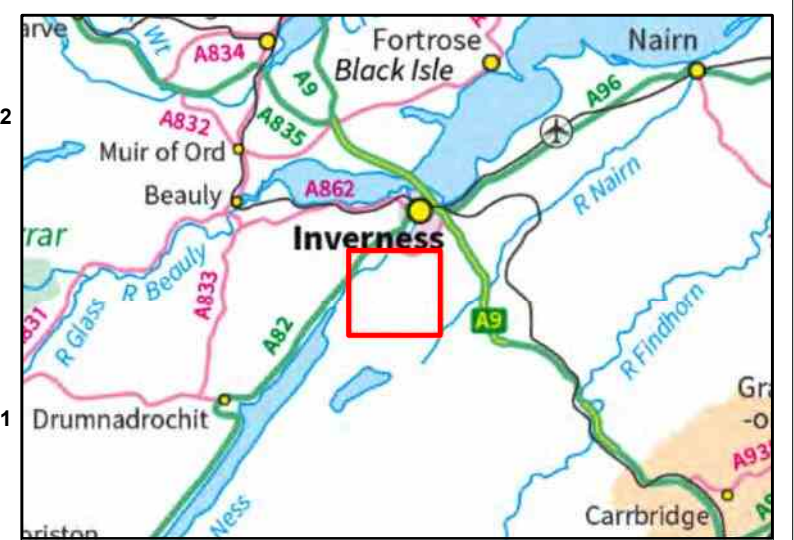
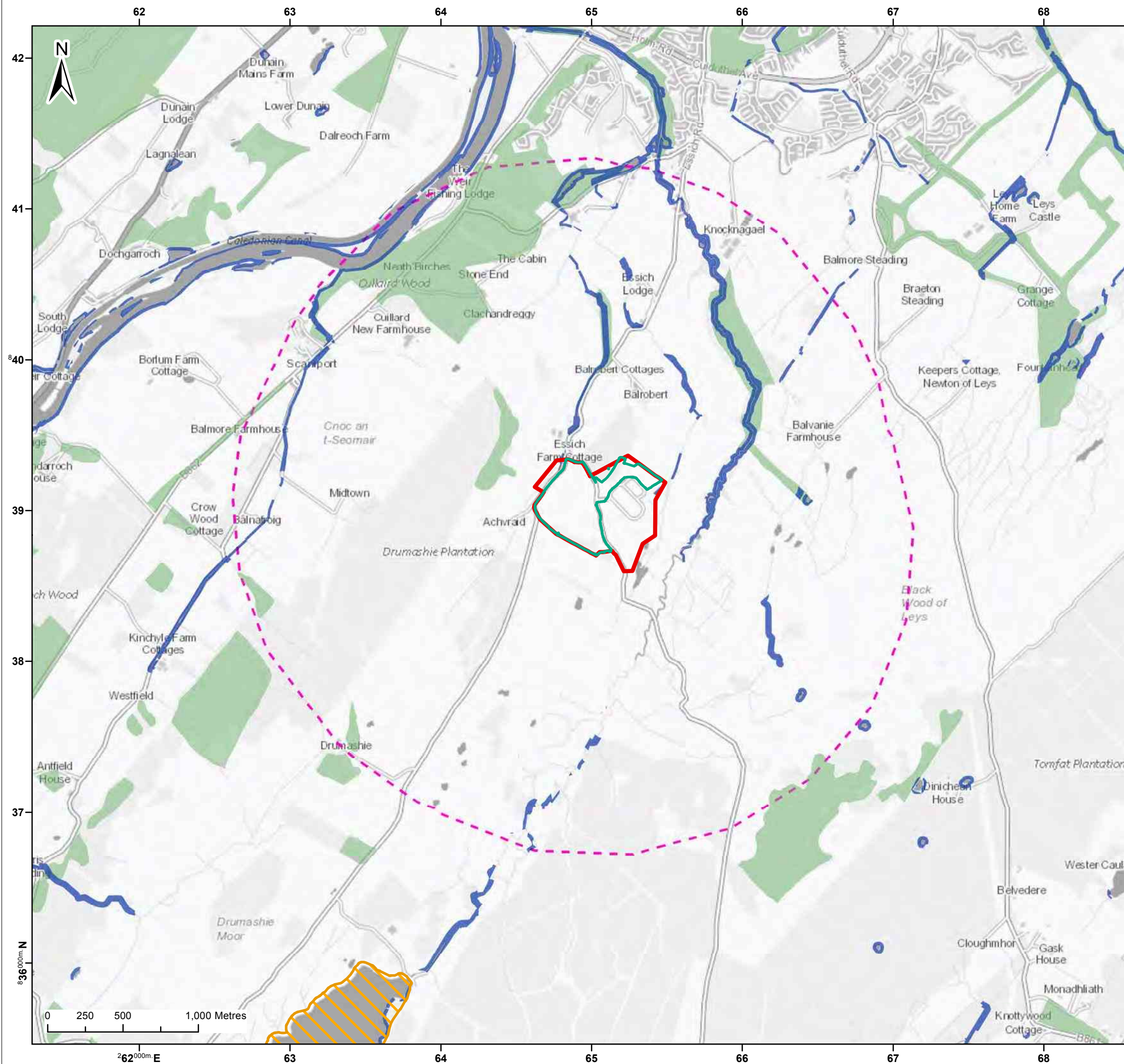
No statutory designated sites were recorded within or adjacent to the Ecology Study Area.

One statutory designated site was found within 5 km of the Ecology Study Area. Loch Ashie SPA and SSSI is located approximately 3 km south-west of the Ecology Study Area (Figure 4.1). Loch Ashie SPA qualifies under Article 4.1 of the European Bird Directive (79/409/EEC) by regularly supporting bird populations of European importance. Specifically, the Annex 1 species Slavonian grebe (*Podiceps auritus*). The population comprises an autumn gathering of up to 60 individuals, representing 15% of the population recorded within Great Britain (JNCC, 2018). Slavonian grebe is a Red List of Birds of Conservation Concern species and is restricted to freshwater and marine environments (IUCN, 2024).

No non-statutory designated sites were identified on-site or within 2 km of the Ecology Study Area.

#### 4.1.2 Habitats of Principal Importance

Several habitats listed on the SBL are located within 2 km of the Ecology Study Area. These comprise, ancient woodland and riparian woodland (a type of wet woodland) (NatureScot, 2023) (**Figure 4.1**). None are located within the Ecology Study Area. However, two small areas of riparian woodland are located within the Site. These areas comprise areas of 0.3 ha and 0.5 ha located on the eastern (National Grid Reference NH654391) and western edges (National Grid Reference NH648393) of the Site.



**Legend:**

- Planning Boundary
- Ecology Study Area
- 2km Study Area
- Special Protection Area (SPA)
- Ancient Woodland
- Riparian Woodland

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**Report:**  
Field Knocknagael Ltd - Preliminary Ecological Appraisal

**Title:**  
Ecological data search - statutory and non-statutory sites and priority habitats

Figure: 4.1	Drawing No: PC3506-RHD-KN-ZZ-DR-GS-4.1				
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Co-ordinate system: British National Grid



### 4.1.3 Protected and Notable Species

All species recorded are based on the results provided by HBRG in April 2024.

#### 4.1.3.1 Birds

All wild bird species in the UK are protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally disturb or cause harm to birds or their nests. No records of protected or notable species were recorded on-site or within 2 km of the Ecology Study Area.

#### 4.1.3.2 Bats

No records of bats were returned for within 2 km of the Ecology Study Area.

#### 4.1.3.3 Badger

No records of badger were returned for within the Ecology Study Area. The closest record is located approximately 0.82 km west of the Ecology Study Area and is dated from 2007. The record does not specify whether it was for a sett.

#### 4.1.3.4 Otters and Water Voles

No records were provided for otters or water voles within 2 km of the Ecology Study Area.

#### 4.1.3.5 Amphibians

No records of protected or notable amphibian species were returned by HBRG.

#### 4.1.3.6 Reptiles

No records of protected and notable reptile species were provided for within the Ecology Study Area or within the Ecology Study Area. However, two records of common lizard (*Zootoca vivipara*) were recorded within 2 km. The closest record was located 0.64 km southeast of the Ecology Study Area.

#### 4.1.3.7 Invertebrates

Records of two notable invertebrate species were returned by HBRG for within 2 km of the Ecology Study Area. These comprise large heath butterfly (*Coenonympha tullia scotica*) and the northern mining bee (*Andrena ruficrus*), both of which are listed as SBL Species of Principal Importance for conservation. The large heath butterfly record is dated from 1978 and located approximately 0.6 km southeast of the Ecology Study Area. The northern mining bee record is dated from 2021 and located approximately 1.14 km west of the Ecology Study Area.

#### 4.1.3.8 Flora

No records of protected or notable flora were found on-site. However, a number of threatened Red List (IUCN, 2024) species have been recorded within 2 km of the Ecology Study Area. The closest records are located within 0.54 km. The species include grass-of-parnassus (*Parnassia palustris*), common cottongrass (*Eriophorum angustifolium*) and others which are associated with heathland and moorland habitats.

#### 4.1.3.9 Invasive Non-native Species

No records of invasive non-native species were returned for within the Ecology Study Area, Ecology Study Area or within 2 km of these areas.



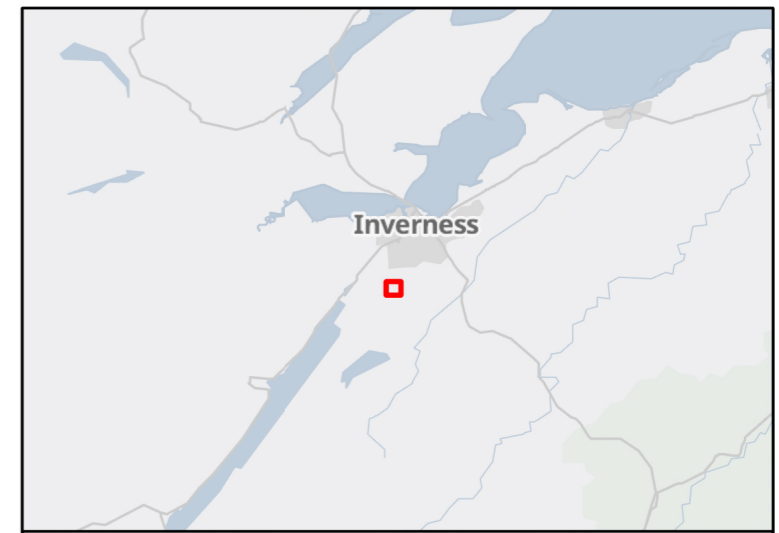
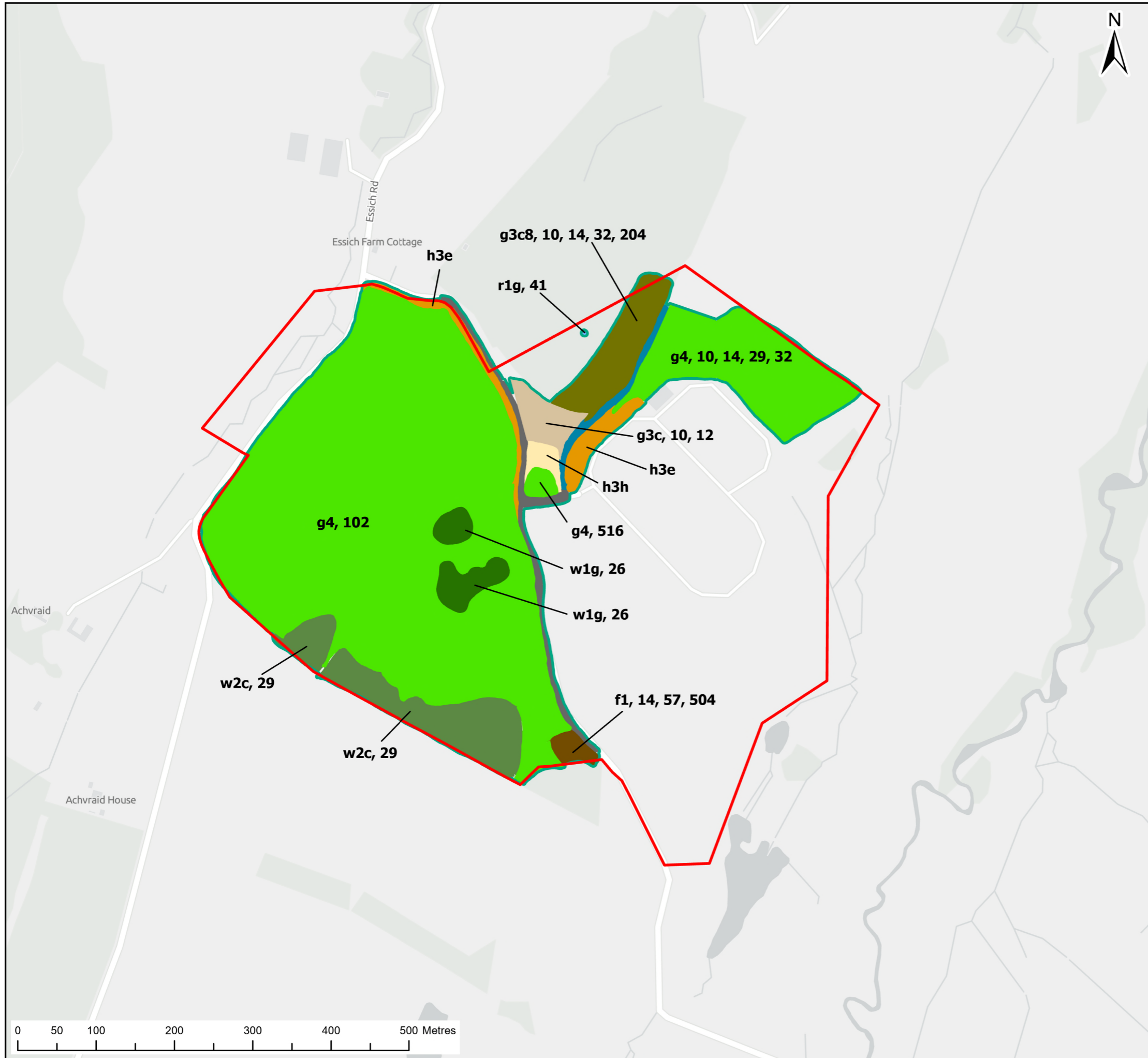
## 4.2 Field Survey

### 4.2.1 Habitats

The field survey was undertaken on the 4<sup>th</sup> and 6<sup>th</sup> of March 2024 by a suitably qualified ecologist who recorded and mapped habitat types within sections of the Ecology Study Area (as shown in **Figure 4.2**). Typical and notable plant species were recorded for different habitat types, and these reflect conditions at the time of the survey.

Habitats that were found during the field survey are listed in **Table 4.1** and illustrated within **Figure 4.3**. Secondary codes are used to add information on the habitat and provide environmental context. Secondary codes recorded during the survey are shown in **Figure 4.3** and in **Table 4.1**. These habitats are subdivided further into habitat types, following the UK Habitat Classification system, and are presented in **Section 4.2.1.1 to 4.2.1.10**.

Habitats of greatest ecological interest which are present within the Ecology Study Area comprise small areas of remnant blanket bog and broadleaved woodland. Other habitats present include neutral grassland, artificial sealed and unsealed surfaces, coniferous woodland and scrub.



**Legend:**

- Planning Boundary
- Ecology Study Area
- f1 - Bog
- u1b - Developed land - sealed surface
- h3e - Gorse scrub
- g3c8 - Holcus-Juncus neutral grassland
- h3h - Mixed scrub
- g4 - Modified grassland
- w1g - Other broadleaved woodland
- w2c - Other coniferous woodland
- g3c - Other neutral grassland
- r1g - Other standing water
- u1f - Sparsely vegetated urban land

Secondary code	UKHab code
10	Scattered scrub
12	Scattered bracken
14	Scattered rushes
26	Wood-pasture and parkland
29	Plantation
32	Scattered trees
41	Pond (non-priority)
57	Peat
102	Sheep grazed
204	Veteran tree
504	Waterlogged
516	Active management

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Title: **Ecological Habitat Mapping**

Figure: 4.2 Drawing No: PC3506-RHD-KN-ZZ-DR-GS-4.2

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P02	18/06/2024	MW	JH	A3	1:5,000
P01	12/04/2024	JH	SB	A3	1:5,000

Co-ordinate system: British National Grid



Table 4.1 UKHAB Habitat types recorded within the Ecology Study Area

Habitat Type	UKHAB Code	Area (ha)	SBL
Grassland - Modified grassland	g4	17.638	X
Other coniferous woodland	w2c	1.673	X
Bog	f1a	0.167	✓
Mixed scrub	h3h	1.57	X
Gorse scrub	h3e	1.228	X
Grassland – Other neutral grassland	g3c8	1.387	X
Other woodland; broadleaved	w1g	0.562	X
Developed land; sealed surface	u1b	0.375	X
Sparsely vegetated urban land	u1f	0.218	X
Other standing water	r1g	0.001	X

Table 4.2 Secondary codes

Secondary code	UKHAB Code	Secondary code	UKHAB Code
10	Scattered scrub	41	Pond (non-priority)
12	Scattered bracken	57	Peat
14	Scattered rushes	102	Sheep grazed
26	Wood-pasture and parkland	204	Veteran tree
29	Plantation	504	Waterlogged
32	Scattered trees	516	Active management

#### 4.2.1.1 Grassland – Modified Grassland

Approximately 17.48 ha modified grassland is present within the Ecology Study Area. This is broken into three distinct parcels as described below and shown within **Figure 4.3**.

The western section of the Ecology Study Area is dominated by modified grassland (UKHab code g4, secondary code 102), much of which was used for grazing sheep at the time of survey (**Figure 4.3**). The main species in this habitat were perennial rye-grass (*Lolium perenne*) and smooth meadow-grass (*Poa pratensis*).

Modified grassland was recorded also to the northeast of the Ecology Study Area (UKHab code g4, secondary code 10 14 29 32) (**Figure 4.4**). The species composition within this area includes tufted hair-grass (*Deschampsia cespitosa*), soft-rush (*Juncus effusus*), cock's-foot (*Dactylis glomerata*), gorse (*Ulex europaeus*) and crested dog's-tail (*Cynosurus cristatus*). Management of this area appeared to be occasional or absent and as such a tall, rank sward had established with a thick layer of thatch at the time of survey. Occasional scattered silver birch (*Betula pendula*) and other planted trees were present throughout.

A small section of modified grassland was also in the centre of Ecology Study Area by the Knocknagael substation (UKHab code g4, secondary code 516). This area had been recently mown at the time of survey and as such had a short sward.

All areas of modified grassland within the Ecology Study Area were assessed as 'poor' according to the Defra assessment criteria (Defra, 2023).



Figure 4.3 Modified grassland with scattered mature trees in western section of the Ecology Study Area.



Figure 4.4 Modified grassland with planted trees with rabbit guards (left) and active management (right)

#### 4.2.1.2 Other Neutral Grassland

Approximately 0.42 ha of 'other neutral grassland' was within the Ecology Study Area, with scattered bracken and scattered scrub also present (UKHab code g3c, secondary code 12 10) (**Figure 4.6**). Species present included gorse, bracken (*Pteridium aquilinum*) and red fescue (*Festuca rubra*). The condition of this habitat was assessed as 'moderate' according to the Defra assessment criteria (Defra, 2023).



Figure 4.5 Other neutral grassland

#### 4.2.1.3 Other Woodland; Broadleaved

Two adjacent patches of 'Other woodland; broadleaved' (UKHab code w1g, secondary code 26) (**Figure 4.6**) are present within the Ecology Study Area. Both areas are located within the western half of the Ecology Study Area and comprise mature oak (*Quercus sp.*), ash (*Fraxinus excelsior*), lime (*Tilia x europaea*) and sycamore (*Acer pseudoplatanus*) trees.



Figure 4.6 Other woodland; broadleaved

#### 4.2.1.4 Other Coniferous Woodland

Two blocks of 'other coniferous woodland' were recorded along the southwestern boundary of the Ecology Study Area (UKHab code w2c, secondary code 29) (**Figure 4.7**). Both blocks comprise sitka spruce (*Picea sitchensis*) plantation, which cover a total area of 1.673 ha and are assessed to be in 'poor' condition.



Figure 4.7 Other coniferous woodland

#### 4.2.1.5 *Holcus-Juncus* Neutral Grassland

An approximate 0.97 ha area of '*Holcus-Juncus* neutral grassland' was present near the north of the Ecology Study Area (UKHab code g3c8, secondary codes 10, 14, 32 and 204) (**Figure 4.8**). The dominant species present were soft-rush and cock's-foot within the wet areas of grassland. However, this was a mosaic habitat with mature ash, rowan (*Sorbus aucuparia*) and silver birch trees, dry areas of grassland and scattered gorse scrub also present. The condition assessment for this area was 'moderate'.



Figure 4.8 *Holcus-Juncus* neutral grassland

#### 4.2.1.6 Gorse Scrub

A total of approximately 1.23 ha of gorse scrub was recorded throughout the Ecology Study Area. This was distributed north of the Knocknagael substation and along field boundaries (UKHab Code h3e) (**Figure 4.3** and **Figure 4.9**). The dominant species in this habitat is gorse, though bracken, broom (*Cytisus scoparius*) and blackthorn (*Prunus spinosa*) were also recorded. The condition of this habitat was assessed as 'moderate'.



Figure 4.9 Heathland and shrub – gorse scrub

#### 4.2.1.7 Mixed Scrub

An approximate 1.57 ha area of mixed scrub is present in the northern section of the Ecology Study Area (UKHab code h3h) (**Figure 4.3** and **Figure 4.10**). Species in this habitat were gorse, blackthorn and broom. The condition of this habitat was assessed as ‘moderate’.



Figure 4.10 Mixed scrub

#### 4.2.1.8 Blanket Bog

In the south of the Ecology Study Area is an approximately 0.167 ha area of remnant blanket bog (UKHab code f1, secondary codes 14, 57 and 504), a SBL Habitat of Principal Importance. The area comprises waterlogged peat bog with scattered rushes and sphagnum moss (**Figure 4.3** and **Figure 4.11**). The bog is thought to be surface water fed due to its low-lying location. The adjacent habitats comprise sheep grazed modified grassland. The condition was assessed as ‘good’.



Figure 4.11 Bog habitat (left), sphagnum moss (right)

#### 4.2.1.9 Other Standing Water

A small pond was recorded north of the Ecology Study Area (UKHab code r1g, secondary code 41) (**Figure 4.3** and **Figure 4.12**). The pond covered an area of approximately 0.001 ha and was shallow. It is likely that it seasonally dries out in the summer months. The condition of the pond was assessed as moderate.



Figure 4.12 Other standing water

#### 4.2.1.10 Sparsely Vegetated Urban Land

Approximately 0.22 ha of 'sparsely vegetated urban land' is present within the Ecology Study Area (u1f) (**Figure 4.3** and **Figure 4.13**). The area comprises an access track of compact aggregates which have been colonised by a sparse covering of scattered grasses and herbs.





Figure 4.13 Sparsely vegetated urban land

#### 4.2.1.11 Developed Land; Sealed Surface

Approximately 0.37 ha of 'developed land; sealed surface' (UKHab code u1b) is present within the Ecology Study Area (**Figure 4.3**). The area comprises a tarmacked public road which bisects the Ecology Study Area.

### 4.2.2 Species

#### 4.2.2.1 Birds

Opportunities for nesting birds within the Ecology Study Area are limited to the woodland, scrub and *Holcus-Juncus* neutral grassland habitats.

The following bird species were observed in flight or heard during the field survey:

- red kite (*Milvus milvus*);
- lapwing (*Vanellus vanellus*);
- curlew (*Numenius arquata*);
- herring gull (*Larus argentatus*);
- hooded crow (*Corvus cornix*); and
- sparrow (*Passer domesticus*)

Of the birds observed, red kite and lapwing are SBL and Highland Nature BAP species and are listed under Schedule 1 of The Wildlife and Countryside Act. Lapwing is Red List species under the Birds of Conservation Concern review, a Priority Species in the UK BAP and is listed as "globally near threatened" on the IUCN Red list of Threatened Species. Curlew is classified in the UK as an Amber List species under the Birds of Conservation Concern review, is a Priority Species in the UK BAP and is classified as "near threatened" on the IUCN Red List.

#### 4.2.2.2 Bats

No bats or evidence of their presence was recorded during the PEA survey. However, the trees within the 'other woodland; broadleaved' are likely to provide some potential roost features. In addition, the *Holcus-Juncus* neutral grassland, gorse scrub and mixed scrub habitats are likely to provide suitable habitat for foraging and commuting bats.

#### 4.2.2.3 Badger

No signs of badger activity were observed during the PEA survey. Mammal tracks were observed in the area of gorse scrub and mixed scrub, although no hair or other field signs were observed to indicate these were from badgers.

Badger setts are confirmed as absent from the Ecology Study Area.

#### 4.2.2.4 Otters and Water Voles

During the PEA survey, no watercourses were identified within the Ecology Study Area. However, it is noted that a small watercourse, Essich Burn, is located within the north-west of the site boundary. The burn is located outside of the Ecology Study Area and therefore was not included within the PEA.

Due to the presence of a watercourse within the site boundary, the presence of otter and water vole cannot be ruled out. However, they are considered likely absent from within the Ecology Study Area due to the absence of suitable habitats.

#### 4.2.2.5 Amphibians

No great crested newts (*Triturus cristatus*) (GCN) or evidence of GCN was recorded during the PEA survey.

Full Habitat Suitability Index (his) surveys for GCN breeding ponds were not conducted during the field survey. However, the pond (categorised as 'other standing water' under UKHab) identified within the Ecology Study Area is considered unsuitable to for GCN, due to it likely being dry during the breeding season. No other water bodies were identified within or adjacent to the Ecology Survey area.

The majority of terrestrial habitats provide negligible resting and foraging opportunities for GCN and other amphibians. However, the unmanaged areas of grassland and scrub provide suitable sheltering and foraging opportunities.

Populations of GCN are considered likely absent from within the site boundary due to the absences of suitable breeding habitat. However, suitable conditions for common toad (a SBL Species of Principal Importance), are present and therefore the presence of a population cannot be ruled out.

#### 4.2.2.6 Reptiles

No reptiles or evidence of their presence was recorded during the PEA survey.

However, the scrub, other neutral grassland, *Holcus-Juncus* neutral grassland and northeastern area of modified grassland located within the Ecology Study Area provide a range of suitable opportunities for reptiles. The opportunities provided are sufficient to sustain a population, were one to be present.

### 4.2.3 Invasive Non-native Species

No invasive non-native plant species were recorded during the PEA survey. These species are considered likely absent from within the Ecology Study Area.

### 4.3 Groundwater Dependent Terrestrial Ecosystems (GWDTE)

GWDTE, which are wetland habitats which primarily derive their water supply from groundwater, rather than surface water, are protected in Scotland under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). GWDTE may be sensitive to works associated with the Proposed Development. As such, any activities which may affect GWDTE should be avoided. Where avoidance is not possible, safeguards are required.

Guidance from Confederation of Forest Industries (Confor) (2018) and the Scottish Environment Protection Agency (SEPA) (2017) have been considered to determine the risk of GWDTE being present within 250 m of the Ecology Study Area.

A review of the Scottish Environment Protection Agency (SEPA) Scotland's Soils Map shows that the soils within the Site and those within 250 m comprise humus-iron podzols, derived from Old Red Sandstone strata, often with water-modified material. No presence of peat based materials are noted. The information obtained from this review substantially reduced the risk of GWDTE being present within the Site. However, the resolution of this mapping is such that a more detailed site specific assessment has been undertaken to determine the likely presence or absence of GWDTE.

The habitats within the Ecology Study Area are predominantly dry habitats, which rules out the presence of GWDTE in these areas. The one exception to this is a small (0.167 ha) area of bog, within the south-east of the Ecology Study Area (**Figure 4.3**). Vegetation within the bog is dominated by scattered rushes and sphagnum moss, indicating that it is an active bog. A review of the topography of this area shows that the bog is located within a localised depression and is therefore wet as a result of surface water being directed toward it (**Figure 4.14**). A construction exclusion zone will be implemented around the bog to avoid loss or degradation of the blanket bog habitat (construction exclusion zones are shown in **Figure 6.1**).

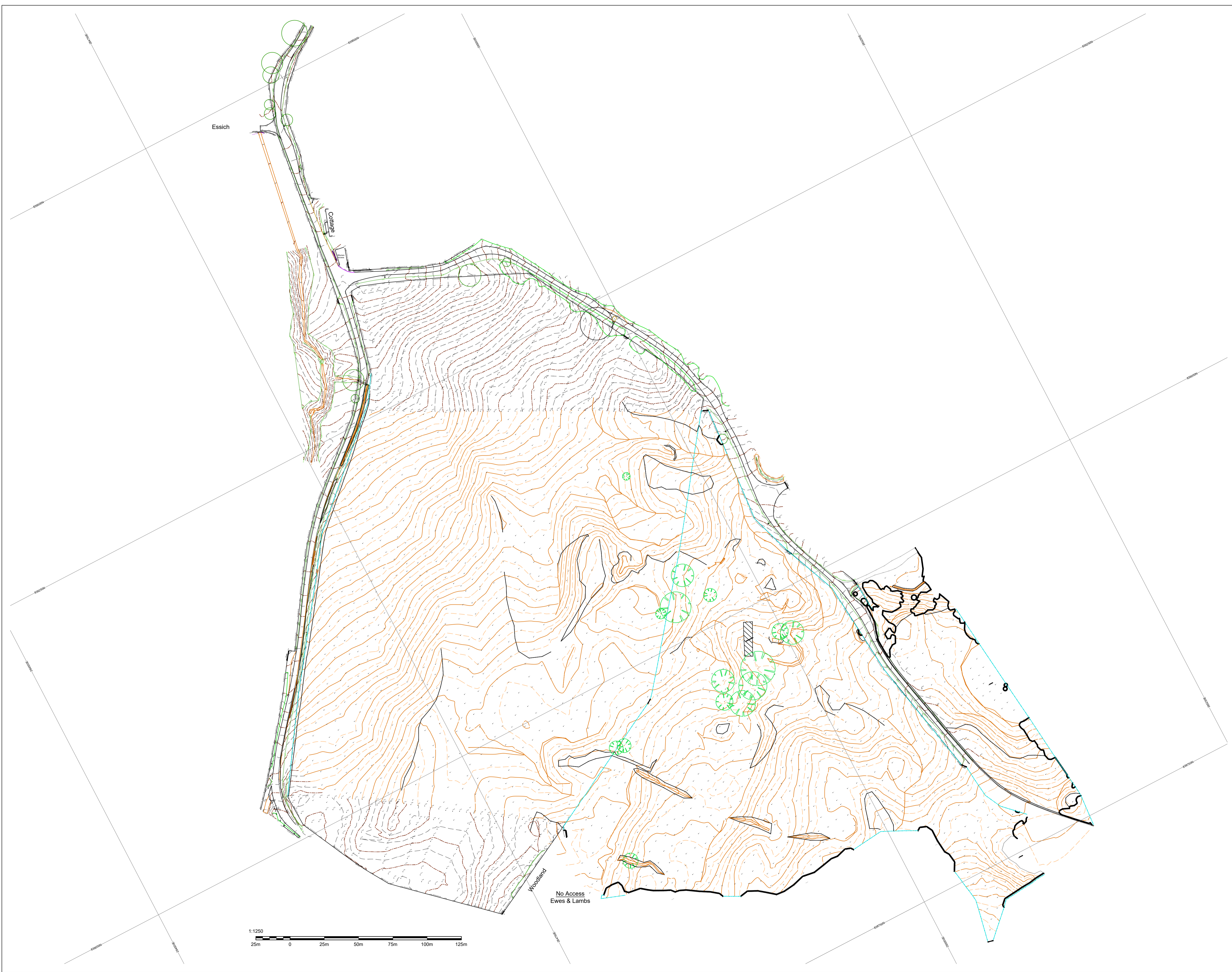
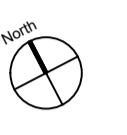
GWDTE are therefore considered to be likely absent from within and adjacent to the Ecology Study Area, and no further assessment is required.

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**Notes**

- i) All survey levels are related to Ordnance Survey using GPS.
- ii) Whilst every effort to locate all major service covers (ie manhole positions) it should be noted that this may not be possible in all cases due to ground conditions or local obstructions.



Issue	Revision	Initial	Date

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Client:  
**Field**

Project:  
**Proposed Development  
Knocknagael  
Essich**

Drawing Title:  
**Topographic Survey**

Status:  
**For Information**

Scale: 1 : 1250 @ A1 Date: 01/06/2024  
 By: SCD Checked: IKF Approved: SCD

Dwg. No.  
**24016-01** Rev.  
-

Figure 4.14 Topographic Survey

#### 4.4 Biodiversity Value

In order to assess whether the Proposed Development is able to deliver positive effects for biodiversity, in accordance with NPF4, the baseline and post-development biodiversity value of the Ecology Study Area have been calculated using the Statutory Biodiversity Metric (Defra, 2024). The metric baseline conditions are set out below in **Table 4.3**. The losses and post-development metric outputs are set out in **Table 4.4** and **Table 4.5**. All habitats in the baseline and post-development components of the biodiversity calculations are within the Proposed Development's red line boundary and therefore classed as on-site within the metric. The full version of the Statutory Biodiversity Metric used is set out in **Appendix 1**.

Table 4.3 Baseline habitats present within the Ecology Study Area

Broad Habitat	UK Habitat Classification	Habitat Area (ha)	Distinctiveness	Condition	Strategic Significance	Required Action	Biodiversity Units
Grassland	Modified grassland	2.459	Low (2)	Moderate (2)	Low Strategic Significance (1)	Same distinctiveness or better habitat required $\geq$	9.84
Grassland	Other neutral grassland	0.966	Medium (4)	Moderate (2)	Low Strategic Significance (1)	Same broad habitat or a higher distinctiveness habitat required ( $\geq$ )	7.73
Lakes	Ponds (non-priority habitat)	0.001	Medium (4)	Moderate (2)	Low Strategic Significance (1)	Same broad habitat or a higher distinctiveness habitat required ( $\geq$ )	0.01
Urban	Vacant or derelict land	0.218	Low (2)	Poor (1)	Low Strategic Significance (1)	Same distinctiveness or better habitat required $\geq$	0.44
Urban	Developed land; sealed surface	0.243	Very Low (0)	N–A - Other	Low Strategic Significance (1)	Compensation Not Required	0.00
Grassland	Modified grassland	0.132	Low (2)	Poor (1)	Low Strategic Significance (1)	Same distinctiveness or better habitat required $\geq$	0.26
Heathland and shrub	Mixed scrub	0.157	Medium (4)	Moderate (2)	Low Strategic Significance (1)	Same broad habitat or a higher distinctiveness habitat required ( $\geq$ )	1.26
Grassland	Other neutral grassland	0.421	Medium (4)	Moderate (2)	Low Strategic Significance (1)	Same broad habitat or a higher distinctiveness habitat required ( $\geq$ )	3.38
Heathland and shrub	Gorse scrub	0.26	Medium (4)	Moderate (2)	Low Strategic Significance (1)	Same broad habitat or a higher distinctiveness habitat required ( $\geq$ )	2.08
Heathland and shrub	Gorse scrub	0.064	Medium (4)	Moderate (2)	Low Strategic Significance (1)	Same broad habitat or a higher distinctiveness habitat required ( $\geq$ )	0.51
Wetland	Blanket bog	0.167	Very High (8)	Good	High strategic significance (1.15)	Bespoke compensation likely to be required ✖ <sup>1</sup>	Any Loss Unacceptable $\Delta$

<sup>1</sup> Blanket bog is classed as an irreplaceable habitat in the Statutory Biodiversity Metric as it is technically very difficult to recreate once destroyed. As such, the BNG requirement is disapplied for these habitats. Any losses or deterioration impacts to irreplaceable habitats cannot be calculated by the biodiversity metric. All irreplaceable habitats must be recorded and bespoke compensation agreed upon for any losses.