

**Spittal to Loch Buidhe to Beauly 400 kV  
OHL Connection  
Environmental Impact Assessment  
Volume 5 | Technical Appendix**

**Appendix 8.3 | Habitats Technical  
Report**

**July 2025**



## **VOLUME 5: APPENDIX 8.3- HABITATS TECHNICAL REPORT**

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# 1. INTRODUCTION

## 1.1 Scope of this Report

- 1.1.1 Environmental Resources Management Ltd (ERM) was commissioned by Scottish and Southern Electricity Networks Transmission (SEN Transmission) to undertake habitat surveys for the Spittal to Loch Buidhe to Beaully (SLBB) 400 Kilovolt (kV) Overhead Line (OHL) Connection, hereafter referred to as the 'Proposed Development').
- 1.1.2 The location where habitat surveys were undertaken (the 'Survey Area') covered 1,893.03 hectares (ha) and is illustrated with the mapped survey results in **Volume 3, Figure 8.2: UKHab Classifications**.
- 1.1.3 Habitats within the Survey Area were identified and mapped using the United Kingdom Habitat Classification (UKHab). Potential groundwater dependent terrestrial ecosystems (GWDTEs) up to 250 meters (m) from the Proposed Development, and habitats within designated sites were mapped using the National Vegetation Classification (NVC). Existing roads and tracks that would be used for access during construction or operation but do not require upgrading as part of the Proposed Development were not within the scope of the survey. Details of how the Survey Area was defined for each survey can be found within **Section 2.3**.
- 1.1.4 Surveys aimed to form a habitat baseline and highlight areas of greatest ecological interest (e.g., Annex 1 habitats; potential GWDTE's; and Scottish Biodiversity List (SBL) priority habitats), to inform the Environmental Impact Assessment (EIA) for the Proposed Development.
- 1.1.5 This Technical Appendix details the findings from the habitat surveys undertaken by ERM within the Survey Area for the Proposed Development.
- 1.1.6 Findings relating to fauna and protected species are not within the scope of this report and are presented in **Volume 5, Appendix 8.4: Protected Species Technical Report**.
- 1.1.7 A summary and interpretation of the baseline findings with respect to the Proposed Development (including potential impacts, embedded mitigation, specific mitigation, and recommendations) is outside the scope of this report and is presented in **Volume 2, Chapter 8: Ecology and Nature Conservation**.

## 1.2 Site Location and Description

- 1.2.1 The Proposed Development extends approximately 173 kilometres (km) north from the village of Beaully, located west of Inverness, to the hamlet of Spittal in Caithness, in the north of Scotland. The Proposed Development has been split into five sections along the route, listed below:
- Section A: Spittal to Brora;
  - Section B: Brora to Loch Buidhe;
  - Section C: Loch Buidhe to Dounie;
  - Section D: Dounie to Near Strathpeffer; and
  - Section E: Near Strathpeffer to Beaully.
- 1.2.2 A full description of the site location and section-specific information can be found in **Volume 2, Chapter 8: Ecology and Nature Conservation**. The location of the Proposed Development is shown in **Volume 3: Figure 3.1: The Proposed Development**, including all temporary and permanent infrastructure, including working corridors, as well as the proposed operational corridor (within woodland areas).

## 2. METHODS

### 2.1 Legislation, Policy and Guidance

- 2.1.1 A full list of legislation, policy, and guidance relevant to habitats can be found in **Volume 5, Appendix 8.1: Legislation Policy and Guidance**.

### 2.2 Desk Study

- 2.2.1 A desk-based study was undertaken to inform the field surveys by identifying designated sites, habitats, and species of interest within the Survey Area. The desk-based study used publicly available data sources including NatureScot, Scotland's Environment Webmap, and Ordnance Survey and aerial mapping, as well as data purchased from Highland Biological Recording Group (HBRG) and scientific literature. Findings of the desk study are presented in **Section 3.1**.
- 2.2.2 In addition to the desk study, relevant information provided through consultation with stakeholders and identified by the project team is presented in **Section 3.1**. Information relevant to the habitat baseline developed for this report has been incorporated into **Section 3.2**.

### 2.3 Field Surveys

- 2.3.1 All ecological field surveys have been undertaken in respect to the Proposed Development, where the Proposed Development encompasses a single Proposed Alignment plus ancillary infrastructure such as permanent and temporary access tracks, compounds and pulling locations. An appropriate buffer has been applied to this depending on the survey type, as detailed in the following sections.

#### *Survey Area*

- 2.3.2 A 700 m survey corridor was centred around the OHL, comprising a 100 m estimated limit of deviation (LoD) and 250 m buffer applied to both sides of the alignment. For new access tracks, a 100 m estimated LoD and 150 m buffer were applied on either side of the proposed centreline, i.e. a 300 m survey corridor. For existing tracks where significant upgrading was proposed, a 200 m survey corridor was applied.

#### *UKHab*

- 2.3.3 UKHab surveys were undertaken within the estimated LoD only as habitats out with the estimated LoD will not be directly impacted by the Proposed Development.

#### *NVC*

- 2.3.4 NVC surveys for GWDTEs were undertaken within the estimated LoD and extended out to 250 m in line with guidance<sup>1</sup>. Surveys were extended to this reach as it is considered possible that ground water impacts associated with development may affect habitats out to this distance. Within protected sites NVC surveys were undertaken within the estimated LoD and extended to 250 m where GWDTEs were likely present.
- 2.3.5 NVC surveys only recorded communities out to 250 m where there is a likelihood that they were groundwater dependent. Where no GWDTEs or likely GWDTEs were present, habitats were not mapped.

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<sup>1</sup> Scottish Environment Protection Agency (SEPA), 2014. Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Windfarm Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Available at: <https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf>.

### *UKHab Survey*

- 2.3.6 UKHab surveys were undertaken by ERM within the Survey Area, as described in paragraph 2.3.1. Surveys were based on the methods described in the UK Habitat Classification User Manual<sup>2</sup> and the Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey<sup>3</sup>, as extended for use in Environmental Assessment<sup>4</sup>. UKHab Version 2.0<sup>(5)</sup> was used to assign the alphanumeric UKHab habitat classification codes which are presented in this report. Mapped habitats are presented in **Volume 3, Figure 8.2: UKHab Classification**.

- 2.3.7 Plants and their frequency of occurrence were recorded using the subjective DAFOR<sup>6</sup> scale (dominant, abundant, frequent, occasional, or rare). The nomenclature of vascular plants occurring within the defined survey area follows Stace (2019)<sup>(7)</sup>.

### *Survey for Potential GWDTEs*

- 2.3.8 Habitats within the Survey Area with the potential to support GWDTEs were assessed using the NVC. The survey was based on the methods described in the JNCC National Vegetation Classification: Users' handbook<sup>8</sup>, with communities identified by eye. The sensitivity of each of the GWDTE receptors identified has been based on classifications provided within Scottish Environment Protection Agency (SEPA) Land Use Planning System (LUPS) – Guidance Note 31<sup>(9)</sup>. The SEPA classification is modified from the United Kingdom Technical Advisory Group (UKTAG) list of NVC communities<sup>10</sup>, which provides the full list for all communities. This system scores each NVC community by its dependency on groundwater, i.e. 3 = low, 2 = moderate, or 1 = high.

- 2.3.9 Mapped findings are presented in **Volume 3, Figure 8.5: GWDTE**.

- 2.3.10 Further assessment of potential GWDTEs is beyond the scope of this report. However, further assessment with regard to topography and hydro-ecological context is presented in **Volume 2, Chapter 10: Water Environment**.

### *Notable Flora*

- 2.3.11 Any observations of flora of note or with specific ecological interest, including invasive non-native species, were target noted and recorded. Target notes are presented on **Volume 3, Figure 8.4 Protected Species**. A list of invasive non-native flora species is presented in **Volume 5, Appendix 8.6: Species List**.

2 Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J. (2020) UK Habitat Classification User Manual, Version 1.1. UK Habitat Classification Working Group, Stockport. Available at: <http://ecountability.co.uk/ukhabworkinggroup-ukhab>.

3 Joint Nature Conservation Committee (2010) Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit. With minor corrections addressed in 2016. JNCC, Peterborough. Available at: <https://hub.jncc.gov.uk/assets/9578d07b-e018-4c66-9c1b-47110f14df2a>

4 Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment, Spon, London.

5 UKHab Ltd (2023) UK Habitat Classification 2.0. UKHab Ltd, Stockport. Available at: <https://www.ukhab.org>

6 The DAFOR scale is used for semi-quantitative sampling, to provide a quick estimate of the relative abundance of species (generally plants) in each area. Abundance (number of individuals) and cover (area coverage) are often used interchangeably in this type of surveying, although in fact they may have very different meanings.

7 Stace, C. (2019). New Flora of the British Isles. 4th edition. UK. Cambridge University Press

8 Joint Nature Conservation Committee (2006) National Vegetation Classification: Users' handbook. JNCC, Peterborough. Available at: <https://hub.jncc.gov.uk/assets/a407ebfc-2859-49cf-9710-1bde9c8e28c7>

9 Scottish Environment Protection Agency (SEPA). (2014) Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Windfarm Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Available at: <https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf>.

10 UK Technical Advisory Group (UK TAG) on the Water Framework Directive (WFD), (2004). Guidance on the identification and risk assessment of groundwater dependent terrestrial ecosystems. UK TAG. Available at: <https://www.wfd.uk.org/resources%20/risk-assessment-groundwater-dependent-terrestrial-ecosystems>.

## 2.4 Survey Personal and Timing

- 2.4.1 Habitat surveys were carried out by suitably qualified and experienced ecologists from ERM (Callum Gilhooley, Aaron Martin, Heather Green, Sallie Turnbull, Aaron Nugent, Robert Potter, Amelia Hodnett, Monica Wood, Christina Pullan), and their sub-consultants Scotia Ecology (Theo Loizou), Direct Ecology (Victoria Curley, Emma Robson, Kirsty Duncan, Beccy Osborn), and Atmos Consulting (Emilie Michael, David Braidwood, Cathel de Lima Hutchinson, James Wilson, Jonathan Easton).
- 2.4.2 Surveys within designated sites were largely undertaken by the two most experienced surveyors (Theo Loizou and Robert Potter), with limited supplemental survey by experienced members of the ERM ecology team.
- 2.4.3 Most of the survey was carried out between April and October 2024. Limited additional survey was undertaken in January and February 2025 to assess new areas resulting from design updates, including consideration of the access requirements for the construction and operation of the Proposed Development.

## 2.5 Survey Limitations

- 2.5.1 Due to the length of the Proposed Development, survey limitations have been generalised by survey type across the Survey Area. However, no individual features or habitats within the Survey Area were identified as having unique survey limitations in addition to those described in the following sections.
- 2.5.2 Due to the large Survey Area, the habitat surveys were necessarily carried out over several months and seasons. To minimise the effect of seasonality on survey findings, habitat surveys in protected areas were targeted during the optimal survey period where access and logistics allowed. This is not considered to be a significant limitation.
- 2.5.3 Survey of some areas outside of the optimal flowering period may have limited the number of plant species identified. However, use of experienced surveyors and revisiting key areas identified as being particularly sensitive or with potential to support priority species (e.g. marsh saxifrage). This is not considered to be a significant limitation.
- 2.5.4 Shooting and fishing seasons restricted access to some estates during August and October 2024. In these circumstances, coordination with landowners and land managers ensured that surveys were arranged for a different time. Therefore, this is not considered to be a significant limitation to the survey.
- 2.5.5 Small sections of several watercourses throughout the Survey Area could not be safely accessed and were not surveyed fully due to one or a combination of features including deep gorges / ravines, steep banks, significant erosion, and dense or impassable vegetation cover. This is not considered to pose a significant limitation.
- 2.5.6 Due to safety concerns areas such as dense stands of coniferous woodland plantations, areas of wind-blown trees, wet and boggy ground conditions, active work sites, and areas of tall vegetation, surveying was occasionally unsafe and in-depth surveys were not possible. In these circumstances, surveys were restricted. While all habitats were assessed, some areas were not surveyed to their full extent and findings were interpreted through observations made from positions of safe vantage within the Survey Area, review of aerial photography, and observation and inference from surveyed habitats on adjacent areas of land. These observations, in combination with data from the desk study, enabled a good characterisation to be made of habitats and likely species present. Therefore, this is not considered to be a significant limitation.
- 2.5.7 Survey coverage and access were generally good across the Survey Area and these limitations, individually and in combination, are not considered to present a significant limitation to the survey. As such, the habitat survey was carried out in accordance with good practice guidelines, and the findings presented in this Technical Appendix are a fair characterisation of the habitats and flora occurring within the Survey Area.

### 3. RESULTS

#### 3.1 Introduction

3.1.1 The findings of the desk-based study and habitat surveys are presented in the following sections. Mapped results of the habitat survey are presented in the following figures:

- **Volume 3, Figure 8.2: UKHab Classification;**
- **Volume 3, Figure 8.3: UKHab Classification within Designated Sites;** and
- **Volume 3, Figure 8.5: GWDTE.**

3.1.2 A summary and interpretation of these findings with respect to the Proposed Development, including potential impacts, embedded mitigation, specific mitigation is presented in **Volume 2, Chapter 8: Ecology and Nature Conservation**.

#### 3.2 Desk-Based Study Results

##### *Designated Sites*

3.2.1 A summary of the desk-based study findings for sites designated for habitat or botanical interest relevant to each section is presented in **Table 1**.

3.2.2 Further detail on designated habitats or botanical features of interest within designated sites is presented as part of the field survey findings in **Section 3.2**.

##### *Information from Stakeholders*

3.2.3 Residents in Section C engaged with the project team and met with surveyors, providing accounts for habitats and protected species from their personal observations<sup>11</sup>. Relevant information has been included in the preparation of this report.

3.2.4 Residents in Section E engaged with the project team, providing accounts for habitats and protected species from their personal observations<sup>12</sup> and a report summarising surveys undertaken in relation to the Proposed Development<sup>13</sup>.

3.2.5 Findings relating to fauna or protected species are not within the scope of this report and is presented in **Volume 5, Appendix 8.4: Protected Species Technical Report**.

**Table 1: Sites Designated for Habitat or Botanical Interest**

Designation	Site Name	Designated Feature(s)	Designated Area (ha)	Section				
				A	B	C	D	E
Special Area of Conservation (SAC)	Caithness and Sutherland Peatlands	Designated for clear-water lakes or lochs with aquatic vegetation; acid peat-stained lakes and ponds; wet heathland with cross-leaved heath; blanket bog; very wet mire; depressions on peat substrates; and, marsh saxifrage.	143,568.71	✓				

<sup>11</sup> Smith, S., and Smith, D. (2024) Personal communication.

<sup>12</sup> Clegg, R. (2024) Personal communication.

<sup>13</sup> Clegg, R. (2023) *A survey of selected habitats including Ancient Woodlands within the area designated as Aultgowrie, to highlight the irrevocable damage and loss that would result from the proposed overhead line routes E1 and E1.1*. Unpublished, Personal communication with SSE.



Designation	Site Name	Designated Feature(s)	Designated Area (ha)	Section				
				A	B	C	D	E
Ramsar	Caithness and Sutherland Peatlands	<b>Criterion 1</b> - Blanket Bog; Mire; and oligotrophic lochs in addition to dystrophic lochs, lochans & pools, and wet heath. <b>Criterion 2</b> - Sphagnum lindbergii and S. majus. (moss species); and, Bog orchid.	143,571.28	✓				
World Heritage Sites Scotland	Flow Country	Inscribed under criterion ix as an outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals. The attributes designated under this criterion are:  most extensive near continuous example of natural, actively accumulating, blanket bog ecosystem found globally.  climatic, topographic gradients and geological diversity: bog macroform diversity.  archive it stores (4th dimension).  natural laboratory – ongoing scientific and educational use.  carbon sequestration and storage.  water filtration and the impact on the water quality of associated riverine habitats.	187,023.57	✓				
Site of Special Scientific Interest (SSSI)	Dunbeath Water	Designated for its national significance woodland habitat (Upland birch woodland).	151.84	✓				
SSSI	Langwell Water	Designated for its national significance woodland habitat (Upland birch woodland).	285.27	✓				
SSSI	Shielton Peatlands	The site is designated for the nationally important blanket bog habitat	5,631.97	✓				
SSSI	Berriedale Water	The site is designated for its nationally important upland birch woodland habitat.	215.54	✓				
SSSI	Strathfleet	The site has been designated for its nationally important oak woodland and range of rare plant species. Of particular note is a population of the nationally rare rock cinquefoil <i>Potentilla rupestris</i> , known to exist at only two sites in Scotland. Other scarce plant species that also contribute to this assemblage include rock whitebeam <i>Sorbus rupicola</i> and pyramidal bugle <i>Ajuga pyramidalis</i> .	133.87		✓			
SSSI	Kyle of Sutherland Marshes	The site has been notified for the nationally important: <b>Floodplain plant communities:</b> The main species include bottle sedge <i>Carex rostrata</i> , common sedge <i>C. nigra</i> , marsh cinquefoil <i>Potentilla palustris</i> , water horsetail <i>Equisetum fluviatile</i> and marsh pennywort <i>Hydrocotyle</i>	402.76			✓		



Designation	Site Name	Designated Feature(s)	Designated Area (ha)	Section				
				A	B	C	D	E
		<p><i>vulgaris</i>. Some of the areas of fen form quaking mires with transitions to open water. The wettest areas grade into stands of water sedge <i>Carex aquatilis</i> and estuarine sedge <i>Carex recta</i>.</p> <p><b>Woodland;</b> and,</p> <p><b>Vascular plant assemblage (flowering plants):</b></p> <p>The site supports a nationally important assemblage of plant species. Of particular interest is a large population of the nationally rare estuarine sedge <i>Carex recta</i>. Two scarce species, bog orchid <i>Hammarbya paludosa</i> and pillwort <i>Pilularia globulifera</i>, also grow on this site.</p>						
SSSI	Allt nan Caorach	Designated for upland birch woodland and upland habitat of subalpine dry heath.	57.65				✓	
Ancient Woodland Inventory (AWI)	N/A	<p>In Scotland, Ancient Woodland is defined as land that is currently wooded and has been continually wooded, at least since 1750.</p> <p>There is no legislation specifically protecting Ancient Woodland; however, Scottish Planning Policy on Ancient Woodland considers ancient semi-natural woodland to be an irreplaceable resource that should be protected from adverse impacts resulting from development.</p> <p>The Ancient Woodland Inventory (AWI) is a provisional guide to the location of Ancient Woodland. It contains three main categories of woodland, all of which are likely to be of value for their biodiversity and cultural value by virtue of their antiquity:</p> <p><b>Category 1a and 2a:</b> Ancient (of Semi Natural Origin) (ASNO)</p> <p><b>Category 1b and 2b:</b> Long-established woodlands of plantation origin (LEPO),</p> <p><b>Category 3:</b> Other woodlands on 'Roy' woodland sites,</p>	85.29	✓	✓	✓	✓	✓

### 3.3 Field Survey Results

- 3.3.1 The following sections present the findings of the habitat field surveys undertaken for the SLBB project. Findings are presented individually for each section.
- 3.3.2 Habitats are presented in using the UKHab classification. The ordering of habitats follows the hierarchy of UKHab and does not correspond to relative ecological importance.
- 3.3.3 Habitats with the potential to support GWDTE are presented using the NVC. The order of GWDTEs follows the hierarchy of the NVC and does not correspond to relative ecological importance. NVC names have been updated to reflect current botanical nomenclature.

## Section A

- 3.3.4 Habitats recorded within the Survey Area are summarised in **Table 2**. A description of these UKHab habitats is presented in paragraphs 3.2.6 to 3.2.25.
- 3.3.5 Designated sites, the total area of the designation, and the area of habitats occurring within the Survey Area are presented in **Table 3**. Habitat areas within Ancient Woodland Inventory (AWI) sites are presented in **Table 4**. NVC communities with the potential to support GWDTE that were identified in Section A are presented in **Table 5**.

**Table 2: UKHab Habitats Present in Section A**

Note: Conservation Status: (1) Annex I habitat, (2) SBL habitat, (3) HLBAP habitat

Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Grassland	g1a6 - Other lowland dry acid grassland	(2), (3)	0.21
	g1b - Upland acid grassland	(2), (3)	51.48
	g1b6 - Other upland acid grassland	(2), (3)	8.00
	g1c - Bracken		12.19
	g3c - Other neutral grassland		7.14
	g3c6 - Lolium-Cynosurus neutral grassland		0.67
	g3c7 - Deschampsia neutral grassland		13.16
	g3c8 - Holcus-Juncus neutral grassland		33.15
	g4 - Modified grassland		9.76
Woodland	w1d5 - Alder woodland on floodplains (H91E0)	(1), (2), (3)	0.32
	w1e - Upland birchwoods	(1), (2), (3)	7.19
	w1f - Lowland mixed deciduous woodland	(2), (3)	0.00
	w1g - Other broadleaved woodland		2.53
	w1h - Other woodland; mixed		4.17
	w1h5 - Other woodland; mixed; mainly broadleaved	(2), (3)	2.55
	w1h6 - Other woodland; mixed; mainly conifer		2.90
	w2b - Other Scot's Pine woodland	(2), (3)	0.38
	w2c - Other coniferous woodland		33.59
Heathland and Shrub	h1b - Upland heathland	(2), (3)	21.25
	h1b5 - Dry heaths; upland (H4030)	(1), (2), (3)	89.48
	h1b6 - Wet heathland with cross-leaved heath; upland (H4010)	(1), (2), (3)	13.05
	h3e - Gorse scrub		1.83
	h3h - Mixed scrub		0.65
	h3j - Willow scrub		0.01
Wetland	f1a - Blanket bog	(1), (2), (3)	205.00
	f1a5 - Blanket bog (H7130)	(1), (2), (3)	171.02
	f1a6 - Degraded blanket bog	(1), (2), (3)	62.90
	f2b - Purple moor-grass and rush pastures	(1), (2)	7.65
	f2c - Upland flushes, fens and swamps	(1), (2)	5.87
Cropland	c1a - Arable field margins	(2), (3)	0.05
	c1d - Non-cereal crops		0.04
Urban	u1b - Developed land; sealed surface		0.12
	u1b5 - Buildings		0.00
	u1c - Artificial unvegetated, unsealed surface		0.01
	u1e - Built linear features		1.30

Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Sparsely Vegetated Land	s1a - Inland rock outcrop and scree habitats	(1), (2), (3)	0.17
Rivers and Lakes	r - Rivers and lakes	(2), (3)	0.31
	r2 - Rivers and streams	(1), (2), (3)	0.46
	r2a - Rivers (priority habitat)	(1), (2), (3)	0.85

**Table 3: Habitats Within Designated Sites in Section A**

Designation	Site Name	UK Habitat	Area (ha)
<b>SAC</b>	Caithness and Sutherland Peatlands	f1a5 - Blanket bog (H7130)	25.15
		f1a6 - Degraded blanket bog	4.46
		f2b - Purple moor-grass and rush pastures	0.06
		g1b - Upland acid grassland	0.75
		g3c8 - Holcus-Juncus neutral grassland	2.56
	Dunbeath Water	f1a5 - Blanket bog (H7130)	0.28
		g1b - Upland acid grassland	0.54
		g1c - Bracken	0.95
		g3c8 - Holcus-Juncus neutral grassland	0.33
		h1b5 - Dry heaths; upland (H4030)	0.26
		r2 - Rivers and streams	0.17
		u1e - Built linear features	0.04
		w1e - Upland birchwoods	0.05
<b>Ramsar Site</b>	Caithness and Sutherland Peatlands	f1a5 - Blanket bog (H7130)	25.15
		f1a6 - Degraded blanket bog	4.46
		f2b - Purple moor-grass and rush pastures	0.06
		g1b - Upland acid grassland	0.75
		g3c8 - Holcus-Juncus neutral grassland	2.56
<b>WHS</b>	Flow Country	f1a - Blanket bog	13.76
		f1a5 - Blanket bog (H7130)	33.23
		f1a6 - Degraded blanket bog	3.81
		f2b - Purple moor-grass and rush pastures	1.69
		f2c - Upland flushes, fens and swamps	0.04
		g1b - Upland acid grassland	1.65
		g1b6 - Other upland acid grassland	2.08
		g1c - Bracken	0.58
		g3c8 - Holcus-Juncus neutral grassland	2.54
		h1b - Upland heathland	0.04
		h1b5 - Dry heaths; upland (H4030)	8.93
		h1b6 - Wet heathland with cross-leaved heath; upland (H4010)	1.84
		w2c - Other coniferous woodland	0.81
<b>SSSI</b>	Berriedale Water	g1b - Upland acid grassland	0.22
		g1c - Bracken	1.63
		h1b - Upland heathland	0.00
		r2a - Rivers (priority habitat)	0.05
		s1a - Inland rock outcrop and scree habitats	0.08
		w1d5 - Alder woodland on floodplains (H91E0)	0.16
		w1e - Upland birchwoods	1.99
		w2b - Other Scot's Pine woodland	0.28

Designation	Site Name	UK Habitat	Area (ha)
	Langwell Water	g1b - Upland acid grassland	0.11
		g1c - Bracken	0.45
		g3c8 - Holcus-Juncus neutral grassland	0.01
		h1b - Upland heathland	0.41
		h3h - Mixed scrub	0.60
		r2a - Rivers (priority habitat)	0.11
		w1g - Other broadleaved woodland	1.24
	Shielton Peatlands	f1a5 - Blanket bog (H7130)	25.15
		f1a6 - Degraded blanket bog	4.46
		f2b - Purple moor-grass and rush pastures	0.06
		g1b - Upland acid grassland	0.75
		g3c8 - Holcus-Juncus neutral grassland	2.56

**Table 4: Habitats within AWI Sites in Section A**

UK Habitat	Area of Habitat in AWI Site by AWI Category (ha)			
	Category 1a, 2a (ASNO)	Category 1b, 2b (LEPO)	Category 3 ('Roy' Woodlands)	TOTAL
f1a5 - Blanket bog (H7130)	0.05			0.05
g1b - Upland acid grassland	0.28			0.28
g1c - Bracken	0.30	0.00		0.31
g4 - Modified grassland	0.01			0.01
h1b - Upland heathland	0.01			0.01
h3h - Mixed scrub	0.04			0.04
w1d5 - Alder woodland on floodplains (H91E0)	0.05			0.05
w1e - Upland birchwoods	1.95			1.95
w1g - Other broadleaved woodland	1.20			1.20
w1h6 - Other woodland; mixed; mainly conifer		0.01		0.01
w2b - Other Scot's Pine woodland	0.11			0.11
<b>TOTAL</b>	<b>3.99</b>	<b>0.01</b>		<b>4.00</b>

**Table 5: Potential GWDTE in Section A**

NVC Code	NVC Name	Rating
M16	<i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath	High
M21	<i>Narthecium ossifragum</i> – <i>Sphagnum papillosum</i> valley mire	High
M23	<i>Juncus effusus/acuteiflorus</i> – <i>Galium palustre</i> rush–pasture	High
M32	<i>Philonotis fontana</i> – <i>Saxifraga stellaris</i> spring	High
M6	<i>Carex echinata</i> – <i>Sphagnum recurvum</i> mire	High
M15	<i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath	Moderate
M25	<i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	Moderate
M26	<i>Molinia caerulea</i> – <i>Crepis paludosa</i> mire	Moderate
M28	<i>Iris Pseudacorus</i> – <i>Filipendula ulmaria</i> mire	Moderate
MG10	<i>Holcus lanatus</i> – <i>Juncus effusus</i> rush–pasture	Moderate
MG9	<i>Holcus lanatus</i> – <i>Deschampsia cespitosa</i> grassland	Moderate
S2	<i>Cladium mariscus</i> swamp and sedge beds	Moderate

NVC Code	NVC Name	Rating
S27	<i>Carex rostrata</i> – <i>Potentilla palustris</i> tall-herb fen	Moderate
U6	<i>Juncus squarrosus</i> – <i>Festuca ovina</i> grassland	Moderate

#### *Description of UKHab Habitats in Section A*

##### Grassland

###### Acid Grassland

- 3.3.6 Acid grassland areas were scattered throughout the north, centre and south of Section A and were largely represented by g1b Upland acid grassland habitats that varied in size. Small areas of g1a6 Other lowland dry acid grassland were recorded in the south of Section A, between Marrel and the south of the survey area.

- 3.3.7 Substantial areas of scattered g1c Bracken habitats were also present in the centre and south of the section.

###### Neutral Grassland

- 3.3.8 Neutral grassland areas were scattered throughout the north and centre of Section A, with limited areas also recorded in the south of the section. Most neutral grassland habitats were represented by g3c8 *Holcus-juncus* neutral grassland that occurred throughout the section. Areas of g3c Other neutral grassland were largely concentrated in the north of the site, with small areas also occurring in the centre and south.

- 3.3.9 Two small areas of g3c6 *Lolium-Cynosurus* neutral grassland were recorded in Section A, one in the centre of the section by Ramsraigs and one in the north of the section adjacent to the Burn of Tacher.

###### *Modified Grassland*

- 3.3.10 Modified grassland only a small proportion to habitats within Section A. The very north of the section by Achalone contained g4 Modified grassland fields. In the centre of the section, areas of g4 Modified grassland occurred to the north east of Houstry and west of Badnagie. It was also present as small areas in the south, between Berriedale water and East Clyne.

##### Woodland and Forest

###### Broadleaved and Mixed Woodland

- 3.3.11 Broadleaved and mixed woodland made up only a small proportion of habitats within Section A. Of this, w1h Other woodland; mixed was the most frequently recorded, occurring in the north of the section by Achalone as areas of plantation woodland, and in the centre as plantation woodland by Langwell water. It also occurred in the south of the section as Glen Loth, a native woodland creation scheme with EU funding. This planted woodland consisted of young trees growing on heathland and bog.

- 3.3.12 The habitat w1e Upland birchwoods, consistently occurred along watercourses throughout the section. In the north of the section, this habitat was recorded along Dunbeath Water, in the centre it was recorded along Berriedale Water and Langwell Water, and in the south, it was recorded along the River Helmsdale and Loth Burn.

- 3.3.13 Areas of w1g Other broadleaved woodland were scattered across the north and centre of the section. Small areas were present in the north along Halsary Burn. In the centre of Section A, small areas of semi-natural w1g Other broadleaved woodland with veteran trees occurred along Langwell Water.

- 3.3.14 One area of w1d5 Alder woodland on floodplains (H91E0) was recorded in Section A along the northeast bank of Berriedale Water. This is an Annex 1 habitat that contained both ancient and veteran trees.

#### Coniferous Woodland

- 3.3.15 Coniferous woodland in Section A comprised w2c Other coniferous woodland, most of which was plantation woodland. In the north of the section, areas of plantation occurred by Loch of Toftingall and the Burn of Badachraskach. Coniferous woodland habitats also occurred extensively in the centre and south of the section between Berriedale and Ousdale. Some small areas of plantation coniferous woodland were recorded near to Kilourman Hill.

#### Heathland and Shrub

##### Heathland

- 3.3.16 Heathland made up a substantial proportion of habitats recorded within Section A, with large areas occurring throughout the section. Most heathland was represented by h1b Upland heathland, with areas of the Annex 1 habitats h1b5 Dry heaths; upland (H4030) and h1b6 Wet heathland with cross-leaved heath; upland (H4010), also present. Heathland habitats were largely concentrated in the centre and south of the section, occurring as areas of variable size, often in mosaic with other heathland habitats and blanket bog.
- 3.3.17 Small areas of Annex 1 habitat h1a7 Wet heathland with cross-leaved heath; lowland (H4010) were recorded in the north of Section A by Harpsdale, in the centre by Smerral and in the south by Lothberg.

##### Scrub

- 3.3.18 Areas of scrub were recorded throughout Section A, mostly as small, scattered areas. In the centre of the section, just west of Berriedale, a cluster of small h3e Gorse scrub habitats were noted. This habitat type was also recorded in the south of the section, present as two small areas located between the A9 and coniferous plantation woodland at Ousdale and along a roadside near to Helmsdale. To the south of Langwell Water, an area of h3h Mixed scrub was present.

#### Wetland

##### Bog

- 3.3.19 Bog habitats were recorded extensively throughout Section A, contributing to almost half of the entire section's area. Large areas of f1a Blanket bog were noted across Section A, with some of these grazed or showing evidence of cut-over peat. Areas of the Annex 1 habitat, f1a5 Blanket bog (H7130), were less abundant but also recorded throughout the section. Evidence of grazing and cut-over peat were limited in this habitat type. Areas of f1a6 Degraded blanket bog were recorded across the section, with areas in the north of Section A associated with felled plantation woodland. Evidence of sheep grazing and cut-over peat were noted for this habitat.

##### Fen, Marsh, and Swamp

- 3.3.20 Fen, marsh and swamp habitats were present throughout Section A but were largely concentrated in the south of the section. In the north of the section, areas were recorded along the banks of Halsary Burn and Allt Caol, largely consisting of f2b Purple moor-grass and rush pastures with small areas of f2c Upland flushes, fens and swamps also present. A small area of f2b Purple moor-grass and rush pastures was also recorded between the Burn of Clashcrebie and Loch Rangag. In the centre of the section near to Badnagie, small areas of f2b Purple moor-grass and rush pastures were recorded within larger areas of blanket bog and upland heathland. In the south of the section, both f2b Purple moor-grass and rush pastures and f2c Upland flushes, fens and swamps were scattered throughout. These were often located along watercourses or ditches.

#### Cropland

- 3.3.21 Cropland within Section A was very limited to one area of c1d Non-cereal crops, east of Harpsdale in the north.

### Urban

- 3.3.22 Urban habitats were present throughout Section A. The most frequently recorded urban habitat was u1e Built linear features. This consisted of all roads and tracks that crossed the survey area, including the A9, A897, B870 and Achorn Road. Areas of u1b Developed land; sealed surface were also recorded across the section, some further delineated to u1b5 Buildings.

### Sparsely Vegetated Land

- 3.3.23 One area of Sparsely vegetated land was recorded in Section A as s1a Inland rock outcrop and scree habitats. This was located along the banks of Berriedale Water in the centre of the section.

### Rivers and Lakes

#### Standing Open Water

- 3.3.24 Standing open water habitats were limited within Section to two small r1c Oligotrophic and dystrophic standing lakes in the south of the section near to Loth Burn. These were located within blanket bog habitat.

#### Rivers and Streams

- 3.3.25 Rivers and streams habitats were present in low concentration throughout Section A. In the north of the section, the named watercourses Allt na Craoibhe and the Burn of Braehungie occur. In the centre, Dunbeath Water, Allt Learanaich and the Burn of Houstry are present. Also present in the centre of the section was Achorn Burn, and in the south, Sletdale Burn, River Helmsdale, Langwell Water and Berriedale Water; all recorded as r2a Rivers (priority habitat) habitats.

### *Section B*

- 3.3.26 Habitats recorded within the Survey Area are summarised in **Table 6**. A description of these UKHab habitats is presented in paragraphs 3.3.28 to 3.3.44.
- 3.3.27 Designated sites, the total area of the designation, and the area of habitats occurring within the Survey Area are presented in **Table 7**. Areas of habitat occurring with Ancient Woodland Inventory (AWI) sites are presented in **Table 8**. NVC communities with the potential to support GWDTE that were identified in Section B are presented **Table 9**.

**Table 6: UKHab Habitats Present in Section B**

Note: Conservation Status: (1) Annex I habitat, (2) SBL habitat, (3) HLBAP habitat

Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Grassland	g1b - Upland acid grassland	(2), (3)	9.38
	g1b6 - Other upland acid grassland	(2), (3)	5.37
	g1c - Bracken		7.04
	g3c - Other neutral grassland		3.53
	g3c5 - Arrhenatherum neutral grassland		0.03
	g3c6 - Lolium-Cynosurus neutral grassland		1.67
	g3c7 - Deschampsia neutral grassland		0.12
	g3c8 - Holcus-Juncus neutral grassland		2.07
	g4 - Modified grassland		7.76
Woodland	w1d - Wet woodland	(1), (2), (3)	0.50
	w1e - Upland birchwoods	(1), (2), (3)	5.29
	w1g - Other broadleaved woodland		2.59
	w1h5 - Other woodland; mixed; mainly broadleaved	(2), (3)	0.18



Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
	w2b - Other Scot's Pine woodland	(2), (3)	3.14
	w2c - Other coniferous woodland		83.47
Heathland and Shrub	h1b - Upland heathland	(2), (3)	41.82
	h1b5 - Dry heaths; upland (H4030)	(1), (2), (3)	22.43
	h1b6 - Wet heathland with cross-leaved heath; upland (H4010)	(1), (2), (3)	33.10
	h3e - Gorse scrub		0.22
Wetland	f1a - Blanket bog	(1), (2), (3)	72.34
	f1a5 - Blanket bog (H7130)	(1), (2), (3)	8.22
	f1a6 - Degraded blanket bog	(1), (2), (3)	55.94
	f2b - Purple moor-grass and rush pastures	(1), (2)	1.21
	f2c - Upland flushes, fens and swamps	(1), (2)	1.45
Urban	u1b - Developed land; sealed surface		0.00
	u1b6 - Other developed land		0.11
	u1c - Artificial unvegetated, unsealed surface		0.53
	u1e - Built linear features		0.94
Rivers and Lakes	r1g - Other standing water	(2), (3)	0.00
	r2a - Rivers (priority habitat)	(1), (2), (3)	2.57

**Table 7: Habitats Within Designated Sites in Section B**

Designation	Site Name	UK Habitat	Area (ha)
SSSI	Strathfleet	f1a5 - Blanket bog (H7130)	0.07
		g1b - Upland acid grassland	0.19
		g1c - Bracken	0.65
		h1b - Upland heathland	3.09
		h3e - Gorse scrub	0.21
		u1e - Built linear features	0.01

**Table 8: Habitats within AWI Sites in Section B**

UK Habitat	Area of Habitat in AWI Site by AWI Category (ha)			
	Category 1a, 2a (ASNO)	Category 1b, 2b (LEPO)	Category 3 ('Roy' Woodlands)	TOTAL
f1a6 - Degraded blanket bog	0.09			0.09
g1c - Bracken	0.02			0.02
u1e - Built linear features	0.05			0.05
w1e - Upland birchwoods	0.72			0.72
<b>TOTAL</b>	<b>0.87</b>			<b>0.87</b>

**Table 9: Potential GWDTE in Section B**

NVC Code	NVC Community Name	GWDTE Rating
M10	<i>Carex dioica</i> – <i>Pinguicula vulgaris</i> mire	High
M15	<i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath	Moderate
M23	<i>Juncus effusus/acuteiflorus</i> – <i>Galium palustre</i> rush–pasture	High
M25	<i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	Moderate
M27	<i>Filipendula ulmaria</i> – <i>Angelica sylvestris</i> mire	Moderate
M28	<i>Iris Pseudacorus</i> – <i>Filipendula ulmaria</i> mire	Moderate
M6	<i>Carex echinata</i> – <i>Sphagnum recurvum</i> mire	High

NVC Code	NVC Community Name	GWDTE Rating
MG10	<i>Holcus lanatus</i> – <i>Juncus effusus</i> rush–pasture	Moderate
MG9	<i>Holcus lanatus</i> – <i>Deschampsia cespitosa</i> grassland	Moderate
S27	<i>Carex rostrata</i> – <i>Potentilla palustris</i> tall–herb fen	Moderate
W3	<i>Salix pentandra</i> – <i>Carex rostrata</i> woodland	Moderate
W7	<i>Alnus glutinosa</i> – <i>Fraxinus excelsior</i> – <i>Lysimachia nemorum</i> woodland	Moderate

#### Description of UKHab Habitats in Section B

##### Grassland

##### Acid Grassland

- 3.3.28 Acid grassland areas were present in the north, centre and south of Section B. Small areas of g1b Upland acid grassland and g1b6 Other upland acid grassland were scattered throughout the section. Larger areas of g1b Upland acid grassland were also recorded in the centre of the section by Allt Bad a' Chrasgaidh and in the south by Abhainn an t-Stratha Chàrnaig. Many of these habitats contained scattered bracken, with some also containing scattered rushes and dwarf shrubs. Areas of g1c Bracken were recorded across Section B, frequently along watercourses.

##### Neutral Grassland

- 3.3.29 Neutral grassland habitats were present throughout Section B. In the north of the section, g3c Other neutral grassland areas were recorded on both sides of Allt nam Ban. In the centre, areas of g3c8 *Holcus-Juncus* neutral grassland occurred within a larger mosaic of blanket bog, heathland and upland acid grassland habitats. The River Fleet was surrounded by an extensive area of neutral grassland, largely comprised of g3c Other neutral grassland and g3c8 *Holcus-Juncus* neutral grassland. Along the eastern bank of the River Fleet was a stretch of g3c5 *Arrhenatherum* neutral grassland. Also present next to the river were isolated areas of mown grassland comprising g3c6 *Lolium-Cynosurus* neutral grassland and g3c7 *Deschampsia* neutral grassland. In the south of Section B, an area of g3c8 *Holcus-Juncus* neutral grassland was recorded within a proposed access track to the south of the River Fleet. Areas of g3c8 *Holcus-Juncus* neutral grassland were noted on the banks of Loch Buidhe, and within the rides of plantation coniferous woodland next to the existing Loch Buidhe Substation.

##### Modified Grassland

- 3.3.30 Modified grassland habitats were largely concentrated in the centre of Section B. One area was recorded in the north, on the western bank of Allt nam Ban. The remaining area was in the centre of the section, between the River Fleet and the A839. No g4 Modified grassland was recorded in the south of Section B.

##### Woodland and Forest

##### Broadleaved and Mixed Woodland

- 3.3.31 Broadleaved and mixed woodland habitats were recorded in the north, centre and south of Section B. In the north of the section, areas of w1g Other broadleaved woodland and w1e Upland birchwoods were present along Clynmilton Burn. One small area of w1f7 Other lowland mixed deciduous woodland was also recorded in the north of the section, between the Proposed Alignment and Victoria Road. To the east of Allt nam Ban, w1e Upland birchwoods was the dominant broadleaved and mix woodland habitat type. To the west of the watercourse, areas of both plantation w1h6 Other woodland; mixed; mainly conifer and w1g Other broadleaved woodland were recorded.

- 3.3.32 In the centre of the section, plantation stands of w1g Other broadleaved woodland and w1h5 Other woodland; mixed; mainly broadleaved were present. An area of w1g Other broadleaved woodland stretched along the banks of Allt Bad a' Chrsgaidhe. The same habitat type was found near Morvich Rogart and the River Fleet, alongside areas of w1d Wet woodland. The latter was noted as a semi-natural woodland with mature, veteran and ancient trees.
- 3.3.33 In the south of Section B, and to the south of the River Fleet, was a small area with w1f Lowland mixed deciduous woodland, w1d Wet woodland and w1h5 Other woodland; mixed; mainly broadleaved habitats. Along the banks of Allt na h-Innse Aonair and to the south of Abhainn an t-Startha Charnaig were areas of w1g Other broadleaved woodland. Both plantation and self-set stands of w1h6 Other woodland; mixed; mainly conifer, along with a small area of w1h Other woodland; mixed, were recorded just east of Loch Buidhe Substation.

#### Coniferous Woodland

- 3.3.34 Coniferous woodland is present as large plantation woodland areas within Section B, largely concentrated in the south of the section. In the north, self-set w2c Other coniferous woodland was recorded near to Victoria Road and Clynmilton Burn. Plantation w2b Other Scot's Pine woodland was present to the west of Carrol Burn. In the centre of the section, large stands of plantation w2c Other coniferous woodland were recorded south of Loch Horn. The remaining coniferous woodland was located in the south of the section, with extensive plantation w2c Other coniferous woodland stretching between Abhainn an t-Startha Charnaig and Loch Buidhe Substation.

#### Heathland and Shrub

##### Heathland

- 3.3.35 Heathland habitats were present in extensive areas throughout Section B, largely concentrated in the north and centre of the section. All heathland habitats in Section B were classified as h1b Upland heathland habitats, with some areas further delineated into h1b5 Dry heaths; upland (H4030) and h1b6 Wet heathland with cross-leaved heath; upland (H4010). Heathland habitats were frequently recorded next to or in mosaic with blanket bog habitats. Scattered bracken was also commonly noted within these habitats.

##### Hedgerows

- 3.3.36 One hedgerow was recorded in Section B, classified as h2a Native hedgerow. This was a small area in the north of the section located between Victoria Road and the Proposed Alignment.

##### Scrub

- 3.3.37 Small areas of scrub were recorded throughout Section B. In the north of the Section, areas of both h3h Mixed scrub and h3e Gorse scrub were recorded between Victoria Road and the Proposed Alignment. An area of h3e Gorse scrub was also present along the eastern bank of Allt nam Ban. In the centre of the section, a small area of h3e Gorse scrub was recorded near Allt Horn and a larger area of the same habitat type extended along a rocky outcrop on the edge of the A839 at Morvich Rogart. In the south of the section, small areas of h3e Gorse scrub were recorded just south of the River Fleet.

#### Wetland

##### Bog

- 3.3.38 Bog habitats were recorded extensively throughout Section B. This included large areas of f1a Blanket bog, some with scattered trees or dwarf shrubs. Large areas of f1a6 Degraded blanket bog were also recorded across the section, present as both open bog habitats and within forestry rides. Areas of the Annex 1 habitat, f1a5 Blanket bog (H7130), were less abundant compared to f1a Blanket bog and f1a6 Degraded blanket bog but did occur throughout the section. This habitat was largely concentrated in the north and centre of Section B.

#### Fen, Marsh, and Swamp

- 3.3.39 Areas of fen, marsh, and swamp habitat occurred throughout Section B. Small areas of f2c Upland fens, flushes and swamps were scattered across the north of the section, between Clynmilton Burn and Loch Horn. These areas frequently occurred within blanket bog and heathland habitats. Both f2b Purple moor-grass and rush pastures and f2c Upland flushes, fens and swamps habitats were recorded along small watercourses near Allt Burn. Similarly, f2b Purple moor-grass and rush pastures were present along small watercourses near to the River Fleet. In the south of the section, f2b Purple moor-grass and rush pastures and f2c Upland flushes, fens and swamps habitats were present within plantation woodland rides to the east of Loch Buidhe Substation.

#### Cropland

- 3.3.40 Cropland was recorded only in the north and centre of Section B. In the north, between Victoria Road and the Proposed Alignment, an area of c1a Arable field margins and an area of c1d Non-cereal crops was recorded. Two small areas of c1c6 Arable fields with wild bird mix were recorded in the centre of the section by Morvich, Rogart.

#### Urban

- 3.3.41 A small number of urban habitats were present across Section B. In the north of the section, on the eastern side of Allt nam Ban, one area of u1b Developed land; sealed surface and one of u1b6 Other developed land were recorded. Any road or train track crossing the survey area was recorded as a u1e Built linear features habitat. This included the train line and the A839 by Morvich Rogart in the centre of the section. Also in the centre was a u1b6 Other developed land area to the south of Loch Horn and a u1b Developed land; sealed surface area near to Morvich Rogart. In the south of Section B, Loch Buidhe Substation was noted as a u1b Developed land; sealed surface habitat. A ride within plantation woodland at Loch Buidhe was recorded as u1c Artificial unvegetated, unsealed surface.

#### Sparsely Vegetated Land

- 3.3.42 One area of sparsely vegetated land was recorded within Section B and was classified as s1d Other inland rock. It was located in the centre of the section on the edge of the A839 by Morvich Rogart and noted as a hard rock quarry with scattered scrub.

#### Rivers and Lakes

##### Standing Open Water

- 3.3.43 Standing open waters were located throughout Section B. In the north of the section, An Dubh-lochan was noted as r1c Oligotrophic and dystrophic lakes. A small area of r1g Other standing water was noted in the centre of the section for a lochan connected to Allt Bad a' Chrasgaidh. In the south of Section B, the areas of Loch Ruagaidh and Loch Buidhe that enter the survey area were recorded as r1a Eutrophic standing waters habitats.

##### Rivers and streams

- 3.3.44 Rivers and streams occurred across Section B, with most classified as r2a Rivers (priority habitat). This included Clynmilton Burn and Allt nam Ban in the north of the section, the River Fleet in the centre of the section and Abhainn an t-Stratha Chàrnaig in the south. One area of r2 Rivers and streams was noted, this was Allt Bad a' Chrasgaidh in the centre of the section.

#### *Section C*

- 3.3.45 Habitats recorded within the Survey Area are summarised in **Table 10**. A description of these habitats is presented in paragraphs 3.3.47 to 3.3.68.

3.3.46 Designated sites, the total area of the designation, and the area of habitats occurring within the Survey Area are presented in **Table 11**. Areas of habitat occurring within AWI sites are presented in **Table 12**. NVC communities with the potential to support GWDTE that were identified in Section C are presented in **Table 13**.

**Table 10: UKHab Habitats Present in Section C**

Note: Conservation Status: (1) Annex I habitat, (2) SBL habitat, (3) HLBAP habitat

Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Grassland	g1b - Upland acid grassland	(2), (3)	0.43
	g1b6 - Other upland acid grassland	(2), (3)	0.36
	g1c - Bracken		2.01
	g3c - Other neutral grassland		3.42
	g3c8 - Holcus-Juncus neutral grassland		2.55
Woodland	w1e - Upland birchwoods	(1), (2), (3)	1.04
	w1g - Other broadleaved woodland		0.17
	w1h - Other woodland; mixed		2.84
	w2a5 - Caledonian forest (H91C0)	(1), (2), (3)	4.96
	w2b - Other Scot's Pine woodland	(2), (3)	9.88
	w2c - Other coniferous woodland		47.33
Heathland and Shrub	h1b5 - Dry heaths; upland (H4030)	(1), (2), (3)	10.96
	h1b6 - Wet heathland with cross-leaved heath; upland (H4010)	(1), (2), (3)	4.76
	h3h - Mixed scrub		0.25
Wetland	f1a - Blanket bog	(1), (2), (3)	9.07
	f1a5 - Blanket bog (H7130)	(1), (2), (3)	4.71
	f1a6 - Degraded blanket bog	(1), (2), (3)	23.64
	f2b - Purple moor-grass and rush pastures	(1), (2)	4.18
	f2c - Upland flushes, fens and swamps	(1), (2)	1.47
Urban	u1b - Developed land; sealed surface		0.17
	u1b6 - Other developed land		0.01
	u1e - Built linear features		0.14
Rivers and Lakes	r1a - Eutrophic standing waters	(1), (2), (3)	0.20
	r1b - Mesotrophic lakes	(1), (2), (3)	1.75

**Table 11: Habitats Within Designated Sites in Section C**

Designation	Site Name	UK Habitat	Area (ha)
SSSI	Kyle of Sutherland Marshes	f2b - Purple moor-grass and rush pastures	0.21
		g1c - Bracken	0.31
		g3c8 - Holcus-Juncus neutral grassland	0.52
		r1b - Mesotrophic lakes	0.97
		u1e - Built linear features	0.01

**Table 12: Habitats within AWI Sites in Section C**

UK Habitat	Area of Habitat in AWI Site by AWI Category (ha)			
	Category 1a, 2a (ASNO)	Category 1b, 2b (LEPO)	Category 3 ('Roy' Woodlands)	TOTAL
f2b - Purple moor-grass and rush pastures	0.07			0.07
g1c - Bracken		0.12		0.12
g3c - Other neutral grassland	0.01			0.01
w1g - Other broadleaved woodland	0.00	0.16		0.16

UK Habitat	Area of Habitat in AWI Site by AWI Category (ha)			
	Category 1a, 2a (ASNO)	Category 1b, 2b (LEPO)	Category 3 ('Roy' Woodlands)	TOTAL
w1h - Other woodland; mixed		2.03		2.03
w2a5 - Caledonian forest (H91C0)		4.96		4.96
w2b - Other Scot's Pine woodland		2.05		2.05
w2c - Other coniferous woodland		7.88		7.88
(blank)		1.31		1.31
<b>TOTAL</b>	<b>0.08</b>	<b>18.50</b>		<b>18.58</b>

**Table 13: Potential GWDTE in Section C**

NVC Code	NVC Name	Rating
M15	<i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath	Moderate
M16	<i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath	High
M23	<i>Juncus effusus/acuteiflorus</i> – <i>Galium palustre</i> rush–pasture	High
M25	<i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	Moderate
M6	<i>Carex echinata</i> – <i>Sphagnum recurvum</i> mire	High
MG8	<i>Cynosurus cristatus</i> – <i>Caltha palustris</i> lowland neutral grassland	Moderate
U6	<i>Juncus squarrosus</i> – <i>Festuca ovina</i> grassland	Moderate

#### *Description of UKHab Habitats in Section C*

##### Grassland

##### Acid Grassland

- 3.3.47 Acid grassland habitats within Section C were present as small, scattered areas in the north and south, with a larger concentration in the central area, east of the Kyle of Sutherland. This habitat was largely represented by g1c Bracken in lower-lying slopes and drainage lines, with g1b Upland acid grassland found in scattered areas, many of which were grazed.

##### Neutral Grassland

- 3.3.48 Neutral grassland habitats were recorded in the north and centre of Section C. The habitat g3c Other neutral grassland was largely recorded on the eastern flood plain of the Kyle of Sutherland, with much in use for silage and haylage. Areas of g3c8 *Holcus-Juncus* neutral grassland were found in drainage lines and low-lying areas, with the largest areas on the western side of the Kyle of Sutherland (grazed by cattle) and lands directly east of the Allt Loch Lare.
- 3.3.49 Area of g4 Modified grassland were present as buildings and gardens in one area in the centre of Section C, north of the western bank floodplain of the Kyle of Sutherland.

##### Woodland and Forest

##### Broadleaved and Mixed Woodland

- 3.3.50 Broadleaved and mixed woodland was present across the north and centre of Section C. In the north of the section, a small area of w1h5 Other woodland; mixed; mainly broadleaved plantation occurred on the southern slope of Sròn Ach' a'Bhacaidh.
- 3.3.51 The remaining broadleaved and mixed woodland habitats in Section C occurred in the centre of the section, either side of the Kyle of Sutherland. To the east of the Kyle, the majority of broadleaved and mixed woodland was represented by w1h Other woodland; mixed (including a small area of plantation w1h6 Other woodland;

mixed; mainly conifer), and w1e Upland birchwoods. An area of w1g Other broadleaved woodland was also recorded on the eastern bank of the Kyle.

- 3.3.52 Two areas of w1h Other woodland; mixed occurred to the west of the Kyle, one as a plantation woodland and one as a semi-natural woodland that was noted as an ancient woodland site. An area of w1g Other woodland; broadleaved, containing self-set, young trees was also present. Along the western bank face of the Kyle was an area of w1a Upland oakwood. A single area of w1e Upland birchwoods was also present to the west of the Kyle.

#### Coniferous Woodland

- 3.3.53 Coniferous woodland made up a substantial proportion of Section C, largely represented by w2c Other coniferous woodland. In the north of the section, stands of w2c Other coniferous woodland plantation occurred between Loch Buidhe Substation and Lochbuie Road. This habitat also occurred as smaller areas across the north of Section C, all consisting of young, Sitka spruce plantation upon bog and heathland habitats.
- 3.3.54 A large area of w2c Other coniferous woodland plantation occurred in the centre of Section C, west of Loch Leisgein. This extended westwards until it reached an area of w2b Other Scot's Pine woodland to the east of the A836.
- 3.3.55 Substantial areas of w2b Other Scot's Pine woodland and w2c Other coniferous woodland extended across from the western half of Carbisdale Wood to Culrain Burn. Within this, two small areas of the Annex 1 habitat w2a5 Caledonian forest (H91C0) were also recorded.
- 3.3.56 Between Culrain Burn and south end of Section C, w2c Other coniferous woodland was the dominant habitat type.

#### Heathland and Shrub

##### Heathland

- 3.3.57 Heathland within Section C was largely concentrated in the north, on the southern slopes to lowlands of Sròn Ach' a'Bhacaidh and Meall Eachainn. Large areas were also recorded in the centre, in the open areas amid coniferous woodland plantation blocks between Henman's Burn and Allt na Ciste Duibhe, and a few areas within Carbisdale Wood.
- 3.3.58 The habitat h1b Upland heathland was recorded in the north and centre of Section C, with h1b5 Dry heaths; upland (H4030) spreading from the north to centre, and h1b6 Wet heathland with cross-leaved heath; upland (H4010) limited to three main areas. Presence of scattered trees were common within the areas, particularly for h1b5 Dry heaths; upland (H4030) and in the open areas amid coniferous woodland plantation blocks between Henman's Burn and Allt na Ciste Duibhe.

##### Scrub

- 3.3.59 Only two areas of scrub habitat were present in Section C. One area of h3h Mixed scrub was present in the north of the section along the eastern edge of Loch Buie Road near to Loch Buidhe Substation. A further small area comprising h3g Rhododendron scrub was present in the centre of the section, on an island within a lochan connected to Culrain Burn.

#### Wetland

##### Bog

- 3.3.60 Bog habitats in Section C were largely represented by f1a Blanket bog and f1a6 Degraded blanket bog. Both habitat types occurred in similar proportions throughout the north of Section C, extending across most of the



area between Loch Buidhe Substation and Loch Leisgein. Just west of the substation, one area of Annex 1, f1a5 Blanket bog (H7130) was also recorded.

3.3.61 Both f1a Blanket bog and f1a6 Degraded blanket bog were present as open areas between stands of coniferous woodland plantation in the centre of Section C, east of the Kyle of Sutherland.

3.3.62 The south of Section C contained two small areas of f1a6 Degraded blanket bog, occurring as open habitat between plantation coniferous woodland stands.

#### Fen, Marsh, and Swamp

3.3.63 Fen, marsh and swamp habitats were present throughout Section C. In the north of the section, between the Loch Buidhe Substation and Allt Loch Laro, areas of f2b Purple moor-grass and rush pasture and f2c Upland flushes, fens and swamps occurred around small watercourses and drainage lines. Small areas of both habitat types occurred in the centre of the section; one around the edges of the Loch Leisgein and two in open areas between stands of coniferous woodland plantation.

3.3.64 A large area of f2b Purple moor-grass and rush pasture extended across a floodplain on the east bank of the Kyle of Sutherland in the centre of Section C. The only area of f2e Reedbeds found within Section C also occurred on this floodplain, extending into Henman's Burn before the watercourse merges with the Kyle of Sutherland. The centre of Section C also contained one small area of f2c Upland flushes, fens and swamps on the banks of Culrain Burn, west of Carbisdale Castle.

3.3.65 One fen, marsh and swamp habitat occurred in the south of Section C. This was an area of f2c Upland flushes, fens and swamps that extended along Culeave Burn, which runs through a plantation coniferous woodland ride.

#### Cropland

3.3.66 Cropland habitat was recorded once within the survey area of Section C, as c1 Arable and horticulture, on floodplain between the River Shin and the southern start of the A837.

#### Urban

3.3.67 Urban habitats made up a very small proportion of Section C. In the north of the section, Loch Buie Road was noted as u1b Developed land; sealed surface. A small area next to Loch Buie Rd junction was noted as u1b6 Other developed land. In the centre of the section, the A836, A837, a small private road and Inveroykel Culrain road were recorded as u1e Built linear features. No urban habitats were present in the south of Section C.

#### Rivers and Lakes

3.3.68 Two rivers and lakes habitats were recorded within Section C. In the north of the section at the base of Sròn Ach' a'Bhacaidh, Loch Leisgein was recorded as a r1a Eutrophic standing waters habitat. In the south of Section C, an r1 Standing open water and canals habitat occurred as a lochan connected to Culrain Burn.

#### *Section D*

3.3.69 Habitats recorded within the Survey Area are summarised in **Table 14**. A description of these UKHab habitats is presented in paragraphs 3.2.71 to 3.3.92.

3.3.70 Designated sites, the total area of the designation, and the area of habitats occurring within the Survey Area are presented in **Table 15**. Areas of habitat occurring within AWI sites are presented in **Table 16**. NVC communities with the potential to support GWDTE that were identified in Section D are presented in **Table 17**.

**Table 14: UKHab Habitats Present in Section D**

Note: Conservation Status: (1) Annex I habitat, (2) SBL habitat, (3) HLBAP habitat

Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Grassland	g1b - Upland acid grassland	(2), (3)	7.42
	g1b6 - Other upland acid grassland	(2), (3)	6.58
	g1c - Bracken		1.05
	g3c - Other neutral grassland		1.39
	g3c7 - Deschampsia neutral grassland		0.54
	g3c8 - Holcus-Juncus neutral grassland		1.40
	g4 - Modified grassland		2.37
Woodland	w1d - Wet woodland	(1), (2), (3)	0.05
	w1e - Upland birchwoods	(1), (2), (3)	2.87
	w1f - Lowland mixed deciduous woodland	(2), (3)	0.53
	w1g - Other broadleaved woodland		1.39
	w1h - Other woodland; mixed		1.26
	w1h5 - Other woodland; mixed; mainly broadleaved	(2), (3)	0.04
	w1h6 - Other woodland; mixed; mainly conifer		1.68
	w2a5 - Caledonian forest (H91C0)	(1), (2), (3)	1.60
	w2b - Other Scot's Pine woodland	(2), (3)	15.47
	w2c - Other coniferous woodland		109.91
Heathland and Shrub	h1b - Upland heathland	(2), (3)	2.64
	h1b5 - Dry heaths; upland (H4030)	(1), (2), (3)	20.79
	h1b6 - Wet heathland with cross-leaved heath; upland (H4010)	(1), (2), (3)	25.73
	h3e - Gorse scrub		2.77
	h3h - Mixed scrub		0.71
	h3j - Willow scrub		1.87
Wetland	f1a - Blanket bog	(1), (2), (3)	104.27
	f1a5 - Blanket bog (H7130)	(1), (2), (3)	12.38
	f1a6 - Degraded blanket bog	(1), (2), (3)	16.52
	f2b - Purple moor-grass and rush pastures	(1), (2)	0.52
	f2c - Upland flushes, fens and swamps	(1), (2)	3.40
Urban	u1b - Developed land; sealed surface		0.02
	u1e - Built linear features		1.00
Sparsely Vegetated Land	s1d - Other inland rock		0.00
Rivers and Lakes	r1a - Eutrophic standing waters	(1), (2), (3)	0.08
	r1b - Mesotrophic lakes	(1), (2), (3)	0.15
	r1c - Oligotrophic and dystrophic lakes	(1), (2), (3)	0.26
	r1g - Other standing water	(2), (3)	0.19
	r2 - Rivers and streams	(1), (2), (3)	0.19
	r2a - Rivers (priority habitat)	(1), (2), (3)	0.17

**Table 15: Habitats Within Designated Sites in Section D**

Designation	Site Name	UK Habitat	Area (ha)
SSSI	Allt nan Caorach	r1b - Mesotrophic lakes	0.08
		w1e - Upland birchwoods	0.65
		w1h5 - Other woodland; mixed; mainly broadleaved	0.01

Designation	Site Name	UK Habitat	Area (ha)
		w2b - Other Scot's Pine woodland	0.16
		w2c - Other coniferous woodland	0.06

**Table 16: Habitats within AWI Sites in Section D**

UK Habitat	Area of Habitat in AWI Site by AWI Category (ha)			
	Category 1a, 2a (ASNO)	Category 1b, 2b (LEPO)	Category 3 ('Roy' Woodlands)	TOTAL
g1b - Upland acid grassland	0.14			0.14
g1c - Bracken	0.11			0.11
g3c8 - Holcus-Juncus neutral grassland		0.16		0.16
h1b - Upland heathland		0.02		0.02
h1b5 - Dry heaths; upland (H4030)		0.01		0.01
r1b - Mesotrophic lakes	0.08			0.08
r2 - Rivers and streams		0.19		0.19
w1d - Wet woodland	0.05			0.05
w1e - Upland birchwoods	0.61	0.01		0.62
w1g - Other broadleaved woodland		0.21		0.21
w1h - Other woodland; mixed		0.41		0.41
w1h6 - Other woodland; mixed; mainly conifer		1.20		1.20
w2a5 - Caledonian forest (H91C0)		1.27		1.27
w2b - Other Scot's Pine woodland	0.00	3.96		3.96
w2c - Other coniferous woodland	0.21	7.05		7.27
<b>TOTAL</b>	<b>1.20</b>	<b>14.50</b>		<b>15.69</b>

**Table 17: Potential GWDTE in Section D**

NVC Code	NVC Name	GWDTE Rating
M10	<i>Carex dioica</i> – <i>Pinguicula vulgaris</i> mire	High
M15	<i>Trichophorum cespitosum</i> – <i>Erica tetralix</i> wet heath	Moderate
M16	<i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath	High
M21	<i>Narthecium ossifragum</i> – <i>Sphagnum papillosum</i> valley mire	High
M23	<i>Juncus effusus/acutiflorus</i> – <i>Galium palustre</i> rush-pasture	High
M25	<i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	Moderate
M6	<i>Carex echinata</i> – <i>Sphagnum recurvum</i> mire	High
MG10	<i>Holcus lanatus</i> – <i>Juncus effusus</i> rush-pasture	Moderate
MG9	<i>Holcus lanatus</i> – <i>Deschampsia cespitosa</i> grassland	Moderate
U6	<i>Juncus squarrosus</i> – <i>Festuca ovina</i> grassland	Moderate
W7	<i>Alnus glutinosa</i> – <i>Fraxinus excelsior</i> – <i>Lysimachia nemorum</i> woodland	Moderate

#### Description of UKHab Habitats in Section D

##### Grassland

##### Acid Grassland

3.3.71 Presence of acid grassland in Section D was scattered, with smaller areas recorded in the north through to the centre, and a larger area recorded in the south just northwest of Dingwall. The habitat g1b Upland acid grassland was largely recorded as scattered areas in the north and south, with only a few small areas recorded in the centre. The largest area was recorded in the area immediately southwest of the Moss of Bogandurie and was noted to contain scattered rushes and dwarf shrubs. Other areas recorded throughout the section

commonly noted grazing, and scattered dwarf shrubs, trees and rushes. One area directly adjoining the northern side of Allt Dounie, and another in the western junction of Allt Dounie and Allt Srath nan Seashach, were noted to have been burnt.

#### Neutral Grassland

- 3.3.72 Neutral grassland habitats occurred throughout section D, largely concentrated in the north and south of the section. In the north, areas of g3c Other neutral grassland occurred on both sides of the River Carron. Also close to the River Carron were patchy areas of g3c7 *Deschampsia* neutral grassland and g3c8 *Holcus-Juncus* neutral grassland. Two areas of g3c8 *Holcus-Juncus* neutral grassland were also recorded near to Allt Dounie and on felled plantation by Strathusdale, respectively. In the centre of the section, neutral grassland habitats were limited to small areas of g3c Other neutral grassland and g3c8 *Holcus-Juncus* neutral grassland to the north of the River Averon and close to Allt a' Mhuilinn. Neutral grasslands were more extensive in the south of Section D. Near Strathpeffer, g3c Other neutral grassland areas were recorded within felled plantation woodland. Between Jamestown and Contin there were small areas of g3c5 *Arrhenatherum* neutral grassland and a large area of grazed g3c6 *Lolium-Cynosurus* neutral grassland. To the north of the Heights of Brae was a small g2c7 *Deschampsia* neutral grassland area.

#### Modified Grassland

- 3.3.73 Modified grassland areas were classified as g4 Modified grassland and had a limited distribution throughout Section D. Areas in the north of the section were located around Cadh' an Tartair and were frequently noted as grazed. A large area was recorded in the centre of the section by Allt a' Ghlinne, as well as large, partially horse-grazed, areas to the west of Boath. In the south of Section D, a small area of g4 Modified grassland occurred by Coulwood and within a vegetated garden to the north of the River Sgitheach.

#### Woodland and Forest

##### Broadleaved and Mixed Woodland

- 3.3.74 Distribution of Broadleaved and mixed woodland was largely scattered throughout Section D, with a larger concentration of area in the south, west of Strathpeffer.
- 3.3.75 The habitat w1d Wet woodland was found in the far north and south, but not in the centre of the section. In the north, this habitat was found along the southern bank of the River Carron, and along Poll na Gead-iasg just north of the River Carron. To the south, an area was recorded in woodland to the north-west of Jamestown and was noted to be a semi-natural and open space woodland and high forest, with a complex woody structure, and to contain mature trees.
- 3.3.76 The habitat w1e Upland birchwoods was recorded in the far north, and in scattered areas in the centre and south of the Section. The areas in the far north were recorded on the floodplains on the southern side of the River Carron, and the southern edge of the West Strathcarron Wood. In the centre, two small areas were recorded just to the north and south of the Allness River. Further areas were recorded to the west of Evanton, with those along Allt nan Caorach noted to be semi-natural woodland and those in the northern slopes above the River Sgitheach noted to include young, planted trees, and plantation trees. Large areas were recorded in the south, including on the eastern slope of Raven Rock, and woodland between and east of Loch na Crann and An Dubh-lochan just west of Strathpeffer. Another small area was also recorded in the woodland adjacent to the A834, west of Jamestown.
- 3.3.77 The habitat w1f Lowland mixed deciduous woodland was only recorded in the far north, in two areas on the northern bank of the River Carron, and in one area in the far south. The area in the south was noted to be secondary woodland with a complex woody structure, and to contain mature, veteran and plantation trees. Fallen dead wood was also noted to be abundant.

- 3.3.78 The habitat w1g Other broadleaved woodland was recorded in scattered locations in the centre and south, but not in the north. In the centre, one small area on the northern side of Allt Loch Bad a' Bháthaich (north-west of Strathrusdale) was noted to be semi-natural, open space woodland with young self-set trees and forest brash. Other areas in the centre included those recorded on and just to the north of the Alness River, just east of Loch Morie. Areas recorded in the south included those in the Moss of Bogandurie north-west of the River Sgitheach, which were noted to include young planted trees in a plantation. Areas recorded within Torrachility Forest (west of Strathpeffer) were noted to have young self-set trees, with the area on the eastern slope of Raven Rock being semi-natural woodland having been felled, and the area adjoining the eastern bank of Loch na Crann plantation. One narrow strip of plantation woodland (beech, English oak, larch, sycamore) was recorded west of Jamestown, and noted to have been grazed by cattle and sheep.
- 3.3.79 The habitat w1h Other woodland; mixed was recorded in the centre and south, but not in the north. In the centre, two areas were recorded to the north and south of the Alness River, with another along the northern bank of the River Glass. To the south, two large and a few smaller areas were recorded north-west of Strathpeffer, noted as secondary woodland plantation, with the northern-most large area having been felled.
- 3.3.80 Areas of w1h Other woodland; mixed were further delineated into w1h5 Other woodland; mixed; mainly broadleaved, which was largely recorded in the south, with two small areas found in the north (north and south of Abhainn a' Choire Bhuig) and centre (northern banks of the Avern River). The larger areas in the south were recorded within Torrachility Forest, with the northern-most areas bordering Peffery Burn. These areas were commonly noted to contain young trees, both planted and self-set, and occasional scattered shrubs and bracken.
- 3.3.81 The habitat w1h Other woodland; mixed was also further delineated into w1h6 Other woodland; mixed; mainly conifer, with areas recorded across the Section. The northern most area was recorded in the slopes to the north of Abhainn Glae an t-Seilich, north of Strathrusdale. One area in the centre was recorded on the northern slopes above the River Glass and was noted to be plantation. An area of non-native woodland was recorded on the gentle slopes above the River Sgitheach, directly to the west of Cnoc a'Bhreacaich. Areas recorded to the west of Strathpeffer in Torrachility Forest included large areas in the south-east of the forest, woodland surrounding an unnamed body of water in the middle (semi-natural woodland), and a small area on the southern side of Peffery Burn.

#### Coniferous Woodland

- 3.3.82 Coniferous woodland was mostly located in the centre and south of Section D, most frequently as large areas of plantation woodland. These extensive areas stretched between Strathrusdale and Strathpeffer and were mainly comprised of w2c Coniferous woodland, with w2b Other Scot's Pine woodland also present at a lower frequency. Three areas of the Annex 1 habitat w2a5 Caledonian forest (H91C0) were recorded in Section D, all in the south of the section. One was to the north of Allt a'Ghlinne and two were located near Bottacks.

#### Heathland and Shrub

##### Heathland

- 3.3.83 Heathland habitats occurred in a patchy distribution throughout the whole of Section D. Areas of h1b5 Dry heaths; upland (H4030) and h1b6 Wet heathland with cross-leaved heath; upland (H4010) were the most frequently recorded heathland habitats in the section, the latter often with scattered trees or scrubs. Areas of h1b Upland heathland were also present throughout but at a lower frequency. Limited areas of h1a7 Wet heathland with cross-leaved heath; lowland (H4010) were recorded in Section D. These were grazed areas present in the north of the section by Cadh' an Tartair and in the south by Heights of Brae.

#### Scrub

- 3.3.84 Scrub habitats were present mostly as limited areas scattered throughout Section D. Small areas of h3e Gorse scrub and h3h Mixed scrub were recorded in the far north of the section by Cadh' an Tartair and in the centre of the section by Boath and Eileanach Lodge. A larger area of h3e Gorse scrub occurred by Allt a'Ghlinne. In the south of the section, small h3e Gorse scrub and h3h Mixed scrub areas were also recorded along the edges and to the north of the River Sgitheach. Relatively large areas of sheep-grazed h3j Willow scrub with scattered trees were noted to the north of Heights of Brae. Small areas of h3h Mixed scrub and h3e Gorse scrub were recorded near Peffery Burn and Strathpeffer, respectively.

#### Wetland

##### Bog

- 3.3.85 Bog was the dominant habitat type in the north of Section D, with a patchy distribution also across the centre and south. Of this, f1a Blanket bog was the most frequently recorded and occurred throughout Section D. Areas of f1a6 Degraded blanket bog and Annex 1 f1a5 Blanket bog (H7130) were largely concentrated in the north of the section, with small areas also recorded in the centre, but were not present in the south of Section D. Only two areas of Annex 1 habitat f1b5 Active raised bogs (H7110) were recorded in this section, located in the south of the section by Coulwood. Both areas had young, self-set trees growing within them.

##### Fen, Marsh, and Swamp

- 3.3.86 Fen, marsh and swamp habitats were recorded throughout Section D, frequently occurring within larger areas of blanket bog and heathland. Of these, areas of f2c Upland flushes, fens and swamps and less frequent areas of f2b Purple moor-grass and rush pasture were scattered across the section. One f2e Reedbeds habitat was recorded in the south Section D by Strathpeffer.

#### Cropland

- 3.3.87 Cropland was limited within Section D and only occurred in the centre and south of the section. In the centre, three c1d88 Other non-cereal crop fields were recorded by Boath. In the far south of Section D, three c1c Cereal crops habitats were located to the west of Jamestown.

#### Urban

- 3.3.88 Urban features in Section D were largely represented by unsealed tracks, with scattered and infrequent buildings, including residential and those associated with agricultural activities. One disused quarry was observed northwest of Strathpeffer.

#### Rivers and Lakes

##### Standing Open Water

- 3.3.89 Standing open water habitats were located throughout Section D, mostly made up of small waterbodies concentrated in the centre and south of the section. In the north, one small r1g Other standing water habitat was recorded by the River Carron. In the centre of the section, small areas of r1a Eutrophic standing waters and r1c Oligotrophic and dystrophic lakes were noted close to the River Averon.
- 3.3.90 Two small r1g Other standing water habitats were also noted in the centre of the section by Boath. To the south of the River Glass, one r1c Oligotrophic and dystrophic lakes habitat was recorded. I
- 3.3.91 In the south of Section D, close to Strathpeffer, one area of r1 Standing open water and canals and four small r1g Other standing water habitats were recorded. Part of Loch na Crann that crossed into the survey area in the south of the section was recorded as a r1 Standing open water and canals habitat.

## Rivers and Streams

3.3.92 Rivers and streams in Section D and recorded as r2a Rivers (priority habitat) comprised the named watercourses Allt Dounie, Abhainn a' Choire Bhuig, Allt Coire na Cloiche, Abhainn Glac an t-Seilich, occurring in the north of the Survey Area. Further watercourses comprised the Allt a' Ghreach and the River Glass in the centre of Section D, and the River Sgitheach and Abhainn Sgitheach, River Carron, and River Avern in the south.

## Section E

3.3.93 Habitats recorded within the Survey Area are presented in **Table 18**. A description of these UKHab habitats is presented in paragraphs 3.3.95 to 3.3.133.

3.3.94 With the exception of areas listed on the AWI, Section E does not interact with any Designated Sites. Areas of habitat occurring within AWI sites are presented in **Table 19**. NVC communities with the potential to support GWDTE that were identified in Section E are presented in **Table 20**.

**Table 18: UKHab Habitats Present in Section E**

Note: Conservation Status: (1) Annex I habitat, (2) SBL habitat, (3) HLBAP habitat

Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Grassland	g1b - Upland acid grassland	(2), (3)	7.92
	g1b6 - Other upland acid grassland	(2), (3)	3.67
	g1c - Bracken		6.65
	g3c - Other neutral grassland		6.79
	g3c5 - Arrhenatherum neutral grassland		0.24
	g3c6 - Lolium-Cynosurus neutral grassland		16.67
	g3c8 - Holcus-Juncus neutral grassland		3.95
	g4 - Modified grassland		7.34
Woodland	w1e - Upland birchwoods	(1), (2), (3)	18.02
	w1f - Lowland mixed deciduous woodland	(2), (3)	0.45
	w1g - Other broadleaved woodland		1.47
	w1h - Other woodland; mixed		15.18
	w1h5 - Other woodland; mixed; mainly broadleaved	(2), (3)	7.15
	w1h6 - Other woodland; mixed; mainly conifer		5.03
	w2a5 - Caledonian forest (H91C0)	(1), (2), (3)	0.15
	w2b - Other Scot's Pine woodland	(2), (3)	20.26
	w2c - Other coniferous woodland		42.28
Heathland and Shrub	h1b - Upland heathland	(2), (3)	7.87
	h1b5 - Dry heaths; upland (H4030)	(1), (2), (3)	30.99
	h1b6 - Wet heathland with cross-leaved heath; upland (H4010)	(1), (2), (3)	4.65
	h3e - Gorse scrub		0.40
	h3h - Mixed scrub		0.20
Wetland	f1a - Blanket bog	(1), (2), (3)	9.56
	f1a5 - Blanket bog (H7130)	(1), (2), (3)	15.78
	f1a6 - Degraded blanket bog	(1), (2), (3)	0.52
	f1b5 - Active raised bogs (H7110)	(1), (2), (3)	0.83
	f2b - Purple moor-grass and rush pastures	(1), (2)	1.94
	f2c - Upland flushes, fens and swamps	(1), (2)	0.18
	f2d - Aquatic marginal vegetation		0.02



Broad Habitat	UKHab Classification	Conservation Status	Area (ha)
Cropland	c1b - Temporary grass and clover leys		3.08
	c1c - Cereal crops		7.18
	c1d - Non-cereal crops		2.82
Terrestrial	u1b - Developed land; sealed surface		0.07
	u1c - Artificial unvegetated, unsealed surface		0.14
	u1d - Suburban mosaic of developed and natural surface		0.01
	u1e - Built linear features		0.77
Sparsely Vegetated Land	s1a - Inland rock outcrop and scree habitats	(1), (2), (3)	0.04
Rivers and Lakes	r2 - Rivers and streams	(1), (2), (3)	0.74
	r2a - Rivers (priority habitat)	(1), (2), (3)	1.32

**Table 19: Habitats within AWI Sites in Section E**

UK Habitat	Area of Habitat in AWI Site by AWI Category (ha)			
	Category 1a, 2a (ASNO)	Category 1b, 2b (LEPO)	Category 3 ('Roy' Woodlands)	TOTAL
f1a - Blanket bog		0.01		0.01
f2b - Purple moor-grass and rush pastures		0.01		0.01
g1b - Upland acid grassland	0.32	0.06		0.38
g1c - Bracken	0.17	0.85		1.02
g3c - Other neutral grassland		0.17		0.17
g4 - Modified grassland		0.13		0.13
h1b - Upland heathland		6.83		6.83
h1b5 - Dry heaths; upland (H4030)		0.32		0.32
h3e - Gorse scrub		0.21		0.21
r2 - Rivers and streams	0.09			0.09
s1a - Inland rock outcrop and scree habitats	0.00			0.00
u1c - Artificial unvegetated, unsealed surface		0.14		0.14
u1e - Built linear features	0.07	0.08		0.15
w1e - Upland birchwoods	0.38	3.08		3.47
w1g - Other broadleaved woodland		0.01		0.01
w1h - Other woodland; mixed	1.04	3.94		4.98
w1h5 - Other woodland; mixed; mainly broadleaved	1.12	1.12		2.24
w1h6 - Other woodland; mixed; mainly conifer		0.57		0.57
w2a5 - Caledonian forest (H91C0)		0.00		0.00
w2b - Other Scot's Pine woodland		2.89		2.89
w2c - Other coniferous woodland	1.68	20.84		22.52
(blank)	0.00			0.00
<b>TOTAL</b>	<b>4.88</b>	<b>41.25</b>		<b>46.14</b>

**Table 20: Potential GWDTE in Section E**

NVC Code	NVC Name	GWDTE Rating
M16	<i>Erica tetralix</i> – <i>Sphagnum compactum</i> wet heath	High
M23	<i>Juncus effusus/acutiflorus</i> – <i>Galium palustre</i> rush–pasture	High
M25	<i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire	Moderate
M6	<i>Carex echinata</i> – <i>Sphagnum recurvum</i> mire	High
MG10	<i>Holcus lanatus</i> – <i>Juncus effusus</i> rush–pasture	Moderate
W5	<i>Alnus glutinosa</i> – <i>Carex paniculata</i> woodland	Moderate

NVC Code	NVC Name	GWDTE Rating
W6	<i>Alnus glutinosa</i> – <i>Urtica dioica</i> woodland	Moderate
W7	<i>Alnus glutinosa</i> – <i>Fraxinus excelsior</i> – <i>Lysimachia nemorum</i> woodland	High

#### Description of UKHab Habitats in Section E

##### Grassland

###### Acid Grassland

3.3.95 Acid grassland habitats occurred throughout the extent of Section E. These habitats were largely represented by scattered areas of g1b Upland acid grassland and g1c Bracken across the north, centre and south of the section.

3.3.96 In the south of Section E, one small area of u1d Lowland acid grassland was recorded between Breakachy Hill and the A831.

###### Neutral Grassland

3.3.97 Neutral grassland habitats were recorded across Section E, largely concentrated in the north and centre of the section. Scattered areas of g3c8 *Holcus-juncus* neutral grassland were present throughout the north of the section. Small areas of g3c Neutral grassland, g3c6 *Lolium-Cynosurus* neutral grassland and g3c5 *Arrhenatherum* neutral grassland also occurred in the north between the A835 and the River Conon.

3.3.98 Areas of g3c8 *Holcus-juncus* neutral grassland were also recorded, scattered across the centre of Section E. Two areas of g3c Other neutral grassland were present in the centre, one just south of the Falls of Orrin and one at the northern base of Cnoc Udias.

3.3.99 Two areas of g3c8 *Holcus-juncus* neutral grassland occurred in the south of the section between Breakachy and Crask of Aigas.

###### Modified Grassland

3.3.100 Modified grassland was recorded across Section E, concentrated in the south of the section. Small areas of g4 Modified grassland occurred in the north of the section, between the A835 and the A834 and to the west Muirton Mains. In the centre of Section E, one area of g4 Modified grassland was recorded just north of Allt Goibhre.

3.3.101 In the south of Section E, areas of g4 Modified grassland were mainly situated around the south tip of the survey area, along with small areas near Crask of Aigas and Breakachy.

##### Woodland and Forest

###### Broadleaved and Mixed Woodland

3.3.102 Broadleaved and mixed woodland was recorded throughout Section E and were highly variable in form. The extent of these woodlands covered a larger area in the centre of the section compared to the north and south.

3.3.103 The habitat w1e Upland birchwoods formed the largest portion of woodland recorded in Section E, with a large area around Aultgowrie, south of the River Orrin and west and south of Allt Goibhre. These areas were botanically diverse, including the presence of ancient woodland indicator species and veteran trees. Smaller areas were recorded in the north, southeast of Loch Achonachie, and in the south along Breakachy Burn, just north and south of Allt na h-Athain, along the A831 just south of the Aigas Dam on the River Beaully, and in Ruttle Wood.

- 3.3.104 The habitat w1d5 Alder woodland on floodplains (H91E0) was only recorded in one location in Section E, in a bend of the Black Water, just south of the A835. This woodland was noted to be semi-natural, with scattered scrub and mature trees present.
- 3.3.105 The habitat w1f Lowland mixed deciduous woodland was only recorded in two locations, with the area in the north observed along the northern side of the Black Water, just south of the A835. This woodland was noted to be semi-natural with scattered scrub closer to the river and a mix of self-set young trees, mature trees and high forest present. A further delineated area of w1f7 Other Lowland mixed deciduous woodland was recorded in the south, bisected by the Allt na h-Athain, with scattered bracken present.
- 3.3.106 The habitat w1g Other broadleaved woodland was recorded in scattered areas in the north along the River Conon and Black Water and south in two isolated areas. The largest area recorded was in the centre along the southern side of the River Orrin, with the eastern areas noted as being semi-natural woodland with scattered bracken and the western area as containing invasive non-native species.
- 3.3.107 The habitat w1h Other woodland; mixed was recorded largely in the north and centre, with a small area recorded in the very south, east of the River Beaully. Some small areas were further delineated as w1h5 Other woodland; mixed; mainly broadleaved, north and south of the River Orrin and w1h6 Other woodland; mixed; mainly conifer to the east and north of Loch nam Bonnach, with both recorded in Ruttle Wood east of the River Beaully.
- Coniferous Woodland
- 3.3.108 Large areas of coniferous woodland were present throughout Section E, largely represented by w2c Other coniferous woodland. In the north of the section, coniferous woodland was concentrated around Fairburn, on both sides of the River Orrin. This was plantation woodland consisting predominantly of w2c Other coniferous woodland but including a large area of w2b Other Scot's Pine woodland.
- 3.3.109 In the centre of the section, coniferous woodland was represented by plantation w2c Other coniferous woodland, located to the west of Aultvaich. One small area of w2b Other Scot's Pine woodland was also recorded in this area.
- 3.3.110 Coniferous woodland in the south was recorded between Breakachy Burn and the south end of the survey area. This included areas of w2b Other Scot's Pine woodland between Breakachy Burn and Allt na h-Athain. A substantial area of w2c Other coniferous woodland was present on both sides of the River Beaully at the south end of Section E. An area of Annex 1 habitat w2a5 Caledonian forest (H91C0) was recorded within this coniferous woodland habitat, largely around Allt na Crasgag.

#### Heathland and Shrub

##### Heathland

- 3.3.111 Heathland was recorded extensively throughout Section E, with the greatest concentration mapped in the centre and south, between Allt Goibhre and the River Beaully. Only a few scattered areas were recorded north of Allt Goibhre, with no areas of Heathland recorded to the north of the River Conon.
- 3.3.112 All Heathland recorded in Section E was described as upland, with the habitat h1b Upland heathland recorded in open areas between Muirton and Strathan Woods, in large areas within Cornhill and Bridgepark Woods just south of the River Orrin, two smaller areas northwest of Farley, and one larger area immediately south of Breakachy Burn.
- 3.3.113 The further delineated habitat h1b5 Dry heaths; upland (H4030) was recorded extensively in the southern half of Section E, between Allt Goibhre and the River Beaully, but was not recorded in the north. Scattered bracken

and rock outcrops were frequently observed within these areas. Scattered trees and young self-set trees were more commonly observed in the areas recorded between Allt na h-Athain and the River Beaully and large area on the western and south western slopes of Cnoc Udais.

3.3.114 The further delineated habitat h1b6 Wet heathland with cross-leaved heath; upland (H4010) was recorded much less frequently. Two areas were recorded in the north, in Bridgepark Wood, and on the southern edge of Auchmore Wood. A large area was also recorded in the south, bisected by the Allt na h-Athain, with another smaller area recorded on the northeastern edge of the Aigas Community Forest. The areas to the south were commonly observed to contain scattered trees and bracken, and juniper on heaths or calcareous grasslands.

#### Scrub

3.3.115 Small areas of scrub were recorded across Section E, often along linear features such as tracks and watercourses with frequent scattered trees. In the north of the section, h3e Gorse scrub and h3h Mixed scrub habitats were present along the banks of Alltan Dubh. To the south of the River Orrin, h3e Gorse scrub was recorded along an access track for the adjacent plantation woodland. A small area of h3j Willow scrub occurred to the north of Allt Goibhre.

3.3.116 In the centre of Section E, h3h Mixed scrub was recorded by Breakachy Burn.

3.3.117 The south of the section contained small areas of h3e Gorse scrub, h3h Mixed scrub and h3j Willow scrub to the southwest of Breakachy.

#### Wetland

##### Bog

3.3.118 Bog habitat in Section E was recorded extensively in the area between Loch nam Bonnach in the centre to the River Beaully in the south, with recordings in the north limited to one area just south of the River Orrin and a few scattered areas just north of the River Conon.

3.3.119 The habitat f1a Blanket bog was largely recorded in the area immediately surrounding Loch nam Bonnach, and in a large area adjoining and extending south-west of Breakachy Burn. Blanket bog recorded on the eastern side of the Loch was observed to have felled historic planting, and to form a mosaic with *Holcus-Juncus* grassland. Areas to the west of the Loch were observed to have scattered dwarf shrubs present, forming a matrix with some small areas of acid grassland dominated by Wavy Hair-grass (*Avenella flexuosa*), heath (*Calluna* sp.), or *Holcus-Juncus* grassland.

3.3.120 The recorded areas of habitat f1a Blanket bog recorded directly adjoining and just south of Breakachy Burn were observed to contain scattered scrub, rushes and tress, including young self-set birch and willow.

3.3.121 The further delineated habitat f1a5 Blanket bog (H7130) was only recorded in the area spanning south of Allt non Eun and north of Breakachy Burn. One small area just north of Breakachy Burn was noted to be re-created habitat.

3.3.122 Only one small area of blanket bog was recorded as the habitat f1a6 Degraded blanket bog, located in the south between the Aigas Community Forest and River Beaully. This area was noted to contain scattered trees and to seem to have been previously cut.

##### Fen, Marsh, and Swamp

3.3.123 A small proportion of Section E consisted of fen, marsh and swamp habitats, distributed throughout the section. In the north of the section, a small area of f2c Upland flushes, fens and swamps occurred around a watercourse

within grazed, neutral grassland to the north of the River Conon. A f2b Purple moor-grass and rush pastures area was recorded adjacent to a tributary of the River Orrin.

3.3.124 Areas of f2c Flushes, fens and swamps were located across the centre of the section. The habitat was represented as an open area within plantation coniferous woodland, to the west of Aultvaich. It was also recorded to the south of Loch nam Bonnach, as flushes within blanket bog and heathland habitats, and adjacent to a watercourse to the west of Drumindorsair.

3.3.125 In the south of the section, small areas of f2b Purple moor-grass and rush pasture were present between Allt h-Athain and the River Beaully. One area was also recorded adjacent to Allt nan Damh, containing scattered trees, scrub and dwarf shrubs. A single, small area of f2d Aquatic marginal vegetation occurred in Section E, just west of the A831.

#### Cropland

3.3.126 Cropland was exclusively recorded in the north of Section E. Fields of c1c Cereal crop and c1b Temporary grass and clover leys were noted between the A834 and the A835. Between the A834 and the River Conon, one c1d Non-cereal crop field was recorded. One c1c Cereal crop field was recorded adjacent to the south bank of the river.

#### Urban

3.3.127 Urban habitats in Section E, predominantly comprise the habitats u1b - Developed land; sealed surface, u1c - Artificial unvegetated, unsealed surface, and u1d - Suburban mosaic of developed and natural surface. These habitats are associated with settlements and buildings occurring throughout the section.

3.3.128 In addition, u1e - Built linear features are scattered throughout Section E, associated with road networks, settlements and access tracks.

#### Sparsely Vegetated Land

3.3.129 Two sparsely vegetated land habitats were recorded within Section E, both s1a Inland rock outcrop and scree habitats. One was noted as a ruined building and as a castle or historic building or monument close to Breakachy. Another was located along the southern bank of Allt Goibhre.

#### Rivers and Lakes

##### Standing Open Water

3.3.130 A small number of Standing open water habitats were recorded throughout Section E. One r1a Eutrophic standing waters habitat was present in the north of the section, to the west of Fairburn Activity Centre. To the south of Fairburn Activity Centre was a small r1 Standing open waters and canals habitat.

3.3.131 In the centre of the section, Loch nam Bonnach and a small lochan to the south of Urchany and Fairly Forest were noted as a r1 Standing open water and canals habitats.

3.3.132 Allt nam Damh was recorded as the only r1b Mesotrophic lakes habitat within Section E and the only Standing open water habitat in the south of the section.

#### Rivers and Streams

3.3.133 Rivers and streams are present in the north and south of Section E. The named watercourses Allt an Dubh, the River Conon, the River Orrin, and the River Beaully comprise r2a Rivers (priority habitat).