

# Appendix A11.2

## Designated Sites, Vegetation and Habitats

Transport Scotland

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# 1. Introduction

- 1.1.1. This technical appendix presents information concerning designated sites, ancient woodland, non-designated important habitat (e.g. Scottish Biodiversity List (SBL) habitats), and protected and priority plants (vascular plants and bryophytes). This information has been collated to inform the DMRB Stage 2 Assessment of the Proposed Scheme.
- 1.1.2. The information contained within this technical appendix has been collated from sources including:
- Desk based information, including information provided by consultees (e.g. Scottish Natural Heritage (SNH) and local biological records centres);
  - Previous ecological studies undertaken to inform the Proposed Scheme's environmental assessment, including a Preliminary Ecological Appraisal (PEA)<sup>i</sup> (a full copy of this report can be found in Annex B) undertaken by CH2M in 2014 for the 'North Scheme – Dalraddy – Moy' (which encompasses the Proposed Scheme); and
  - Field surveys undertaken by the Atkins Mouchel Joint Venture (AMJV) in 2016, including additional Phase 1 habitat survey (see Annex A) of proposed junctions / widening areas not included in the 2014 PEA<sup>ii</sup>.

# 2. Designated Sites

## 2.1. Methodology

### Desk Study

- 2.1.1. Information on designated sites has been collected from within the following search areas (the designated sites 'Study Area'):
- International sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA), and Wetlands of International Importance (Ramsar site)) – 10km from the Proposed Scheme;
  - Other statutory designated sites (e.g. Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR)) – 2km; and
  - Non-statutory designated sites – 1km (e.g. Local Wildlife Sites, Sites of Importance for Nature Conservation (SINCs)).
- 2.1.2. The location of designated sites within the Study Area is presented on Figure 11.1.
- 2.1.3. Information regarding the location of designated sites has been obtained from the following sources:
- Multi-Agency Geographic Information for the Countryside (MAGIC) website<sup>iii</sup>;
  - Scottish Natural Heritage 'SiteLink'<sup>iv</sup>;
  - Scottish Natural Heritage 'Interactive Map'<sup>v</sup>;
  - Highland Biological Recording Group (HBRG); and
  - North East Scotland Biological Records Centre (NESBreC).



2.1.4. Information describing the qualifying features or reasons for site notification and primary interest features were downloaded from the Joint Nature Conservation Committee (JNCC) website<sup>vi</sup>.

### Limitations

2.1.5. There were no limitations to the collection of designated sites data.

## 2.2. Results

### Desk Study

2.2.1. There are seven internationally designated sites present within the Study Area, comprising six SACs, seven SPAs, and one Ramsar site.

2.2.2. There are eight nationally designated sites present within the Study Area, comprising seven SSSIs and one NNR.

2.2.3. There are no LNRs or non-statutory designated sites located within the Study Area.

2.2.4. Table 2.1 and Table 2.2 present information on International and National designated sites collected during the desk study review. The locations of designated sites are presented on Figure 11.1.

**Table 2.1: International Statutory Designated Site Information**

Site Name	Designation	Distance and Orientation from Proposed Scheme Options	Closest Chainage	Summary of Qualifying Features
River Spey: UK0019811	SAC	0m within	Section 3a CH3500 Section 8 CH16600 and CH17400	Annex II species that are a primary reason for selection of this site: Freshwater pearl mussel ( <i>Margaritifera margaritifera</i> ) Sea lamprey ( <i>Petromyzon marinus</i> ) Atlantic salmon ( <i>Salmo salar</i> ) Otter ( <i>Lutra lutra</i> )
Slochd: UK0030347	SAC	240m to the north-east	Section 11 CH25600	Annex I habitat that is a primary reason for selection of this site: European dry heath.
Kinveachy Forest: UK0012759	SAC	604m to the west	Section 6b CH12000	Annex I habitat that is a primary reason for selection of this site: Caledonian forest. Annex I habitat present as a qualifying feature, but not a primary reason for selection of this site: Bog woodland.





Site Name	Designation	Distance and Orientation from Proposed Scheme Options	Closest Chainage	Summary of Qualifying Features
Cairngorms: UK0016412	SAC	957m to the east	Section 3a CH4300	<p>Annex I habitats that are a primary reason for selection of this site:</p> <p>Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i></p> <p>Northern Atlantic wet heaths with <i>Erica tetralix</i></p> <p>European dry heaths</p> <p>Alpine and boreal heaths</p> <p><i>Juniperus communis</i> formations on heaths or calcareous grasslands</p> <p>Siliceous alpine and boreal grasslands</p> <p>Species-rich <i>Nardus</i> grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)</p> <p>Blanket bogs</p> <p>Petrifying springs with tufa formation (<i>Cratoneurion</i>)</p> <p>Alpine pioneer formations of the <i>Caricion bicoloris-atrofuscae</i>.</p> <p>Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)</p> <p>Siliceous rocky slopes with chasmophytic vegetation</p> <p>Caledonian forest</p> <p>Bog woodland</p> <p>Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:</p> <p>Natural dystrophic lakes and ponds, sub-Arctic <i>Salix</i> spp. scrub, semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>)</p> <p>Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels</p>





Site Name	Designation	Distance and Orientation from Proposed Scheme Options	Closest Chainage	Summary of Qualifying Features
				<p>Transition mires and quaking bog and calcareous rocky slopes with chasmophytic vegetation.</p> <p>Annex II species that is a primary reason for selection of this site: Green shield-moss (<i>Buxbaumia viridis</i>)</p> <p>Annex II species present as a qualifying feature, but not a primary reason for site selection: Otter</p>
Insh Marshes: UK0019812	SAC	2.4km to the south	Section 1 CH0	<p>Annex I habitats that are a primary reason for selection of this site: Oligotrophic to mesotrophic standing waters with vegetation of the <i>Litorelletea uniflorae</i> and / or of the Isoeto-Nanojuncetea.</p> <p>Transition mires and quaking bogs</p> <p>Annex I habitat present as a qualifying feature, but not a primary reason for selection of this site: Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)</p> <p>Annex II species that are a primary reason for selection of this site: Otter</p>
Carn nan Trigtighearnan: UK0019791	SAC	8km to the north-east	Section 11 CH25700	<p>Annex I habitats that are a primary reason for selection of this site: Blanket bog</p>
Loch Vaa: UK9002751	SPA	76m to the east	Section 6a CH11500	The SPA qualifying species are breeding Slavonian grebe ( <i>Podiceps auritus</i> ).
Kinveachy Forest: UK9002581	SPA	605m to the west	Section 6b CH12000	SPA qualifying features include the capercaillie ( <i>Tetrao urogallus</i> ) and breeding Scottish crossbill ( <i>Loxia scotica</i> ).





Site Name	Designation	Distance and Orientation from Proposed Scheme Options	Closest Chainage	Summary of Qualifying Features
Cairngorms: UK9002241	SPA	957m to the south-east	Section 3a CH4300	The SPA qualifying features are breeding capercaillie, dotterel ( <i>Charadrius morinellus</i> ), golden eagle ( <i>Aquila chrysaetos</i> ), merlin ( <i>Falco columbarius</i> ), osprey ( <i>Pandion haliaetus</i> ), peregrine ( <i>Falco peregrinus</i> ) and Scottish crossbill.
River Spey – Insh Marshes: UK9002231	SPA	2.4km to the south	Section 1 CH0	The SPA supports populations of European importance of osprey, spotted crake ( <i>Porzana porzana</i> ), and wood sandpiper ( <i>Tringa glareola</i> ) during the breeding season and hen harrier ( <i>Circus cyaneus</i> ) and whooper swan ( <i>Cygnus cygnus</i> ) over winter.
Abernethy Forest: UK9002561	SPA	3.9km to the east	Section 6b CH12500	SPA qualifying features include breeding populations of capercaillie, osprey and Scottish crossbill.
Cairngorms Massif: UK9020308	SPA	4.9km to the south	Section 2 CH2900	A qualifying feature is breeding populations of golden eagle.
Craigmore Woods: UK9001801	SPA	9.5km to the east	Section 7 CH13700	SPA qualifying feature is breeding populations of capercaillie.
River Spey-Insh Marshes: UK13053	Ramsar site	2.4km to the south	Section 1 CH0	The site supports an assemblage of breeding birds indicative of high wetland value and diversity including population levels of whooper swan of international importance (an average of 1.7% of GB population in winter).

**Table 2.2: National Statutory Designated Site Information**

Site Name	Designation	Distance and orientation from Proposed Scheme Options and Section(s)	Closest Chainage	Summary of Reasons of Site Notification
Alvie Site Code 53	SSSI Part of site overlaps River	0m	Section 1 CH200, CH300,	Alvie SSSI is a large area of native woodland, open water and wetland habitats.





Site Name	Designation	Distance and orientation from Proposed Scheme Options and Section(s)	Closest Chainage	Summary of Reasons of Site Notification
	Spey SSSI & SAC		CH700 and CH1600	This site is important for the variety of scarce invertebrate species that it supports, including but not limited to the endangered net-winged caddis fly, a snail-killing fly, the aspen hoverfly, and a true fly <i>Microprosopa pallidicauda</i> which in Scotland has only been found in Strathspey. Loch Alvie is also an important breeding area for goldeneye ( <i>Bucephala clangula</i> ).
Craigellachie Site Code 428	SSSI & NNR	0m	Sections 3a CH4300 and CH5000	Craigellachie is a large birch ( <i>Betula</i> spp.) wood located on the western edge of Aviemore. The site is notified for the upland birch woodland which is one of the largest in Strathspey, and for its invertebrate interest, specifically moths.
Kinveachy Forest Site Code 864	SSSI Parts of this SSSI are also designated as Kinveachy Forest SAC & SPA. Part of River Spey SAC passes through this SSSI	605m to the west	Section 6b CH12000	The pinewoods of Kinveachy Forest are one of the major remnants of Caledonian pine forest in Strathspey. Kinveachy Forest has dense stands of mature woodland separated by open moorland with scattered trees. The woodland to the south of the River Dulnain is dominated by Scots pine ( <i>Pinus sylvestris</i> ), while on the north side there are also areas of broadleaved woodland dominated by birch and alder ( <i>Alnus glutinosa</i> ). Wetter ground has bog woodland with scattered, stunted Scots pine. Juniper ( <i>Juniperus communis</i> ) scrub is extensive in places. The extensive forests support a characteristic pinewood breeding bird





Site Name	Designation	Distance and orientation from Proposed Scheme Options and Section(s)	Closest Chainage	Summary of Reasons of Site Notification
				assemblage which includes capercaillie, Scottish crossbill, and crested tit ( <i>Lophophanes cristatus</i> ).
Loch Vaa Site Code 1065	SSSI Also designated as Loch Vaa SPA	76m to the east	Section 6a CH11500	<p>Loch Vaa is a small, nutrient poor (oligotrophic) spring-fed loch in Strathspey. It is important as a breeding site for two nationally rare bird species, Slavonian grebe and goldeneye.</p> <p>The loch is surrounded by birch woodland to the south and Scots pine plantation to the north that is important breeding habitat for goldeneye.</p> <p>The marshy areas and the small ephemeral pools around the loch support a diverse assemblage of aquatic beetles including nationally scarce and notable species such as <i>Berosus luridus</i>, <i>Hydrochus brevis</i>, <i>Cyphon punctipennis</i> and <i>Agabus labiatus</i>.</p>
North Rothiemurchus Pinewood Site Code 1241	SSSI Part of Cairngorms SAC & SPA. Part of SSSI overlaps with River Spey SAC	957m to the south-east	Section 3a CH4300	<p>The site contains Britain's second largest area of Caledonian forest including ancient and recently established woodland, juniper scrub, dry and wet heath, areas of bog woodland and clear water lochs.</p> <p>The site has also been notified for its breeding bird assemblage and specifically for its breeding populations of capercaillie, crested tit, Scottish crossbill and osprey.</p> <p>The site is also designated for its assemblages of invertebrates, lichens, fungi, and vascular plants.</p>





Site Name	Designation	Distance and orientation from Proposed Scheme Options and Section(s)	Closest Chainage	Summary of Reasons of Site Notification
River Spey Site Code 1699	SSSI; Adjoins the River Spey - Insh Marshes SSSI and overlaps part of Alvie SSSI. Overlaps part of River Spey SAC	125m to the south-east	Section 3a CH3500	The River Spey has a variety of freshwater and riparian habitats including beds of shingle, gravel, sand and silt, islands, fringing woodlands and marshes. These habitats support important populations of Atlantic salmon, sea lamprey, freshwater pearl mussel and otter.
River Spey- Insh Marshes Site Code 1364	SSSI; Also designated as Insh Marshes SAC and part of River Spey SAC & River Spey-Insh Marshes SPA	2.4km to the south	Section 1 CHO	<p>River Spey - Insh Marshes SSSI is an internationally important wetland site. The aquatic and marsh vegetation of the site is of exceptional interest and supports a range of vascular plants and invertebrates associated with these habitats. The site is particularly noted for its breeding and migrant birds and populations of otter and Arctic charr (<i>Salvelinus alpinus</i>).</p> <p>One of the most important features of this area is the rich assemblage of breeding birds, including osprey, rare ducks such as wigeon (<i>Anas Penelope</i>), shoveler (<i>Anas clypeata</i>) and goldeneye and a major concentration of breeding waders such as redshank (<i>Tringa totanus</i>), common snipe (<i>Gallinago gallinago</i>) and Eurasian curlew (<i>Numenius arquata</i>). During the winter the fens are used by up to 200 migrant whooper swans.</p> <p>This is the best site in Scotland for rare wetland invertebrates but also has an outstanding fauna associated with riverine habitats and woodland. The area is exceptionally important for its population</p>





Site Name	Designation	Distance and orientation from Proposed Scheme Options and Section(s)	Closest Chainage	Summary of Reasons of Site Notification
				of European otter, providing a network of undisturbed ditches and water bodies with extensive linear connectivity via the River Spey.

## 2.3. Scope of DMRB Stage 3 Assessment

- 2.3.1. Where adverse effects to designated sites are likely, further survey will be undertaken to determine the character of the habitat being affected and whether any protected species are present or likely to be affected. Where sites are designated for habitats or protected / notable plant species, National Vegetation Classification (NVC) surveys will be undertaken to identify whether vegetation communities identified as qualifying features or the reasons for the designation of a site are likely to be affected. Targeted searches for protected and / or notable plant species will also be undertaken as appropriate (see Section 5 and 6 for further detail).
- 2.3.2. With regards sites designated for their habitats and flora interest, adverse effects are considered most likely to sites which fall within 250m of the Proposed Scheme<sup>vii</sup>. Therefore, further survey is considered most likely for four of the 22 designated sites including Slochd SAC, the River Spey SAC / SSSI, Loch Alvie SSSI, and Craigellachie SSSI / NNR.
- 2.3.3. In addition, the potential for the Proposed Scheme to have likely significant effects on internationally designated sites (SAC, SPA and Ramsar sites) will be considered further through the Habitats Regulations Appraisal process.
- 2.3.4. For those sites which are designated for birds and other animal species and associated habitats, further surveys will be undertaken as appropriate. Refer to the Appendix A11.4 Protected Species and Appendix A11.5 Birds for further detail on the scope of these surveys.

## 3. Ancient Woodland

### 3.1. Methodology

- 3.1.1. All areas of ancient woodland within 250m of the Proposed Scheme Options were identified (the 'Study Area'); these are shown on Figure 11.2. This Study Area for ancient woodland was defined to include land in which direct effects (such as habitat loss) and indirect effects (such as degradation due to aerial pollutants) on ancient woodland are most likely to occur.





## Desk study

- 3.1.2. Scottish Natural Heritage's Ancient Woodland Inventory<sup>viii</sup> was reviewed to identify known areas of ancient woodland within the Study Area. This inventory holds information on the location and extent of ancient woodland within Scotland, and categorises each stand as follows:
- **Ancient Woodland (1a and 2a)** - Interpreted as semi-natural woodland from maps of 1750 (1a) or 1860 (2a) and continuously wooded to the present day. If planted with non-native species during the 20th century they are referred to as Plantations on Ancient Woodland Sites (PAWS);
  - **Long-established woodlands of plantation origin (LEPO) (1b and 2b)** - Interpreted as plantation from maps of 1750 (1b) or 1860 (2b) and continuously wooded since. Many of these sites have developed semi-natural characteristics, especially the oldest ones, which may be as rich as Ancient Woodland; and
  - **Other woodlands on Roy maps (3)** - Shown as un-wooded on the 1st Edition of the Ordnance Survey maps (produced in circa 1850) maps but as woodland on the Roy maps (produced in circa 1750). Such sites have, at most, had only a short break in continuity of woodland cover and may still retain features of Ancient Woodland.
- 3.1.3. The location and distribution of ancient woodland was considered alongside the Phase 1 habitat data collected for the Proposed Scheme in 2014<sup>ii</sup> and in 2016 (see Annex A of this report) to identify inconsistencies between the ancient woodland boundaries provided by SNH and the Phase 1 mapping (e.g. where a recorded ancient woodland site might exist on an area more recently confirmed as 'grassland' by the Phase 1 habitat survey).

## Field survey

- 3.1.4. A targeted field survey of ancient woodland sites with the potential to be directly affected by the Proposed Scheme (those within the footprint of the Proposed Scheme Options) was undertaken in April 2016 by AMJV, the aim of which was to assess the 'naturalness' of the ancient woodland sites within the Proposed Scheme Options footprint. Naturalness was assessed by recording the species and approximate age of the dominant trees, and the species and floristic diversity of the ground flora.

## Limitations

- 3.1.5. No limitations to the ancient woodland assessment were encountered.

## 3.2. Results

### Desk Study

- 3.2.1. The ancient woodland sites within the Study Area identified on the SNH Ancient Woodland Inventory are presented in Table 3.1 and Figure 11.2. For each woodland block the table includes an identifier (ID Area), location information (including co-ordinates at the closest point to the Proposed Scheme), and a description of the Phase 1 habitat type recorded in 2014 (where applicable).
- 3.2.2. Those sites which are within the footprint of the Proposed Scheme Options corridor have been highlighted in light blue.





**Table 3.1: Ancient Woodland stands within 250m of the Proposed Scheme (ID Areas which are within the Proposed Scheme Option footprint are highlighted in 'light blue').**

ID Area	Category	Co-ordinates	Location	Section	Phase 1 Classifications
1	1a Ancient	285167, 809098	At southern end of scheme, west of A9. Within 250m buffer of Proposed Scheme Options of main road.	Section 1	Outside Phase 1 area. Mapped as mixed woodland on OS mapping.
2	2a Ancient	285501, 809349	East and west of A9. Beneath Proposed Scheme Options for approximately 0.4km.	Section 1	Marked as a mosaic of mixed plantation, coniferous plantation, semi-improved neutral grassland and continuous bracken on Phase 1 mapping.
3	2a Ancient	286612, 810065	East and west of A9, north of Loch Alvie. Beneath Proposed Scheme Options for approximately 0.1km.	Section 1	Marked as a mosaic of broad-leaved semi-natural woodland, mixed plantation, coniferous plantation, semi-improved neutral grassland, acid grassland and continuous bracken on Phase 1 mapping.
4	1a Ancient	286689, 809979	East of A9, north of Loch Alvie. Within 100m buffer of Proposed Scheme Options of main road.	Section 1	Marked as broad-leaved semi-natural woodland on Phase 1 mapping.
5	2a Ancient	286821, 809910	East of A9, north of Loch Alvie. Within 250m buffer of Proposed Scheme Options of main road.	Section 1	Outside Phase 1 area. Mapped as broad-leaved woodland on OS mapping.
6	2a Ancient	286918, 810199	East and west of A9, north of Loch Alvie. Beneath Proposed Scheme Options of main road for approximately 0.1km.	Section 1	Marked as a mosaic of broad-leaved semi-natural woodland, mixed plantation, coniferous plantation, semi-improved neutral grassland, poor semi-improved neutral grassland, amenity grassland and continuous bracken on Phase 1 mapping.
7	1a Ancient	287833, 810402	Beneath Proposed Scheme Options of main road for approximately 0.1km.	Section 2	Marked as a mosaic of broad-leaved semi-natural woodland, parkland/scattered trees-broad-leaved, semi-improved neutral grassland, calcareous grassland and





ID Area	Category	Co-ordinates	Location	Section	Phase 1 Classifications
					continuous bracken on Phase 1 mapping.
8	2a Ancient	287608, 810196	Beneath Proposed Scheme Options.	Section 2	Marked as individual broad-leaved trees over semi-improved neutral grassland on Phase 1 mapping.
9	2a Ancient	287909, 210797	Beneath Proposed Scheme Options, centred on.	Section 2	Marked as broad-leaved semi-natural woodland on Phase 1 mapping.
10	3 Other	288256, 810278	East of A9. Within 250m buffer of Proposed Scheme Options of main road.	Section 2	Outside Phase 1 area. Mapped as mixed woodland on OS mapping.
11	2a Ancient	288636, 810486	East of A9, east of River Spey. Within 250m buffer of Proposed Scheme Options of main road.	Section 3a	Outside Phase 1 area. Mapped as mixed woodland on OS mapping.
12	2a Ancient	288592, 810760	West of A9. Small section beneath Proposed Scheme Options.	Section 3a	Marked as a mosaic of broad-leaved semi-natural woodland, semi-improved neutral grassland, dry dwarf shrub heath, acid/neutral scree and continuous bracken on Phase 1 mapping.
13	1a Ancient	288981, 811106	West of A9. Two small sections beneath Proposed Scheme Options.	Section 3a	Mostly broad-leaved semi-natural woodland but with smaller amounts of dry dwarf shrub heath, semi-improved neutral grassland, mixed semi-natural woodland, individual trees-broad-leaved and coniferous and continuous bracken on Phase 1 mapping.
14	1a Ancient	289168, 812039	East of A9. Small section beneath Proposed Scheme Options.	Section 3a	Mostly broad-leaved semi-natural woodland with small amount of amenity grassland on Phase 1 mapping. Caravan park.
15	2a Ancient	289439, 814455	East of A9. Small section beneath Proposed Scheme Options.	Section 4	Marked as coniferous plantation woodland on Phase 1 mapping.
16	3 Other	289603, 814628	West of A9. Small section beneath	Section 4	Mostly broad-leaved semi-natural woodland but with smaller amounts of wet dwarf shrub heath, semi-



ID Area	Category	Co-ordinates	Location	Section	Phase 1 Classifications
			Proposed Scheme Options.		improved neutral grassland, individual trees-broad-leaved, marshy grassland and continuous bracken on Phase 1 mapping.
17	3 Other	289886, 815123	East of A9. Small section beneath Proposed Scheme Options.	Section 5	Marked as broad-leaved semi-natural woodland on Phase 1 mapping.
18	3 Other	290032, 815523	East of A9. Beneath Proposed Scheme Options for approximately 0.25km.	Section 5	Mostly broad-leaved semi-natural woodland but with smaller amounts of semi-improved neutral grassland and dry heath/acid grassland mosaic on Phase 1 mapping.
19	1a Ancient	290263, 814433	East of A9. Within 250m buffer of Proposed Scheme Options of main road.	Section 5	Outside Phase 1 area. Mapped as broad-leaved woodland and heathland/grassland on OS mapping.
20	2a Ancient	290168, 816032	East and west of A9. Beneath Proposed Scheme Options for approximately 0.6km.	Section 5	Mostly coniferous plantation woodland with a thin strip of broad-leaved semi-natural woodland, with smaller amounts of semi-improved neutral grassland, acid grassland, wet dwarf shrub heath, lines of scattered scrub and tall herb & fern on Phase 1 mapping.
21	1a Ancient	290195, 816322	East of A9. Beneath Proposed Scheme Options for approximately 0.25km.	Section 5	Mostly coniferous plantation woodland with a thin strip of broad-leaved semi-natural woodland and some semi-improved neutral grassland on Phase 1 mapping.
22	2a Ancient	290518, 817064	West of A9. Small section beneath Proposed Scheme Options.	Section 6a	Mostly broad-leaved semi-natural woodland but with smaller amounts of coniferous plantation woodland, acid grassland, continuous bracken and acid/neutral scree on Phase 1 mapping.
23	1a Ancient	290903, 817663	West of A9. Small section beneath Proposed Scheme Options.	Section 6a	Mostly broad-leaved semi-natural woodland but with smaller amounts of dry dwarf shrub heath and acid grassland on Phase 1 mapping.
24	1a Ancient	291034, 817250	East of A9. Within 250m buffer of Proposed	Section 6a	Outside Phase 1 area. Mapped as broad-leaved woodland on OS mapping



ID Area	Category	Co-ordinates	Location	Section	Phase 1 Classifications
			Scheme Options of main road. West of Loch Vaa.		
25	2b Long-Established	291088, 817627	East of A9. Within 250m buffer of Proposed Scheme Options of main road. West of Loch Vaa.	Section 6a	Marked as broad-leaved semi-natural woodland and coniferous semi-natural woodland on Phase 1 mapping.
26	2a Ancient	290693, 817996	West of A9. Within 250m buffer of Proposed Scheme Options of main road.	Section 6a	Outside Phase 1 area. Mapped as coniferous woodland on OS mapping.
27	2b Long-Established	291062, 818182	East of A9. Small section within 50m buffer of Proposed Scheme Options of main road.	Section 6b	Mostly broad-leaved semi-natural woodland with acid grassland clearings on Phase 1 mapping.
28	2a Ancient	291008, 818703	West of A9. Within Proposed Scheme Options footprint.	Section 6b	Mostly broad-leaved semi-natural woodland but with smaller amounts of coniferous semi-natural woodland, semi-improved neutral grassland and marshy grassland on Phase 1 mapping.
29	2a Ancient	290893, 820334	East and west of A9. Beneath Proposed Scheme Options for approximately 1.2km.	Section 7	Mostly coniferous plantation woodland with small amounts of broad-leaved semi-natural woodland, coniferous semi-natural woodland, mixed semi-natural woodland, semi-improved neutral grassland, dry dwarf shrub heath, acid grassland and marshy grassland on Phase 1 mapping.
30	1a Ancient	290503, 821371	East and west of A9. Beneath Proposed Scheme Options for approximately 1.1km.	Section 7	Mostly coniferous plantation woodland with small amounts of coniferous semi-natural woodland, dry dwarf shrub heath, wet modified bog and marshy grassland on Phase 1 mapping.
31	2a Ancient	290028, 822176	East and west of A9. Beneath Proposed Scheme Options	Section 7	Mostly coniferous plantation woodland with small amounts of broad-leaved semi-natural woodland,



ID Area	Category	Co-ordinates	Location	Section	Phase 1 Classifications
			of main road for approximately 0.9km.		semi-improved neutral grassland, dry dwarf shrub heath, acid grassland, marshy grassland and dense continuous scrub on Phase 1 mapping.
32	3 Other	289304, 822933	East and west of A9. Beneath Proposed Scheme Options for approximately 0.25km.	Section 8	Mosaic of coniferous plantation woodland, coniferous semi-natural woodland, broad-leaved semi-natural woodland, semi-improved neutral grassland, dry dwarf shrub heath, acid grassland, marshy grassland and dense continuous scrub on Phase 1 mapping.
33	1a Ancient	289008; 823974	East of A9. Within 250m buffer of Proposed Scheme Options.	Section 9	Outside Phase 1 area. Mapped as coniferous woodland on OS mapping.
34	3 Other	288530, 823826	East and west of A9. Beneath Proposed Scheme Options for approximately 1.6km.	Section 9	Mostly coniferous plantation woodland with dry dwarf shrub heath fire-breaks and small amounts of coniferous semi-natural woodland, broad-leaved semi-natural woodland and acid grassland on Phase 1 mapping.
35	2a Ancient	287717, 824151	North of A9. Beneath Proposed Scheme Options.	Section 9	Marked as broad-leaved semi-natural woodland and coniferous plantation woodland on Phase 1 mapping.
36	2a Ancient	284635, 823765	South of A9. Small section within 250m buffer of Proposed Scheme Options.	Section 10	Outside Phase 1 area. Mapped as mixed woodland on OS mapping.
37	2a Ancient	284575, 824132	West of A9. Small section beneath Proposed Scheme Options of main road.	Section 10	Mostly broad-leaved semi-natural woodland with some semi-improved neutral grassland on Phase 1 mapping.
38	2a Ancient	284266, 824578	West of A9. Small section beneath Proposed Scheme Options of main road.	Section 10	Mostly broad-leaved semi-natural woodland with some dry dwarf shrub heath and acid grassland on Phase 1 mapping.



## Field survey

- 3.2.3. Of the 38 woodland stands within the Study Area, 25 are within the Proposed Scheme Options footprint (see Table 3.1). This includes 20 stands that are classified as Ancient (1a or 2a) and five that are shown as woodlands on the Roy maps (3).
- 3.2.4. The majority of the 20 Ancient (1a or 2a) stands are wooded, comprising semi-natural broad-leaved woodland (predominantly birch) and coniferous plantation woodland (predominantly Scots pine. However, many of these stands do not exhibit the classic features associated with ancient woodland (very old, mature trees, well developed and diverse understorey and ground-flora). Many support semi-mature to mature plantation or broad-leaved woodland with a relatively species-poor understorey and ground layer. There are a few stands which are an exception to this; ID Area 14 for example retains some ancient woodland features and has potential for regeneration. A number of areas classified as ancient woodland on the SNH Ancient Woodland Inventory are not woodland, instead comprising heathland, grassland, or bare ground (highlighted in light blue in Table 3.2).
- 3.2.5. Table 3.2 presents the results of the field survey, with the location of the woodland blocks and associated target notes presented on Figure 11.2.

**Table 3.2: Ancient Woodland Field Survey Results (areas which do not currently support woodland are highlighted in 'light blue').**

ID No.	Target Note (TN)	Phase 1 Habitat Code	Description / Notes
3	AW70	B2.2	Area of neutral grassland.
	AW71	A1.3.2	Area of mixed plantation woodland.
	AW72	D1.1/B1.1	Heavily grazed and very species poor dry heath.
	AW73	A1.2.2	Part of an ancient woodland polygon. Woodland is a conifer shelter belt along the A9. Field layer is moss dominated.
	AW74	A1.1.1	Birch woodland over a heavily grazed grass sward. Part of an ancient woodland polygon.
	AW75	A1.1.1	Birch woodland over a heavily grazed grass sward. Part of an ancient woodland polygon.
	AW76	A1.3.2	Area of mixed woodland over a heavily grazed grass sward. Part of an ancient woodland polygon.
6	AW65	B6	Area of poor semi-improved grassland.
	AW66	A1.3.2	Area of mixed woodland over a heavily grazed grass sward. Part of an ancient woodland polygon.
	AW67	A1.1.1	Birch woodland over a heavily grazed grass sward. Part of an ancient woodland polygon.
7	AW62	B4	Area of improved grassland - no native woodland present.
	AW63	A1.1.1	Native woodland present. Very heavily grazed - no regeneration.
	AW64	J4	Area of bare ground.
8	AW68	A3.1	Area of parkland with scattered mature birch trees, likely remnant of ancient woodland.





ID No.	Target Note (TN)	Phase 1 Habitat Code	Description / Notes
9	AW69	A1.1.1	Area of mature birch woodland, likely ancient woodland. Heavily grazed ground flora (semi-improved grassland) with little sign of regeneration.
12	AW60	A1.1.1	Area of birch woodland with relatively heavy grazing. Woodland is thinning out at height.
	AW61	A1.1.1	Area of birch woodland with relatively heavy grazing. Woodland is thinning out at height.
13	AW59	A1.1.1	Area of birch woodland with relatively heavy grazing. Woodland is thinning out at height.
14	AW53	A1.1.1	Part of an ancient woodland polygon, the trees are more mature with a well-developed field layer dominated by sub-shrubs.
	AW54	A1.1.1	Within ancient woodland polygon. Birch semi-natural woodland adjacent to the Craigellachie NNR. The ground flora is dominated by pleurocarpous mosses and acid grass species with occasional ericoids including cowberry and heather. The age structure here suggests there is potential for natural regeneration, most likely due to the deer fencing which has suppressed the browsing rate. There are several older birch trees and standing and fallen deadwood.
	AW55	A1.1.1	Small part of an ancient woodland polygon beside the A9. Field layer is dominated by mosses.
15	AW52	A1.2.2	Within ancient woodland polygon. Species-poor conifer plantation, dominated by Scots pine with no woody sub-shrub species and a ground flora dominated by mosses and heather.
16	AW48	D1.1	Within ancient woodland polygon. Area of dry acid heath, dominated by heather and pleurocarpous mosses which is classified as wet dwarf shrub heath in 2014 survey. No evidence of ancient woodland or remnant specimen ancient trees.
	AW49	A1.1.1	Within ancient woodland polygon, semi-natural birch woodland. Understorey layer lacks woody species or young trees, showing little potential for natural regeneration. The ground layer is dominated by mosses and acid grasses.
	AW51	B5	Within ancient woodland polygon. Marshy grassland within cattle field. No trees, nor ancient woodland remnants here.
17	AW50	A1.1.1	Part of an ancient woodland polygon. Canopy is solely birch over a field layer of slightly acidic grasses and pleurocarpous mosses. There are a number of young birch also present, particularly closest to the A9 carriageway.
18	AW46	A1.1.1	Area of birch woodland within part of an ancient woodland polygon. Between the A9 and the fence line there are some young birch regenerating and mosses dominate the ground flora. However, in the larger woodland area that is not excluded from grazing there is no under-scrub layer and mature birch dominate. Grazing here has reduced the age diversity of the woodland and the field layer is well grazed with patches of heather and more grasses present.
	AW47	A1.1.1	10m strip of semi-natural birchwood, but not ancient (behind fence line).





ID No.	Target Note (TN)	Phase 1 Habitat Code	Description / Notes
20	AW44	A1.3.1	Strip of semi-natural birch woodland by road verge, falls within part of an ancient woodland polygon.
	AW45	D1.1	Within ancient woodland polygon. Dry heath ground flora, dominated by heather with mossy ground layer. There is no woodland here, although scattered Scots pine are present along the road-verge and young scrubby Scots pine and birch are present with broom within the dry heath. No specimen trees or evidence of ancient woodland.
21	AW39	A1.2.2	Within ancient woodland polygon. Homogenous stand of conifer plantation, dominated by Scots pine with occasional birch in understorey. Limited light penetration through the dense conifers, rendering the ground flora mainly composed of mosses and bracken. No evidence of ancient woodland.
	AW43	D1.1	Within ancient woodland polygon. Vegetation community is dry acid heath overtopped in places by scattered broom scrub. No evidence of ancient woodland or ancient specimen trees. The adjacent conifer plantation is mature, but not ancient and is of plantation origin.
22	AW40	A1.1.1	Within ancient woodland polygon. The woodland here is on steeply sloping ground, with many mature birch trees fallen and lying as deadwood. Occasional old, specimen Scots pine trees are present in this area which is more developed than the neighbouring pines in the conifer plantation area. The ground flora is moss-dominated and the understorey lacks young trees or signs of natural regeneration potential. Juniper scrub and bracken are the main understorey species.
	AW41	B1.2/ A1.1.1	Within ancient woodland polygon, acid grassland on steeply sloping ground. Several old specimen birch trees with widespread fallen trees and lying deadwood on the steep slopes. No woody species other than birch and a grassy ground flora.
	AW42	A1.3.1	Within ancient woodland polygon. Semi-natural mixed woodland with canopy species including Scots pine, birch, and larch ( <i>Larix</i> sp.) is present at very low frequency. The woodland area to the west is conifer plantation. Heathy ground flora including acid grasses and shrub species including juniper, heather and bilberry. Evidence of browsing by deer and widespread deer dung. There is little evidence of natural regeneration and a rare occurrence of specimen ancient pine trees.
23	AW38	B1.2/ A1.1.1	Within Ancient Woodland polygon, acid grassland along the electricity pylon wayleave adjacent to the A9 carriageway. A thin strip of birch / Scots pine shelterbelt is adjacent to the east which has a heathy/mossy ground flora. The remainder of the ancient woodland polygon is comprised of semi-natural broadleaved woodland which has no remnant ancient stands. The canopy is open with a lack of woody sub-shrub species and a grassy ground flora. Evidence of heavy browsing (e.g. grazed shoots, bark stripping) and a general lack of regeneration or balanced age structure. No ancient woodland features noted.
28	AW36	A1.2.1	Within ancient woodland polygon. Scots pine in small area of semi-natural woodland which has a thick understorey of





ID No.	Target Note (TN)	Phase 1 Habitat Code	Description / Notes
			bracken and very few mature trees. No ancient woodland features noted.
	AW37	A1.1.1	Within ancient woodland polygon, semi-natural birch woodland. Understorey layer comprised of juniper and bracken with a field layer dominated by mosses and acid grasses.
29	AW30	A1.2.2	Scots pine plantation within ancient woodland polygon.
	AW31	A1.2.2	Scots pine plantation within ancient woodland polygon.
	AW32	A1.2.2	Scots pine plantation within ancient woodland polygon.
	AW33	A1.2.2	Scots pine plantation within plantation within ancient woodland polygon.
	AW34	A1.2.2	Scots pine plantation within ancient woodland polygon.
	AW35	A1.1.1	Scots pine plantation within ancient woodland polygon.
30	AW22	B1.1	Area of unimproved acid grassland.
	AW23	B5	Area of marshy grassland.
	AW24	A1.2.2	Young Scots pine plantation within ancient woodland polygon.
	AW25	D1.1/B1.1	Area of dry heath / acid grassland mosaic.
	AW26	D1.1/B1.1	Area of dry heath / acid grassland mosaic.
	AW27	A3.2	Area of semi-improved calcareous grassland.
	AW28	A3.2	Area of semi-improved calcareous grassland.
	AW29	B5	Area of marsh / marshy grassland.
31	AW15	A1.1.1	Embankment by road with immature birch and occasional Scots pine and beech ( <i>Fagus sylvatica</i> ).
	AW16	A1.2.2	Conifer plantation within the ancient woodland polygon.
	AW17	A2.1	Embankment of dense broom, no woodland.
	AW18	A2.1	Embankment of dense broom, no woodland.
	AW19	A2.1	Embankment of dense broom, no woodland.
	AW20	A2.1	Embankment of dense broom, no woodland.
	AW21	A2.1	Embankment of dense broom, no woodland.
32	AW11	A2.1	Embankment of dense broom, no woodland.
	AW12	A2.1	Embankment of dense broom, no woodland.
	AW13	A1.3.1	Small patch within ancient woodland polygon of young birch and Scots pine by road.
	AW14	A1.1.1	Scots pine plantation within ancient woodland polygon.
34	AW03	A1.1.1	Possible ancient woodland remnant.
	AW06	D1.1	Within ancient woodland polygon. The ground flora here is dry heath, dominated by heather ( <i>Calluna vulgaris</i> ), cowberry ( <i>Vaccinium vitis-idaea</i> ) and mosses, overtopped by scattered young Scots pine and birch. All trees here are of plantation origin and no specimen ancient trees are present.





ID No.	Target Note (TN)	Phase 1 Habitat Code	Description / Notes
	AW07	A1.3.1	Strip of road verge trees that fall within an ancient woodland polygon. Birch with frequent and younger self-sown Scots pine.
	AW08	A1.1.1	Part of an ancient woodland polygon. Small strip of birch (young and mature) on outer edge of conifer plantation and between roads. Quite sparse canopy with abundant broom in the scrub layer.
	AW09	A1.3.2	An area of mixed plantation woodland.
35	AW02	A1.2.2	Within ancient woodland polygon, Scots pine plantation. No other woody species and no understorey layer. Field layer dominated by mosses with some sub-shrubs.
37	AW05	A1.1.1	Area of dense immature birch. No other woody species present.
38	AW01	A1.1.1	Area of semi-natural broad-leaved birch woodland with features of ancient woodland.

### 3.3. Scope of DMRB Stage 3 Assessment

- 3.3.1. There are 25 ancient woodland stands within the Proposed Scheme Options which have the potential to be directly affected by the Proposed Scheme. Most of the stands are wooded, predominantly comprising either semi-natural birch woodland or Scots pine plantation woodland, although in most cases they do not exhibit characteristics associated with ancient woodland such as old trees and a well-developed ground flora. Areas identified as ancient woodland on the SNH Ancient Woodland Inventory that do not support woodland have been recorded during the field survey, including stands 3, 6, 7, 16, 20, 21, 22, 23, 30, 31, 32, and 34.
- 3.3.2. In addition, there are 13 ancient woodland stands not within the Proposed Scheme Options footprint but within 250m which may receive indirect effects during construction and operation of the Proposed Scheme.
- 3.3.3. Further survey at DMRB Stage 3 Assessment will be undertaken to gather additional information on the quality of the ancient woodland likely to be affected by the Proposed Scheme. This will include NVC surveys to classify the vegetation communities within each woodland block. Surveys will cover 250m from the Proposed Scheme footprint, where direct loss and indirect effects are most likely to occur.

## 4. Priority Habitats and Groundwater Dependent Terrestrial Ecosystems

### 4.1. Methodology

- 4.1.1. The location and extent of important habitats that are outside of designated sites or areas identified on the Ancient Woodland Inventory, were identified within an area including the Proposed Scheme Options and land extending to 100m from its boundary (the 'Study Area'). This includes areas of habitat within the Study Area which may qualify as Annex I habitat on Council Directive 92/43/EEC (the 'Habitats Directive'), SBL Priority Habitat, and / or areas of habitat which would qualify as Groundwater Dependent





Terrestrial Ecosystems (GWDTE) in accordance with the European Water Framework Directive (WFD).

### Desk study

4.1.2. The following sources were investigated to identify areas of important habitat within the Study Area:

- Existing Phase 1 habitat survey information collected for the Proposed Scheme in 2014 and 2016 (see relevant section below and Annex A of this report);
- A list of Annex I Habitats (listed on Habitats Directive) which occur in Scotland, sourced from the SNH website<sup>ix</sup>;
- Descriptions of Annex I habitat types, provided by the Joint Nature Conservation Council (JNCC)<sup>x</sup>; and,
- The SBL, which contains information on Priority Habitats of conservation concern in Scotland;
- Guidance provided by the Scottish Environment Protection Agency (SEPA) on identifying GWDTEs likely to be affected by development<sup>xi</sup>.

4.1.3. The above information was used to identify habitats within the Study Area that are likely to fulfil the requirements to qualify as Annex I habitat, SBL Priority Habitat, or GWDTE.

### Limitations

4.1.4. No limitations to the Priority Habitat assessment were encountered.

## 4.2. Results

### Desk Study

#### *Summary of the Phase 1 habitat survey*

4.2.1. A summary of the results of the Phase 1 habitat survey undertaken in 2014 and 2016 is presented in Table 4.1 Main Habitats within 100m of the Proposed Scheme Options. This includes the area (hectares) of each habitat type and its percentage cover within the Study Area. The distribution of these habitat within the Study Area is presented on Figure 11.3.

4.2.2. The nature conservation value has been given, this is accordance with the methodology detailed in Section 11.2.18 of Chapter 11.

4.2.3. The summary provided below should be read in conjunction with the 2014 PEA<sup>xii</sup> and Annex A of this Appendix. These documents provide additional detail on the character of the habitats and provide reference to the Target Notes presented on Figure 11.3.

**Table 4.1 Main Habitats within 100m of the Proposed Scheme Options**

Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
Acid dry dwarf shrub heath	95.11	12.02	County	The dry dwarf shrub heath within the Study Area supports communities





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				<p>which are likely to qualify as Annex I habitat, and which are listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan.</p> <p>This habitat is of a quality and extent which is likely to be of value within the context of the County.</p>
Acid neutral flush	0.99	0.13	County	<p>Acid / neutral flush habitat generally occurs within a mosaic of wet heath, bog, and acid grassland. Although limited in extent these areas are likely to qualify as Annex I habitat, and are listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan. These areas may also support GWDTEs.</p> <p>This habitat type is potentially of ecological importance within the context of the County.</p>
Acid/neutral exposure	3.61	0.46	Local	<p>Acid / neutral exposures across the Study Area are generally of limited extent and support a relatively low diversity of plant species. Although this habitat type is listed on the SBL, the example within the Study Area is unlikely to be notable outside of the local context.</p>
Amenity grassland	10.91	1.38	Site	<p>This habitat type is the result of intensive management resulting in a very low floristic diversity and limited intrinsic biodiversity value. It is not notable outside of the context of the site.</p>
Bare ground	13.97	1.77	Site	<p>This habitat type has limited intrinsic ecological value and is not notable outside of the context of the site.</p>
Bare peat	0.35	0.04	Local	<p>Areas of bare peat occur within modified bog habitat.</p>





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				These areas may support certain plants specific to this habitat type, although the habitat within the Study Area is not of an extent which is notable outside of the local area.
Basin mire fen	0.08	0.01	Local	Basin mire habitat is limited in extent and occurs in association with broad-leaved semi-natural woodland. These areas are likely to qualify as Annex I habitat, and are listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan. These areas may also support GWDTEs.  Given the limited extent of this habitat, it is potentially of ecological importance within the Local context.
Blanket bog	1.43	0.18	Local	Areas of blanket bog are likely to qualify as Annex I habitat, and are listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan. These areas may also support GWDTEs.  The blanket bog within the Study Area is however of a relatively limited extent, and is unlikely to be notable outside of the context of the local area.
Broad-leaved plantation woodland	1.40	0.18	Site	The broad-leaved plantation woodland within the Study Area is comprised of common species which are not of a notable age. It is of a relatively limited extent and is unlikely to be notable outside of the site.
Broad-leaved semi-natural woodland	174.06	21.99	Regional	The semi-natural broad-leaved woodland within the Study Area supports vegetation communities which are likely to qualify as Annex I habitat, and which are listed on the





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Actions Plan. This habitat may also support GWDTEs.  The woodland is of a quality and extent that is notable within the region, particularly as the majority of the woodland within the region is coniferous plantation woodland.
Building	3.39	0.43	Site	This habitat type has limited intrinsic ecological value and is not notable outside of the context of the site.
Coniferous plantation woodland	175.71	21.20	Local	Coniferous plantation woodland is listed as a Priority Habitat on the Cairngorms Nature Action Plan. This habitat type is common within the local area, the county and the region, with the plantation woodland within the Study Area generally not being of a notable age or floristic diversity. It is therefore assessed of being of importance at the Local scale.
Coniferous semi-natural woodland	10.45	1.32	Local	The majority of the semi-natural coniferous woodland within the Study Area comprises self-seeded areas of Scots pine which are not of a notable age or floristic diversity. Areas which are mature and are more likely to qualify as Annex I or SBL habitat are very limited in extent, and are not notable outside of the Local context.
Continuous bracken	7.90	1.00	Site	Single species stands of bracken are of limited intrinsic ecological value and are not notable outside the context of the site.
Dense/continuous scrub	4.88	0.62	Site	Scrub is a relatively common habitat type within the local area and county.





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				The species comprising this habitat are generally common, with the exception of juniper, which does not occur at densities likely to qualify as Annex I habitat. The extent and quality of the scrub habitat within the Study Area is therefore unlikely to be notable outside of the context of the site.
Dry heath/acid grassland mosaic	1.82	0.23	County	The dry dwarf shrub heath and acid grassland within the Study Area supports communities which are likely to qualify as Annex I habitat, and which are listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan.  This habitat is of a quality and extent which is likely to be of value within the context of the County.
Ephemeral/ short perennial	0.18	0.02	Site	This habitat type is typical of derelict sites and is of limited extent within the Study Area. It is not notable outside of the context of the site.
Improved grassland	17.58	2.22	Site	This habitat type exhibits a very low floristic diversity and is common within the context of the local area and county. It has therefore been assessed as being of value within the context of the site.
Marsh/marshy grassland	9.65	1.22	County	Areas of marsh / marshy grassland within the Study Area are likely to qualify as SBL habitat, and are listed on the Highland (Inverness and Nairn) LBAP and Cairngorms Nature Action Plan.  The quality and extent of this habitat is notable within the context of the local area and county.
Mixed plantation woodland	8.18	1.03	Site	Plantation woodland is a common habitat type within





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				the local and county context. The stands of mixed plantation woodland within the Study Area are generally of an extent and quality (limited floristic diversity and age) which is not notable outside of the context of the site.
Mixed semi-natural woodland	8.16	1.03	Local	Areas of mixed semi-natural woodland generally occur interspersed between larger stands of broad-leaved and coniferous woodland. These areas may qualify as SBL, Highland (Inverness and Nairn LBAP), or Cairngorm Nature Action Plan listed habitat, although they are not of an extent which is notable outside of the local area. These areas may support GWDTEs.
Poor semi-improved grassland	12.68	1.60	Site	This habitat type is generally species-poor and is common within the context of the local area and the county. It has therefore been assessed as being of value within the context of the site.
Quarry	2.23	0.28	Local	Quarry habitat across the Study Area are generally of limited extent and support a relatively low diversity of plant species. This habitat is unlikely to be notable outside of the local context.
Railway	8.02	1.01	Site	This habitat type is man-made and has limited intrinsic biodiversity value.
Roads Tracks And Paths	44.65	5.64	Site	This habitat type is man-made and has limited intrinsic biodiversity value.
Running water	2.96	0.37	Up to International	Watercourses that are part of, or are direct tributaries of, designated water-dependant SAC habitat are considered to be of up to International value. Watercourses that are part of, or are direct tributaries





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				of, designated water-dependant SSSI habitat are considered to be of up to National value. Other watercourses that are not part of statutory designated sites as outlined above, are considered to be at a minimum of Site value, and up to County value (i.e. Priority <sup>1</sup> Habitat <sup>xiii</sup> ).
Scattered broad-leaved tree	2.88	0.36	Local	Scattered trees within the Study Area are generally immature – semi-mature, although examples of mature and veteran specimens are present which are notable within the local context.
Scattered coniferous tree	0.02	0.00	Local	Scattered trees within the Study Area are generally immature – semi-mature, although there are examples of mature – veteran specimens which are notable within the local context.
Scattered scrub	2.44	0.31	Site	Scrub is a relatively common habitat type within the local area and county. The species comprising this habitat are generally common, with the exception of juniper, which does not occur at densities likely to qualify as Annex I habitat. The extent and quality of the scrub habitat within the Study Area is therefore unlikely to be notable outside of the context of the site.
Scree - acid/neutral	0.55	0,07	Local	Scree slopes across the Study Area are generally of limited extent and support a relatively low diversity of plant species. Although this habitat type is listed on the SBL, the example within the Study Area is unlikely to be notable outside of the local context.

<sup>1</sup> Priority watercourses are defined within the Scottish Biodiversity List





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
Scree/Acid dry dwarf shrub heath	0.24	0.03	Local	Scree slopes across the Study Area are generally of limited extent and support a relatively low diversity of plant species. Although these habitat types are listed on the SBL, the example within the Study Area is unlikely to be notable outside of the local context, give its limited extent.
Semi-improved acid grassland	8.82	1.11	Local	The semi-improved acid grassland within the Study Area may support vegetation communities which qualify as Annex I habitat, and which are listed on the SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Action Plan. However, these areas are of a relatively limited extent and are unlikely to be notable outside of the local context.
Semi-improved calcareous grassland	0.27	0.03	Local	This habitat type is listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan. The habitat within the Study Area is fragmented and of a very limited extent. It is therefore unlikely to be notable outside of the context of the local area.
Semi-improved neutral grassland	60.73	7.67	Local	The semi-improved neutral grassland within the Study Area is generally not of a particularly notable floristic diversity, and is not of a quality or extent that is notable within the context of the county or region. It has therefore been assessed as being of value at the Local level.
Standing water	2.11	0.27	Up to National	This habitat type includes ponds as well as large standing water bodies such as Loch Alvie and Loch Vaa. Although the value of standing water habitat





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				depends on the feature, standing water habitats within the Study Area support habitats which are of up to National value (in the case of Loch Alvie SSSI and Loch Vaa).
Swamp	1.02	0.13	Local	This habitat type is listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan. The habitat within the Study Area is fragmented and of a very limited extent. It is therefore unlikely to be notable outside of the context of the local area.
Tall ruderal vegetation	0.88	0.11	Site	The tall ruderal habitat within the Study Area is of a relatively limited extent and is comprised of common species. It is unlikely to be notable outside of the context of the site.
Unimproved acid grassland	32.98	4.17	County	The unimproved acid grassland within the Study Area is likely to support vegetation communities which qualify as Annex I habitat, and which are listed on the SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Action Plan.  The habitat within the Study Area is of a quality and extent, often occurring in a mosaic with heathland and mire, which is notable within the context of the County.
Unimproved calcareous grassland	0.46	0.06	Local	This habitat type is listed on the SBL, Highland (Inverness and Nairn) LBAP, and Cairngorms Nature Action Plan. The habitat within the Study Area is fragmented and of a very limited extent. It is therefore unlikely to be notable outside of the context of the local area.





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
Unimproved neutral grassland	9.28	1.17	Local	This habitat type is listed on the SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Action Plan. The example of this habitat type within the Study Area is however of a quality and extent which is unlikely to be of note outside of the context of the local area.
Wall	0.27	0.03	Site	Wall habitats within the Study Area are of a limited extent and exhibit limited intrinsic conservation value.
Wet dwarf shrub heath	6.99	0.88	County	The wet dwarf shrub heath within the Study Area is likely to support vegetation communities which qualify as Annex I habitat, and which are listed on the SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Action Plan. It may also support GWDTEs. The habitat within the Study Area is of a quality and extent, which is notable within the context of the County.
Wet heath/acid grassland mosaic	1.40	0.18	County	The wet dwarf shrub heath and acid grassland within the Study Area is likely to support vegetation communities which qualify as Annex I habitat, and which are listed on the SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Action Plan. It may also support GWDTEs. The habitat within the Study Area is of a quality and extent, which is notable within the context of the County.
Wet modified bog	23.81	3.01	County	The wet modified bog within the Study Area is likely to support vegetation communities which qualify as Annex I habitat, and which are listed on the





Phase 1 Habitat Type	Area of Habitat		Nature Conservation Value	Rationale for Valuation
	Hectares (ha)	% Study Area		
				SBL, the Highland (Inverness and Nairn) LBAP, and the Cairngorms Nature Action Plan. It may also support GWDTEs. The habitat within the Study Area is of a quality and extent, which is notable within the context of the County.

### Annex I Habitats

- 4.2.4. The Phase 1 habitat data for the Study Area was compared against the Annex I habitat types known to occur in Scotland. Table 4.2 presents Phase 1 habitat types recorded in the Study Area which are most likely to fulfil the qualification requirements of an Annex I habitat type. The distribution of these habitats within the Study Area is presented on Figures 11.4a and 11.4b.

**Table 4.2: Likely Annex I habitats based on Phase 1 survey findings**

Phase 1 Code	Phase 1 Habitats	Annex I Habitats
		Temperate Heath and Scrub
D2	Wet dwarf shrub heath	4010 Northern Atlantic wet heath with <i>Erica tetralix</i>
D1.1 and D1.2	Dry dwarf shrub heath	4030 European dry heaths
D1.1 and D1.2	Dry dwarf shrub heath	4060 Alpine and boreal heaths
		Sclerophyllous Scrub (Matorral)
D1.1 and D1.2	Dry dwarf shrub heath	5130 <i>Juniperus communis</i> formations on heaths or calcareous grasslands
		Natural and semi-natural grassland formations
B1.1	Unimproved acid grassland	6230* Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas
		Raised bogs and mires and fens
D2 E1.6.7	Wet dwarf shrub heath Blanket bog	7110* Active raised bogs
E1.7	Wet modified bog	7120 Degraded raised bogs still capable of natural regeneration
E1.6.1 D2	Blanket bog Wet dwarf shrub heath	7130* Blanket bogs
E1.6.1 D2	Blanket bog Wet dwarf shrub heath	7140 Transition mires and quaking bogs
		Forests





Phase 1 Code	Phase 1 Habitats	Annex I Habitats
A1.1.1	Broad-leaved semi-natural woodland	91A0 Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles
A1.2.1	Coniferous semi-natural woodland	91C0* Caledonian forest
A1.1.1	Semi-natural broad-leaved woodland	91D0* Bog woodland
A1.2.1	Coniferous semi-natural woodland	

\*denotes habitats that are identified 'priority' habitat within the Habitats Directive. These are particularly vulnerable and are mainly, or exclusively, found within the European Union.

### SBL Priority Habitat

- 4.2.5. The Phase 1 habitat data for the Study Area was compared with the SBL Priority Habitat criteria. Table 4.3 presents Phase 1 habitats recorded in the Study Area which may qualify as SBL Priority Habitat. The distribution of these habitats within the Study Area is presented on Figures 11.4a and 11.4b.

**Table 4.3: Likely SBL Habitats based on Phase 1 survey findings**

Phase 1 Code	Phase 1 Habitats	SBL Habitats
A1.1.1	Broad-leaved semi-natural woodland	Upland birchwoods Upland oakwood Wet woodland
A1.2.2	Coniferous semi-natural woodland	Native pine woodlands
A1.3.1	Mixed semi-natural woodland	Upland birchwoods Upland oakwood Wet woodland Native pine woodlands
B1.1 and B1.2	Unimproved / semi-improved acid grassland	Lowland dry acid grassland Juncus squarrosus-Festuca ovina grassland Nardus stricta-Galium saxatile grassland
B2.1 and B2.2	Unimproved / semi-improved neutral grassland	Lowland meadows Upland hay meadows
B3.1 and B3.2	Unimproved / semi-improved calcareous grassland	Upland calcareous grassland
B5	Marsh / marshy grassland	Purple moor-grass and rush pastures
D1	Dry dwarf shrub heath	Upland heathland
D2	Wet dwarf shrub heath	Upland heathland Blanket bog





Phase 1 Code	Phase 1 Habitats	SBL Habitats
D5	Dry heath / acid grassland mosaic	Upland heathland Lowland dry acid grassland Juncus squarrosus-Festuca ovina grassland Nardus stricta-Galium saxatile grassland
D6	Wet heath / acid grassland mosaic	Upland heathland Blanket bog Lowland dry acid grassland Juncus squarrosus-Festuca ovina grassland Nardus stricta-Galium saxatile grassland
E2.1	Flushes and springs	Upland flushes, fens and swamps
I1.2.1 I1.2.4	Natural rock exposures	Inland rock outcrops and scree habitats

### Groundwater Dependent Terrestrial Ecosystems

- 4.2.6. GWDTEs are wetlands that are dependent on groundwater from superficial deposits and as such are recognised within Council Directive 2000/60/EC (the 'Water Framework Directive' (WFD)) as requiring protection. Within Scotland, the WFD has been transposed into local statute through the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended), which offers protection to GWDTEs from the effects of abstractions, impoundments, pollution and engineering.
- 4.2.7. SEPA Guidance Document 31<sup>xi</sup> provides descriptions of wetland types which may qualify as GWDTEs and provides guidance on to equivalent JNCC Phase 1 habitat (see Table 4.4). Document 31 includes reference to broad wetland habitat types and second tier wetland habitats (see reference to WFD95 habitats in Table 4.4).
- 4.2.8. Chapter 9 (Geology, Soils and Groundwater) of the DMRB Stage 2 Assessment includes an assessment of the likely effects of the Proposed Scheme on these receptors.

**Table 4.4: Phase 1 Habitats that may qualify as GWDTEs within 100m of the Proposed Scheme boundary**

WFD95 Broad Wetland Habitats	WFD95 Second Tier Wetland Habitats	Phase 1 Code	Phase 1 Habitats
1 Wet woodland	1a Bog woodland	A1.2.1	Coniferous semi-natural woodland
	1b Other wet woodland	A1.1.1 A2.1	Broad-leaved semi-natural woodland Dense / continuous scrub
2 Wet grassland	2a Marshy grassland	B5	Marshy / marshy grassland
	2b Montane grassland	N/A	N/A*
3 Springs, flushes and seepages	3a Montane flushes	N/A	N/A*
	3b Tufa-forming springs	N/A	N/A*





WFD95 Broad Wetland Habitats	WFD95 Second Tier Wetland Habitats	Phase 1 Code	Phase 1 Habitats
	3c Other springs	E2.1	Acid / neutral flush
	3d Seepages / flushes	E2.1	Acid / neutral flush
4 Fen		N/A	N/A*
5 Swamp		F1	Swamp
6 Reedbed		N/A	N/A*
7 Wet heath		D2 D6	Wet dwarf shrub heath Wet heath / acid grassland mosaic
8 Peat bog	8a Peat bog	E1.6.1 E1.7 D2	Blanket bog Wet modified bog Wet dwarf shrub heath
	8b Quaking bog	D2	Wet dwarf shrub heath

\* Habitat type not within Study Area

### 4.3. Scope of DMRB Stage 3 Assessment

- 4.3.1. Further survey at Stage 3 will be undertaken to gather additional information on the quality of the habitats likely to be affected by the Proposed Scheme. This will include NVC surveys to classify the vegetation communities with the potential to be affected by the Proposed Scheme. The Stage 3 NVC survey area will cover 250m from the Proposed Scheme's footprint to satisfy SEPA requirements for assessing impacts on GWDTEs. This data will also inform the DMRB Stage 3 Assessment for Annex I and SBL Priority Habitat.

## 5. Protected and Priority Vascular Plants

### 5.1. Methodology

- 5.1.1. Protected plants include those species listed on either Schedule 4 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) or Schedule 8 of the Wildlife and Countryside Act 1981 (as amended in Scotland). Priority plants are those species that do not receive strict legal protection, but which are material considerations in planning, such as those listed on the SBL and Cairngorms National Park Authority Priority Species List.
- 5.1.2. Biological records were obtained to identify protected and priority vascular plants that could be affected by the Proposed Scheme. The information obtained was examined alongside Phase 1 habitat survey data to identify habitats that may support such species. This concentrated on the identification of these species and their likelihood of occurrence in habitats within 100m of the Proposed Scheme Options (the 'Study Area').

#### Desk Study

- 5.1.3. Biological records of protected and priority vascular plants within 1km of the Proposed Scheme were requested from local data providers, the HBRG and the NESBReC.





- 5.1.4. Information on the distribution of protected and priority vascular plants was sourced from the Botanical Society of Britain and Ireland (BSBI) Distribution Database<sup>xiv</sup>. The Study Area falls within vice-county (v.c) 96 'Easternness', which is covered by four 10km Ordnance Survey (OS) grid-squares - NO, NN, NH, and NJ.

### Protected vascular plants

- 5.1.5. Lists of Schedule 4 and Schedule 8 plants which are known to occur in Scotland were downloaded from the SNH website<sup>xv</sup>. Species on these lists were reviewed against information on their known distribution, sourced from the BSBI Distribution Database, and their habitat requirements. Where species had been recorded within the Study Area, the Phase 1 habitat data was examined for the same location to identify the habitats in which these species occur.

### Priority vascular plants

- 5.1.6. The SBL was reviewed to identify priority species that may occur within the Study Area. The SBL assigns each species on the list to three categories (these categories are not mutually exclusive) as follows:
- Species requiring conservation action;
  - Species upon which negative impacts should be avoided; and,
  - Species requiring a watching brief.
- 5.1.7. The collection of baseline data placed emphasis on those species on which 'negative impacts should be avoided'. These are species that are either protected by national or international law, are rare or restricted in distribution, or which are known to be in significant decline in Scotland. The likelihood of these species occurring within the Study Area was evaluated through a review of the BSBI's Distribution Database and Phase 1 habitat information collected for the Proposed Scheme.
- 5.1.8. The list of the CNPA Priority Species was reviewed to identify plants on the list which occur within the Study Area. Four plant species are listed on the CNPA Priority List: alpine blue sow-thistle (*Cicerbita alpina*), twinflower (*Linnaea borealis*), one-flowered wintergreen (*Moneses uniflora*), and tufted saxifrage (*Saxifraga cespitosa*). These species are also either listed on Schedule 8 of the WCA and / or the SBL.

### Limitations

- 5.1.9. No limitations to this assessment were encountered.

## 5.2. Results

### Desk Study

- 5.2.1. The information received from HBRG and NESBReC contained no records of protected, SBL Priority Species on which negative impacts should be avoided, or CNPA Priority Species.

### Protected vascular plants

- 5.2.2. Thirty three species of vascular plant that are listed on Schedule 8 of the WCA and three species listed on Schedule 4 of the Habitats Regulations are known to occur in Scotland. Distribution data provided by the BSBI indicates that 16 of these species occur





within the vicinity of the Study Area, and, based on their habitat requirements, may occur within habitats within the Study Area. These 16 species are listed in Table 5.1 along with the Phase 1 habitat type within which they are likely to occur.

**Table 5.1: Protected Vascular Plants with potential to occur within the Study Area**

Phase 1 Habitat Type	Species Name	Designation
Dry dwarf shrub heath	Blue heath ( <i>Phyllodoce caerulea</i> )	Schedule 8
Wet dwarf shrub heath	Marsh saxifrage ( <i>Saxifraga hirculus</i> )	Schedule 4
Basic flush and spring	Narrow-leaved marsh-orchid ( <i>Dactylorhiza traunsteinerioides</i> )	Schedule 8
Semi-natural broadleaved woodland	Young's helleborine ( <i>Epipactis helleborine</i> var. <i>youngiana</i> )	Schedule 8
Semi-natural broadleaved woodland	Whorled solomon's-seal ( <i>Polygonatum verticillatum</i> )	Schedule 8
Acid/neutral rock exposure	Alpine sow-thistle	Schedule 8
Acid/neutral rock exposure	Alpine fleabane ( <i>Erigeron borealis</i> )	Schedule 8
Acid/neutral rock exposure	Alpine gentian ( <i>Gentiana nivalis</i> )	Schedule 8
Acid/neutral rock exposure	Tufted saxifrage	Schedule 8
Acid/neutral rock exposure	Killarney fern ( <i>Trichomanes speciosum</i> )	Schedule 4
Acid/neutral rock exposure	Oblong woodsia ( <i>Woodsia ilvensis</i> )	Schedule 8
Acid/neutral rock exposure	Dickie's bladder fern ( <i>Cystopteris dickieana</i> )	Schedule 8
Acid/neutral rock exposure	Rock cinquefoil ( <i>Potentilla rupestris</i> )	Schedule 8
Acid/neutral rock exposure	Drooping saxifrage ( <i>Saxifraga cernua</i> )	Schedule 8
Acid/neutral rock exposure	Alpine woodsia ( <i>Woodsia alpina</i> )	Schedule 8
Broadleaved woodland and grassland	Bluebell ( <i>Hyacinthoides non-scripta</i> )	Schedule 8

- 5.2.3. The remaining 20 protected plant species are not considered further within this study as they are unlikely to occur within the Study Area, either because they have a very restricted range or because they are found within habitats not present in the Study Area (or a combination of the two). These species are listed in Table 5.2.

**Table 5.2: Protected Vascular Plants in Scotland unlikely to occur within Study Area**

Species Name	Designation	Rational for Scoping Out
Small Alison ( <i>Alyssum alyssoides</i> )	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.
Alpine rock-cress ( <i>Arabis alpina</i> )	Schedule 8	Restricted geographical range; only occurs on Isle of Skye.
Arctic sandwort (Norwegian Sandwort) ( <i>Arenaria norvegica</i> ssp. <i>norvegica</i> ( <i>Arenaria norvegica</i> ))	Schedule 8	Restricted geographical range; only occurs in western, north-western Scotland and Shetland Isles.
Stinking goosefoot ( <i>Chenopodium vulvaria</i> )	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.





Species Name	Designation	Rational for Scoping Out
Pigmyweed ( <i>Crassula aquatic</i> )	Schedule 8	Restricted geographical range; only present at one site on west coast of Scotland.
Diapensia ( <i>Diapensia lapponica</i> )	Schedule 8	Restricted geographical range; only present at one site near Fort William.
Dwarf spike-rush ( <i>Eleocharis parvula</i> )	Schedule 8	Restricted to habitats which do not occur within the Study Area; wet muddy places by the sea and in estuaries.
Dune gentian ( <i>Gentianella uliginosa</i> )	Schedule 8	Restricted to habitats which do not occur within the Study Area; coastal dunes and dune slacks.
Laxo burn hawkweed (weak-leaved hawkweed) ( <i>Hieracium attenuatifolium</i> )	Schedule 8	Restricted geographical range; hawkweed species which is endemic to the Shetland Isles.
North roe hawkweed (northroe hawkweed) ( <i>Hieracium northroense</i> )	Schedule 8	Restricted geographical range; hawkweed species which is endemic to the Shetland Isles.
Shetland hawkweed ( <i>Hieracium zetlandicum</i> )	Schedule 8	Restricted geographical range; hawkweed species which is endemic to the Shetland Isles.
Purple colt's-foot ( <i>Homogyne alpina</i> )	Schedule 8	Restricted geographical range; at one site on Glen Cova in Angus.
Grass-poly ( <i>Lythrum hyssopifolia</i> )	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.
Rough marsh-mallow ( <i>Malva setigera</i> ( <i>Althaea hirsuta</i> ))	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.
Field cow-wheat ( <i>Melampyrum arvense</i> )	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.
Slender naiad ( <i>Najas flexilis</i> )	Schedule 4	Occurs within a habitat where they would not be evident whilst surveying along the A9 as this specie is found completely submerged in clean lakes.
Small restharrow ( <i>Ononis reclinata</i> )	Schedule 8	Restricted to habitats which do not occur within the Study Area, as this species is found on bare sand or limestone on the coast.
Small fleabane ( <i>Pulicaria vulgaris</i> )	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.
Greater yellow-rattle ( <i>Rhinanthus angustifolius</i> )	Schedule 8	Predominantly distributed in southern Britain with few, mainly historic, records in Scotland.
Alpine catchfly ( <i>Silene suecica</i> ( <i>Lychnis alpina</i> ))	Schedule 8	Restricted geographical range; extremely rare in two hectads in Angus and West Sutherland.

### Priority Species

- 5.2.4. The SBL lists 91 species to which negative impacts should be avoided. Distribution data provided by the BSBI indicates that 21 of these species occur within the vicinity of the Proposed Scheme, and, based on their habitat requirements, may be present in habitats within the Study Area. These 21 species are listed in Table 5.3 along with the Phase 1 habitat type in which they are likely to occur.
- 5.2.5. The remaining 70 of the 91 species listed on the SBL have been excluded from this study as they are unlikely to occur within the Study Area, either because they have a





very restricted range (and are not likely to occur within the Study Area) or because they occur within habitats not present in the Study Area (or a combination of the two).

**Table 5.3: SBL species likely to occur within the Study Area**

Name	Occurrence in 100 km grid squares NH, NJ, NO, and NN	Phase 1 Habitat Type
Field garlic ( <i>Allium oleraceum</i> )	Dry grassy places. Post 2010 records in NJ	Grassland (dry)
Small cow-wheat ( <i>Melampyrum sylvaticum</i> )	Upland woods and moorland. Many recent records for NH and NJ.	Upland woodlands and moorland
One-flowered wintergreen ( <i>Moneses uniflora</i> )	On leaf litter in pine woods. Many recent records for NH and NJ.	Coniferous (pine) woodlands
Yellow bird's-nest ( <i>Monotropa hypopitys</i> )	Leaf litter in woods and sand dunes. 1970-1986 records for NH and NJ.	Woodlands and sand dunes
Small-flowered catchfly ( <i>Silene gallica</i> )	Waste places and cultivated land. Mostly in England. A few recent records in NH and NJ.	Waste and cultivated land
Narrow small-reed ( <i>Calamagrostis stricta</i> )	Marshes, fens and lakesides. 2000-2009 record from NH.	Marshes, fens and lakesides
Narrow-fruited water-starwort ( <i>Callitriche palustris</i> )	In or near ponds. 1987-1999 record from NH.	Ponds
Rampion bellflower ( <i>Campanula rapunculus</i> )	Rough grassy fields. 1970-1986 record in NJ.	Rough grassland
Alpine blue-sow-thistle ( <i>Cicerbita alpina</i> )	Extremely local at four sites in Cairngorms-square NO south of NJ.	Acid/neutral rock exposure
Alpine fleabane ( <i>Erigeron borealis</i> )	Pre-1930 record for NJ but mostly in NO and NN squares.	Acid/neutral rock exposure
Alpine gentian ( <i>Gentiana nivalis</i> )	Mostly in NO and NN squares.	Acid/neutral rock exposure
Blue heath ( <i>Phyllodoce caerulea</i> )	Recent records in NN square.	Dry dwarf shrub heath
Whorled Solomon's-seal ( <i>Polygonatum verticillatum</i> )	Mostly in Cairngorms in squares NO and NN.	Semi-natural broadleaved woodland
Rock cinquefoil ( <i>Potentilla rupestris</i> )	Records from square NN.	Basic rock exposure
Drooping saxifrage ( <i>Saxifraga cernua</i> )	Records from square NN.	Basic rock exposure
Tufted saxifrage ( <i>Saxifraga cespitosa</i> )	Records from squares NH and NJ.	Acid/neutral rock exposure
Marsh saxifrage ( <i>Saxifraga hirculus</i> )	Recent records from squares NH and NJ.	Wet dwarf shrub heath
Dickie's bladder-fern ( <i>Cystopteris dickieana</i> )	Recent records from squares NH and NJ.	Basic rock exposure
Killarney fern ( <i>Trichomanes speciosum</i> )	Recent records from squares NH and NJ.	Acid/neutral rock exposure
Alpine woodsia ( <i>Woodsia alpina</i> )	Records from NH but mostly in NN.	Basic rock exposure





Name	Occurrence in 100 km grid squares NH, NJ, NO, and NN	Phase 1 Habitat Type
Oblong woodsia ( <i>Woodsia ilvensis</i> )	Recent records from NN and NO.	Acid/neutral rock exposure

### 5.3. Scope of DMRB Stage 3 Assessment

- 5.3.1. The desk study identified 16 protected vascular plant species and 21 priority species listed on the SBL (13 of which are also protected, i.e. listed on Schedule 8 of the WCA) that may occur within the Study Area. Habitats most likely to support these species are heath (dry and wet dwarf shrub heath), mire (acid flush and fens, wet modified bog), woodland (semi-natural coniferous and semi-natural broad-leaved woodland), and unimproved grassland (acid grassland). Areas of exposed rock, which occur within a quarry and scattered within other habitats within the Study Area, may also be of importance to certain species on this list.
- 5.3.2. Searches for protected and priority plant species will be undertaken during the NVC surveys proposed to inform the Stage 3 NVC (see Section 4 above). The NVC surveys will cover 250m from the Proposed Scheme's earthwork footprint. Where considered appropriate, further targeted searches for protected and priority plants will be undertaken, to be informed by the results of the NVC surveys.

## 6. Bryophytes

### 6.1. Methodology

- 6.1.1. A desk study was undertaken to identify protected and priority bryophytes that could be affected by the Proposed Scheme. The information obtained was examined alongside known species habitat requirements and Phase 1 habitat survey data to identify habitats that may support particular species. The study concentrated on the identification of species and their likelihood of occurrence in habitats within 100m of the Proposed Scheme Options (the 'Study Area').
- 6.1.2. Protected bryophytes are those listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended in Scotland), and those listed on Annex II of the European Habitats Directive. Priority bryophytes are those which do not receive strict legal protection, but which are material considerations in planning, such as species listed on the SBL.

#### Desk Study

- 6.1.3. The most recent vice-county distribution list for v.c.96 Easternness (which covers the Study Area) was downloaded from the British Bryological Society website and reviewed. This is a list of all bryophyte data included within the Census Catalogue<sup>xvi</sup> which has been updated to include records published up to and including 2012. It includes every bryophyte species recorded from v.c.96.
- 6.1.4. The habitat requirements of each of the listed species (sourced from the Atlas of British & Irish Bryophytes<sup>xvii</sup>) was considered alongside the Phase 1 habitat data collected for the Proposed Scheme, to identify the presence of habitats that may support these species within the Study Area.
- 6.1.5. The legal and conservation status of species that could occur within the Study Area was identified from the SBL. This assessment has placed emphasis on the likely occurrence





of legally protected species and species listed on the SBL to which negative impacts should be avoided. This includes all species which are protected by national or international law, rare or restricted in distribution, or which are in significant decline in Scotland.

- 6.1.6. The list of the CNPA Priority Species was reviewed to identify bryophytes on the list which are likely to occur within the Study Area and there is only one species, the green shield-moss (*Buxbaumia viridis*).
- 6.1.7. Biological records of bryophytes within 1km of the existing A9 were obtained from the HBRG and the NESBReC. These records were reviewed to confirm the presence of protected and priority species.

### Limitations

- 6.1.8. No limitations to this assessment were encountered.

## 6.2. Results

### Desk Study

- 6.2.1. Records of two Annex II species were returned from the BBS distribution database within v.c.96 (the mosses *Buxbaumia viridis* and *Hamatocaulis vernicosus*). Additionally, records within v.c. 96 were received from the BBS Distribution Database including five mosses listed on Schedule 8 of the Wildlife and Countryside Act (*Buxbaumia viridis*, *Hamatocaulis vernicosus*, *Orthotrichum obtusifolium*, *Saelania glaucescens* and *Sphagnum balticum*) and one liverwort (*Gymnomitrium apiculatum*).
- 6.2.2. Data received from the HBRG confirmed records of a notable bryophyte species within Study Area:
  - HBRG supplied two records of waved fork-moss (*Dicranum undulatum*) (listed as *Dicanum bergeri* in records, a synonym of *D. undulatum*) recorded at NH8796111854 and NH8798411813 on 24/05/2011. Both of these records are from an area to the south of Lochan Dubh, southwest of Aviemore (Section 2 and 3a), within the Study Area.
- 6.2.3. NESBReC did not return any records of notable or protected bryophytes within the Study Area.
- 6.2.4. The desk study revealed that 20 species of moss and six species of liverwort that are either protected and / or listed on the SBL as species to which negative impacts should be avoided may occur within v.c. 96. Based on the habitat preferences of these species, ten mosses and three liverworts may occur within the Study Area (see Table 6.1).

**Table 6.1: SBL Bryophytes in v.c.96 most likely to occur within Study Area**

Species name	Habitat Preferences and Phase 1 habitat classification (provided in brackets)
Liverworts	
Curled notchwort ( <i>Anastrophyllum saxicola</i> )	Grows on dry, often north-facing acid boulder scree, mainly in the Cairngorms, including An Garbh-coire, Abernethy. Altitudinal range 330-700m. (Acid/neutral rock exposure).





Species name	Habitat Preferences and Phase 1 habitat classification (provided in brackets)
Bog pawwort ( <i>Barbilophozia kunzeana</i> )	Normally in damp or waterlogged sites, with neutral to slightly acid water including basin mires, valley bogs, flushes, wet moorland hollows and mountain streamsides. Rarely on dry rocky upland habitats and peat overlying limestone. Altitudinal range 155-1250m. (Bogs, acid/neutral flushes, wet dwarf shrub heath).
Welsh notchwort ( <i>Gymnocolea acutiloba</i> )	Found on hard crystalline boulders and rocks in block scree. Only recorded from one hectad (10km x 10km square) in Scotland at Strath Nethy in a vast scree bed. Altitudinal range 360-600m. (Acid/neutral rock exposure).
Mosses	
Carrion-moss ( <i>Aplodon wormskioldii</i> )	Grows on carrion and animal scats or bird pellets in wet areas in the hills. Last record in Britain was in v.c. 96 in 1981 growing on a sheep carcass in a mire. It is possibly now extinct in Britain. Altitudinal range 325-870m. (Bogs, wet dwarf shrub heath, acid grassland).
Green shield-moss ( <i>Buxbaumia viridis</i> )	The main habitat is on rotten wood. Usually on pine logs or stumps but also, less frequently on other conifers and broadleaved trees. Has also been recorded from old ants' nests and organic soil and rarely from the bark of living trees. It is usually in shaded and humid sites within woodland, often near watercourses. Altitudinal range 140-350m. (Coniferous semi-natural woodland).
Delicate dog-tooth ( <i>Cynodontium tenellum</i> )	Usually grows as small dense cushions along crack-lines or crevices on steep, acid crags but also occurs in block scree and is more frequent in open unshaded sites than <i>Cynodontium polycarpon</i> or <i>C. strumiferum</i> . Altitudinal range 150-700m. (Acid/neutral rock exposure).
Waved fork-moss ( <i>Dicranum undulatum</i> )	Confined to bogs, typically undisturbed raised bogs, forming hummocks amongst heather and Sphagnum. Altitudinal range 0-450m. (Bogs).
Varnished hook-moss ( <i>Hamatocaulis vernicosus</i> )	Found in neutral to base-rich mires where there is some mineral enrichment, especially in flushes and springheads in the uplands. Altitudinal range 10-610m. (Fen, basic fen, basic flushes).
Aspen bristle-moss ( <i>Orthotrichum gymnostomum</i> )	A rare epiphyte usually on the trunks of aspen in open pine, birch and juniper woodland. First found in Scotland in 1966. Occurs in three hectads (1990-2013) in Britain. Altitudinal range 190-250m. (Coniferous and broad-leaved woodland).
Blunt-leaved bristle-moss ( <i>Orthotrichum obtusifolium</i> )	Grows as a pioneer on exposed roots and trunks, often on large mature trees. Found on roadsides and parkland, less often in open woodland and carr, usually in well-illuminated localities. Aspen is characteristic host tree in NE Scotland. Altitudinal range 0-290m. (Coniferous and broad-leaved woodland, parkland/scattered trees).
Scottish thread-moss ( <i>Pohlia scotica</i> )	Endemic to Scotland. First collected in 1964 but not described as a new species until 1982. Occurs on sand and gravel by rivers, lochs or burns where there is periodic irrigation and regular inundation. Altitudinal range 45-650m. (Besides open water).
Baltic bog-moss ( <i>Sphagnum balticum</i> )	Found in well-developed bogs, mainly raised bogs. Persists at only four British locations including bog at Abernethy Forest, Easternness. Altitudinal range 10-650m. (Bogs).
Olive bog-moss ( <i>Sphagnum majus</i> )	Forms lawns by pools and in soaks, either within bog land or at the edge of bogs. Altitudinal range 95-490m. (Bogs, wet dwarf shrub heath).

6.2.5. Thirteen of the species identified through the desk study occur within very narrow habitat niches, such as areas of late snow lie restricted to very high altitudes. These 13 species





are presented in Table 6.2, and have been excluded from further consideration in this assessment.

**Table 6.2: SBL Bryophytes in v.c.96 unlikely to occur within Study Area**

Species name	Rational for Scoping Out
Liverworts	
Snow pincerwort ( <i>Cephalozia ambigua</i> )	Grows on wet, gravelly, humus-rich ground in areas of late snow-lie, especially close to flushes. Altitudinal range 770-1200m.
Pointed frostwort ( <i>Gymnomitrium apiculatum</i> )	Grows on peaty or gravelly mineral soils on gently sloping exposed north to east facing slopes and moist depressions in open fell fields, often in areas of late snow-lie. Altitudinal range 960-1200m.
Boeck's rustwort ( <i>Marsupella boeckii</i> )	Only known from five Scottish mountains, growing on wet acid rock walls and large blocks in areas of late snow-lie. All records for v.c. 96 are pre 1990. Altitudinal range 1000-1100m.
Mosses	
Icy rock-moss ( <i>Andreaea frigida</i> )	Main population is in Cairngorms. Grows on wet granite boulders associated with areas of late snow-lie. Altitudinal range 925-1160m.
Snow rock-moss ( <i>Andreaea nivalis</i> )	Characteristic of wet rocks and gravels in areas of late snow-lie and associated meltwater burns at high altitude. Altitudinal range 880-1340m.
Alpine comb-moss ( <i>Ctenidium procerrimum</i> )	Grows on well-drained, strongly calcareous rocks, either on ledges or at the base of broken crags. Largest population is on south-facing slopes at Glen Feshie, approximately 10km south of A9. Altitudinal range 540-1070m.
Dimorphous tamarisk-moss ( <i>Heterocladium dimorphum</i> )	Almost exclusively grows in dry crevices in calcareous block scree in the mountains. On the shaded flat upper surfaces of rocks or on steep sides of blocks in scree in sheltered positions. Rarely on mineral soil in more open habitat. Altitudinal range 475-1150m.
Soft brook-moss ( <i>Hygrohypnum molle</i> )	Occurs in springs and rocky streams growing over small rocks and stones, usually in the run-off from areas of late snow-lie so habitat is permanently wet. Sometimes on wet crags at high altitude. Altitudinal range 650-1260m.
Arctic brook-moss ( <i>Hygrohypnum smithii</i> )	Grows as dark green mats tightly appressed to rocks in burns or less frequently in seepage lines on crags high in the hills. Often near waterfalls or cascades and usually where substrate is at least moderately base-rich. Altitudinal range 610-1075m.
Snow brook-moss ( <i>Hygrohypnum styriacum</i> )	Only known from one location, at Coire an t'Sneachda, high in the Cairngorms, a north facing corrie where snow lies late in the summer. Known population occurred in a crevice in a crack-line in the vertical face of the granite retaining wall of an open gully. First found in Britain in 1989 but not seen since 1991, despite searches of site. Altitudinal range 1075m.
Blunt-leaved thread-moss ( <i>Pohlia obtusifolia</i> )	Grows on wet soil and gravel in the mountains in very open vegetation. Most sites associated with late snow-lie. Altitudinal range 850-1280m.
Blue dew-moss ( <i>Saelania glaucescens</i> )	Grows on well-drained mineral soil in sheltered crevices on base-rich crags. Known from Glen Feshie but not seen there since 1965. Altitudinal range 540-720m.
Black mountain Grimmia ( <i>Schistidium atrofusum</i> )	Occurs on dry, crumbling, west or south-facing, strongly calcareous schist or metamorphosed limestone cliffs. Almost all sites associated



Species name	Rational for Scoping Out
	with outcrops of metamorphosed Dalradian Limestone in the Cairngorms. Altitudinal range 350-700m.

### 6.3. Scope of the DMRB Stage 3 Assessment

- 6.3.1. The desk study revealed 10 species of moss and three species of liverwort that are either protected and/or listed on the SBL that may occur within the Study Area.
- 6.3.2. Investigation of the habitat requirements of these 13 species suggests that important habitat within the Study Area is likely to comprise areas of heath (wet and dry dwarf shrub heath) and bog (wet modified bog). Woodlands within the Study Area are generally likely to support common and widespread species, although protected and priority mosses of the genus *Orthotrichum* (which grow as epiphytes) or *Buxbaumia*, may be present. Areas of bare and exposed rock may also to be important habitats for protected or priority bryophytes, although these habitats are not extensive within the Study Area.
- 6.3.3. Searches for protected and priority plant species will be undertaken during the NVC surveys proposed to inform the Stage 3 NVC (see Section 4 above). The NVC surveys will cover 250m from the Proposed Scheme's earthwork footprint. Where considered appropriate, further targeted searches for protected and priority plants will be undertaken, to be informed by the results of the NVC surveys.

<sup>i</sup> CH2MHill (2015) Preliminary Ecological Appraisal. North Scheme – Dalraddy to Moy

<sup>ii</sup> CH2MHill (2015) Preliminary Ecological Appraisal. North Scheme – Dalraddy to Moy.

<sup>iii</sup> Multi-Agency Geographic Information for the Countryside (2016) Interactive Map. Available at: <http://magic.defra.gov.uk/MagicMap.aspx> (Accessed 15/06/2016).

<sup>iv</sup> Scottish Natural Heritage (2016) Site Link. Available at: <http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/> (Accessed 15/06/2016).

<sup>v</sup> Scottish Natural Heritage (2016) Interactive Map. Available at: <http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/map/> (Accessed 15/06/2016).

<sup>vi</sup> Joint Nature Conservation Committee (2016) UK Protected Sites. Available at: <http://jncc.defra.gov.uk/page-4> (Accessed 15/06/2016).

<sup>vii</sup> The Design Manual for Roads and Bridges advises that 200m from a proposed scheme is the likely distance within which indirect effects to sites (such as from aerial pollutants) are likely to occur (REF: <http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian170.pdf>).

<sup>viii</sup> Scottish Natural Heritage (2016) Natural Spaces. Available at: <http://gateway.snh.gov.uk/natural-spaces/index.jsp> (Accessed 15/06/2016).

<sup>ix</sup> Scottish Natural Heritage (2015) Habitats (listed on Annex I) and species (listed on Annex II) of the Habitats Directive which occur in Scotland and for which Special Areas of Conservation are selected. Available at: <http://www.snh.gov.uk/docs/C210224.pdf> (Accessed 21/06/2016).

<sup>x</sup> Joint Nature Conservation Committee (2016) Annex I habitats and Annex II species occurring in the UK. Available at: <http://jncc.defra.gov.uk/page-1523> (Accessed 15/06/2016).

<sup>xi</sup> Scottish Environment Protection Agency (2014) Guidance Document 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Available at: <http://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> (Accessed 01/09/2015).

<sup>xii</sup> CH2MHill (2015) Preliminary Ecological Appraisal. North Scheme – Dalraddy to Moy.

<sup>xiii</sup> Biodiversity Scotland Priority Habitats - <http://www.snh.gov.uk/docs/A1509006.pdf>

<sup>xiv</sup> Botanical Society of Britain and Ireland (2016) Distribution Database. Available at: <http://bsbidb.org.uk/> (Accessed 15/06/2016).

<sup>xv</sup> Scottish Natural Heritage (2009) Protected species - Plants and fungi. Available at: <http://www.snh.gov.uk/protecting-scotlands-nature/protected-species/which-and-how/plants-fungi/> (Accessed on 15/06/2016).

<sup>xvi</sup> Hill, M.O., Blackstock, T.H., Long, D.G., Rothero, G.P. (2008) A Checklist and Census Catalogue of British and Irish Bryophytes. The British Bryological Society, Cardiff.



<sup>xvii</sup> Blockeel, T.L., Bosanquet, S.D.S., Hill, M.O., Preston, C.D. (2014) Atlas of British and Irish Bryophytes. The British Bryological Society, Cardiff.





# Annex A. Supplementary Phase 1 Habitat Survey

## A.1. Introduction

Atkins Mouchel Joint Venture (AMJV) is the Lead Design Consultant for the A9 Dualling Northern Section (Dalraddy to Inverness). MacArthur Green has been commissioned to assist AMJV with vegetation and habitat classification elements relating to the Design Manual for Roads and Bridges DMRB Stage 2 options appraisal and DMRB Stage 3 iterative design assessment process.

### Background to the current study

In 2014 CH2M Hill undertook a Preliminary Ecological Appraisal (PEA) to help inform the A9 Dualling Northern Section environmental assessment. The PEA included a desk study and a Phase 1 habitat walkover survey of the Northern Section which is made up of two separate schemes; Dalraddy to Slochd (approximately 27km long) and Tomatin to Moy (approximately 9km long). The field survey area for the PEA generally included land 150m either side of the existing A9, although it was extended in places where considered appropriate (e.g. woodlands and wetlands).

Since the original surveys, possible dualling options have been developed for the scheme, which includes road widening, new junctions and associated realignments. This has resulted in the development of the Proposed Scheme Options corridor i.e. the areas of potential land take for the scheme. The Proposed Scheme Options encompass an understandably larger area than the existing corridor of the A9, on which the original surveys were based.

The scope of the current study was to map to Phase 1 level those habitats that were not captured during the 2014 field surveys for the PEA and that are within 100m of the Proposed Scheme Options for Dalraddy to Slochd, and to ensure that there were no gaps in the mapping coverage. The current study did not propose to verify or re-map areas already surveyed. At the request of AMJV, further descriptive information was to be collected on areas designated as Ancient Woodland (AW) that fall within the Proposed Scheme Options.

This document details the results of these supplementary Phase 1 habitat field surveys undertaken for Dalraddy to Slochd and carried out by MacArthur Green in April 2016.

### The Study Area

The Dalraddy to Slochd section is approximately 27km long. At its southern extent, it begins around Loch Alvie, just south of Aviemore; it extends northwards and terminates a short distance north of Slochd summit. The study area within which Phase 1 surveys were undertaken was determined by buffering the maximum extent of the Proposed Scheme Options by 100m, as provided by AMJV in GIS.

The study area consists of a wide range of mainly upland, grasslands, mires, heaths and woodland. Most of the vegetation in the study area has been impacted anthropogenically over time in a number of ways. In upland areas, these impacts have been mainly through moorland management techniques such as muirburn (for grouse), grazing and drainage, but also forestry; these management activities have clearly influenced the plant communities. In the more lowland areas, livestock farming and





associated agricultural practices are clearly drivers and maintainers of many habitats and vegetation types present, and the species composition of much of the vegetation shows the influences of grazing, drainage and fertiliser application.

## A.2. Methodology

### Phase 1 Habitat Survey

The habitats and vegetation of the study area was surveyed during April 2016 by a team of suitably qualified and experienced surveyors using the Phase 1 habitat survey scheme and in accordance with standard Phase 1 guidelines<sup>xviii</sup>. Phase 1 is a standard technique for classifying and mapping British habitats. It ensures that surveys are carried out to a consistent level of detail and accuracy with the aim of providing an inventory of those areas of greatest ecological importance.

The supplementary Phase 1 survey was carried out by a team of four surveyors from 18<sup>th</sup> to 21<sup>st</sup> April 2016 between the hours of approximately 0830-1730. The weather conditions were amenable to survey: bright, with broken cloud and relatively light winds, and with infrequent light showers on Monday 18<sup>th</sup> April.

Surveys involved surveyors completing a walkover of the study area, recording the habitats present onto detailed 1:5,000 aerial maps. The Phase 1 methodology suggests carrying out mapping on a scale of 1:10,000. However 1:5,000 aerial maps were used in the current study in order to allow more accurate mapping of very small areas and features such as verges along this linear scheme. Additional descriptive information was collected on many of the mapped polygons, for instance the species assemblage and species abundance, and information on the condition of the habitat present.

In addition to the recording of habitats, other areas or features of ecological interest, for instance springs or features pertaining to the presence/likely presence of protected species are also noted via the inclusion of 'Target Notes' (TNs). Each TN includes a brief description of the feature together with a grid reference; additional information such as a photograph is added depending on the feature.

Botanical nomenclature in this report follows Stace (2010)<sup>xix</sup> for vascular plants and Atherton *et al.* (2010)<sup>xx</sup> for bryophytes.

### Ancient Woodland

A number of areas classified as Ancient Woodland (AW) lie within the ROC. However the boundaries of such AW areas are often inaccurate and many areas may not be considered AW for a number of reason (e.g. having been converted to grassland, or no ancient trees exist with the woodland having been replaced by plantation or scrub). At the request of AMJV, these areas of classified AW within the ROC were also visited during the survey to collect addition descriptive information. This included recording the habitat type in accordance with the Phase 1 classification and making Target Notes as required – gathering information on the species assemblages within the canopy, understorey and field layer, with photographs as appropriate.

### Limitations

Two small parts of the study area were inaccessible and could not be surveyed in detail in the field. One was a small area of fenced off land by Carrbridge railway station, on the northern flank of the railway line. The other area was a small section of woodland on the edge of the study area buffer on the western shore of Loch Alvie; however the A9





dualling scheme is already under construction in this area (Kincraig to Dalraddy section). The habitats in these two areas were inferred from aerial imagery and knowledge of the surrounding habitat. Direct access to these two small areas is not considered to be limiting, particularly given their location and distance from the Proposed Scheme.

Surveys were conducted in mid-April, which is relatively early in the flowering season and therefore not the optimal time for carrying out vegetation surveys. However, due to many of the easily recognisable types of habitat present (e.g. heaths, woodlands etc.), the presence of early flowering species, buds, recognisable dead vegetation from the previous season, and vegetation that persists through the winter (e.g. trees, scrub, mosses), it was relatively easy to classify the vegetation accurately. Therefore the time of year was not seen as a constraint to the survey.

### A.3. Survey Results

The main output for the current survey was to deliver updated ESRI shapefiles to AMJV containing a complete Phase 1 habitat map of the study area and consisting of the 2014 CH2M Hill data augmented with MacArthur Green 2016 data covering extensions to, and any gaps within, the coverage of the mapping of the study area. Target Notes and relevant photographs are part of this deliverable and have been provided to AMJV in an appropriate GIS format.

The current study did not intend to verify or re-map areas already surveyed. However, if obvious discrepancies were incidentally noted during the course of the survey, then the mapping was updated and these have been provided to AMJV within the GIS data.

The existing and new Phase 1 mapping has been merged to create a suite of updated Phase 1 results maps for this section (see Figure 11.3).

The PEA has already described the habitat types within the study area in detail. The purpose of this survey and report is not to update the findings or habitat descriptions within the PEA, but to fill in any mapping gaps and provide descriptive information on newly mapped areas and areas of AW in the form of Target Notes. Consequently, habitat descriptions can be found in the original PEA. Information on newly mapped polygons, Ancient Woodlands, and features or areas of interest is provided through the inclusion of 13 Phase 1 Target Notes (Table A.1), 76 Ancient Woodland Target Notes (Table A.2) and 106 Polygon Target Notes (Table A.3). The new Target Note/Point Feature locations are also provided as separate GIS layers and these data should be cross referenced to Table A.1, Table A.2 and Table A.3, and the representative photographs provided.

A collated botanical species list for the species mentioned in the Target Notes is provided in Table A.4.

### A.4. Summary

MacArthur Green carried out Phase 1 walkover surveys within the extended Dalraddy to Slochd study area from 18<sup>th</sup> to 21<sup>st</sup> April 2016. The aim of the surveys was to map those habitats within the Study Area that were not captured during the 2014 field surveys for the PEA, and to ensure there were no gaps in mapping coverage. Additional descriptive information was collected on areas of Ancient Woodland within the the Proposed Scheme Options.

This report details the methods used and provides information on newly mapped habitats through the provision of Target Notes (Table A.1, Table A.2 and Table A.3).





Mapping data has been provided to AMJV through the delivery of updated ESRI shapefiles, which corresponds to the mapping and habitats provided in the delivered GIS.

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<sup>xviii</sup> Joint Nature Conservancy Council. (2010). Handbook for phase 1 habitat survey – a technique for environmental audit. JNCC.

<sup>xix</sup> Stace, C. (2010). New Flora of the British Isles (3rd Edition). Cambridge University Press.

<sup>xx</sup> Atherton, I., Bosanquet, S. & Lawley, M. (2010). Mosses and Liverworts of Britain and Ireland: a field guide. British Bryological Society.



Table A.1 Phase 1 Target Notes

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>2</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
TN01	283889	825561	E2.1	<i>Sphagnum fallax</i>	<i>Juncus effusus</i>	<i>Sphagnum denticulatum</i>	<i>Polytrichum commune</i>		Acidic flushing on slope around minor watercourse/drain. Tufts of <i>Juncus effusus</i> over <i>Sphagna</i> .	TN01_North-east
TN02	284402	824933	E2.3	<i>Philonotis fontana</i>		<i>Dichodontium palustre</i> , <i>Scapania undulata</i>			Bryophyte dominated springhead. Grades into basic flush downslope.	TN02_North-east
TN03	284402	824931	E2.2	Small <i>Carex</i> spp.		<i>Scorpidium</i> spp.			Quite open swarded basic stony flush with running water from springhead above.	TN03_South-west
TN04	287916	824214	A1.1.1	<i>Betula</i> spp.	<i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>	<i>Calluna vulgaris</i> , <i>Vaccinium myrtillus</i> , <i>Vaccinium vitis-idaea</i> , <i>Erica tetralix</i>	<i>Juncus effusus</i> , <i>Nardus stricta</i> , <i>Polytrichum commune</i> , <i>Sphagnum fallax</i> , <i>S. palustre</i>		<i>Betula</i> woodland, for the most part heathy field layer, however around watercourse margins there are <i>Juncus</i> spp. and <i>Sphagna</i> .	TN04_East-south-east
TN05	287708	824192	A1.1.1	<i>Betula</i> spp., <i>Blechnum spicant</i>					Area where the <i>Betula</i> woodland has a field layer dominated with <i>Blechnum spicant</i> and pleurocarpous mosses.	TN05_North-west
TN06	287487	823820	E1.6.1	<i>Calluna vulgaris</i> , <i>Sphagnum papillosum</i> , <i>Trichophorum germanicum</i>	<i>Erica tetralix</i>	<i>Eriophorum angustifolium</i> , <i>Sphagnum capillifolium</i> , <i>Sphagnum cuspidatum</i> .			Blanket bog area which is wetter than the surrounding wet modified bog, and with a higher proportion of Sphagnums characteristic of blanket bog, such as <i>S. papillosum</i> . Species such as <i>T. germanicum</i> and <i>E. tetralix</i> also present in abundance.	TN06_North-east

<sup>2</sup> Abundance for plant species is provided in accordance with the DAFOR scale – Dominant, Abundant, Frequent, Occasional, and Rare.

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>2</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
TN07	289043	823178	A1.2.1						Old remnant <i>Pinus sylvestris</i> trees.	TN07_South
TN08	290038	822085	A1.2.2						Single <i>Populus tremula</i> .	TN08_West
TN09	290585	821128	A1.2.2						Old remnant <i>Pinus sylvestris</i> (single tree).	TN09_South
TN10	289539	814497	-						Badger latrine along fence line.	TN10_NA
TN11	289342	814078	B2.2	<i>Holcus lanatus</i>	<i>Holcus mollis</i> , <i>Festuca rubra</i>	<i>Bellis perennis</i> , <i>Plantago lanceolata</i>			This area was classified as mixed plantation (A1.3.2) in the 2014 survey. However since the 'woodland' trees are present as tree seedlings which have yet to reach 1m in height, it is suggested this area be classified as the B2.2 Phase 1 habitat code.	TN11_East
TN12	289315	813925	B2.2	<i>Holcus lanatus</i>	<i>Holcus mollis</i> , <i>Festuca rubra</i>		<i>Betula</i> spp.		Tree canopy cover is less than 30% in this area, and so it is better described as semi-improved neutral grassland with scattered trees rather than mixed woodland as the 2014 survey suggests. Some tree seedlings have been planted at higher density, but since they are yet to grow to greater than 1m they cannot be classified as trees nor as woodland.	TN12_South
TN13	288674	810853	A1.1.1						Old <i>Pinus sylvestris</i> single tree.	TN13_North-north-west

**Table A.2 Ancient Woodland Target Notes**

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW01	284222	824606	A1.1.1	<i>Betula</i> spp.	<i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>	<i>Pteridium aquilinum</i>	<i>Calluna vulgaris</i> , <i>Vaccinium myrtillus</i> , <i>Juniperus communis</i> , <i>Deschampsia flexuosa</i>		Probable Ancient Woodland. Contains bird nest boxes.	
AW02	287682	824187	A1.2.2	<i>Pinus sylvestris</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>		<i>Vaccinium myrtillus</i> , <i>Blechnum spicant</i> , <i>Plagiothecium undulatum</i> , <i>Thuidium tamariscinum</i> , <i>Dicranum scoparium</i>	<i>Vaccinium vitis-idaea</i> , <i>Deschampsia flexuosa</i> , <i>Agrostis</i> sp., <i>Polytrichum commune</i>		Within Ancient Woodland polygon, <i>Pinus sylvestris</i> plantation. No other woody species and no underscrub layer. Field layer dominated by mosses with some sub-shrubs.	AW02_West
AW03	287732	824088	A1.1.1	<i>Betula</i> spp., <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> sp., <i>Hylocomium splendens</i>		<i>Erica cinerea</i> , <i>Pinus sylvestris</i> , <i>Vaccinium vitis-idaea</i> , <i>Salix</i> sp.		Possible Ancient Woodland remnant.	
AW04	287851	824074							No Ancient Woodland present (except AW03 / R023)	
AW05	284648	824056	A1.1.1	<i>Betula</i> spp.	<i>Hylocomium splendens</i>	<i>Calluna vulgaris</i> , <i>Rhytidiadelphus loreus</i>		<i>Deschampsia cespitosa</i>	Area of dense and young <i>Betula</i> spp. No other woody species.	AW05_North-west
AW06	288593	823736	D1.1	<i>Calluna vulgaris</i>	<i>Hylocomium splendens</i> ,	<i>Vaccinium vitis-idaea</i> ,	<i>Pinus sylvestris</i> , <i>Betula</i> spp.,		Within Ancient Woodland polygon.	AW06_North

<sup>3</sup> Abundance for plant species is provided in accordance with the DAFOR scale – Dominant, Abundant, Frequent, Occasional, and Rare.

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
					<i>Rhytidiadelphus triquetrus</i>	<i>Pleurozium schreberi</i> , <i>Hypnum jutlandicum</i>	<i>Polytrichum commune</i>		The ground flora here is dry heath, dominated by <i>Calluna vulgaris</i> , <i>Vaccinium vitis-idaea</i> and mosses, overtopped by scattered young <i>Pinus sylvestris</i> and <i>Betula</i> . All trees here are of plantation origin and ancient trees are present.	
AW07	288808	823625	A1.3.1	<i>Betula</i> spp.	<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> , <i>Hypnum</i> sp.	<i>Pinus sylvestris</i>			Strip of road verge trees that fall within an Ancient Woodland polygon. <i>Betula</i> with frequent and younger self-sown <i>Pinus sylvestris</i> .	AW07_North-west
AW08	288911	823518	A1.1.1	<i>Betula</i> spp.	<i>Cytisus scoparius</i> , <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> , <i>Hypnum</i> sp.				Part of an Ancient Woodland polygon. Small strip of <i>Betula</i> (young and mature) on outer edge of conifer plantation and road. Quite sparse canopy with abundant <i>Cytisus scoparius</i> in the scrub layer.	AW08_South-south-east
AW09	289026	823242	A1.3.2	<i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> ,		<i>Betula pubescens</i>	<i>Cytisus scoparius</i>			AW09_South-east-east

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>Hylocomium splendens</i>						
AW10	289004	823067	D1.1/B1.1	<i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i>	<i>Calluna vulgaris</i>	<i>Polytrichum commune</i>				
AW11	289267	822923	A2.1	<i>Betula pubescens</i> , <i>Cytisus scoparius</i> , <i>Calluna vulgaris</i>	<i>Molinia caerulea</i> , <i>Hylocomium splendens</i>	<i>Deschampsia flexuosa</i> , regenerating <i>Pinus sylvestris</i>	<i>Fagus sylvatica</i>			AW11_East
AW12	289310	822891	A2.1	<i>Betula pubescens</i> , <i>Cytisus scoparius</i>	<i>Calluna vulgaris</i>	<i>Pteridium aquilinum</i> , <i>Dactylis glomerata</i> , <i>Holcus mollis</i>				
AW13	289377	822870	A1.3.1	<i>Betula</i> spp., <i>Pinus sylvestris</i>					Small patch within Ancient Woodland polygon of young <i>Betula</i> and <i>Pinus sylvestris</i> by road.	AW13_North-west
AW14	289348	822828	A1.1.1	<i>Betula pubescens</i>	<i>Cytisus scoparius</i> , <i>Holcus mollis</i> , <i>Anthoxanthum odoratum</i>	<i>Salix</i> spp., <i>Dactylis glomerata</i>	<i>Fagus sylvatica</i>			AW14_South-east
AW15	289757	822474	A1.1.1	<i>Betula</i> spp.	Pleurocarpous mosses	<i>Calluna vulgaris</i>	<i>Pinus sylvestris</i> , <i>Fagus sylvatica</i>		Embankment by road with immature <i>Betula</i> spp. and occasional <i>Pinus sylvestris</i> and <i>Fagus sylvatica</i> .	AW15_North-west



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW16	289986	822270	A1.2.2	<i>Pinus sylvestris</i>	<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>				Conifer plantation within the Ancient Woodland polygon.	AW16_North-east
AW17	289989	822249	A2.1	<i>Cytisus scoparius</i>					Embankment of dense <i>Cytisus scoparius</i> , no woodland.	AW17_South-east
AW18	289980	822181	A2.2	<i>Cytisus scoparius</i>					Embankment of dense <i>Cytisus scoparius</i> , no woodland	
AW19	290040	822109	A2.2	<i>Cytisus scoparius</i>					Embankment of dense <i>Cytisus scoparius</i> , no woodland	
AW20	290079	822059	A2.2	<i>Cytisus scoparius</i>					Embankment of dense <i>Cytisus scoparius</i> , no woodland	
AW21	290110	822018	A2.2	<i>Cytisus scoparius</i>					Embankment of dense <i>Cytisus scoparius</i> , no woodland	
AW22	290309	821710	B1.1							
AW23	290599	821106	B5	<i>Juncus effusus</i> , <i>Hylocomium splendens</i>	<i>Holcus mollis</i>					
AW24	290700	821000	A1.2.2	<i>Pinus sylvestris</i>					Young <i>Pinus sylvestris</i> plantation within Ancient Woodland polygon.	



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW25	290642	820975	D1.1/B1.1	<i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i>	<i>Calluna vulgaris</i>	<i>Polytrichum commune</i>				
AW26	290710	820826	D1.1/B1.1	<i>Calluna vulgaris</i> , <i>Deschampsia flexuosa</i> , <i>Nardus stricta</i>	<i>Hylocomium splendens</i>	<i>Polytrichum commune</i> , <i>Hypnum</i> spp.	<i>Juncus effusus</i> , <i>Vaccinium myrtillus</i>			
AW27	290713	820803	A3.2	<i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i>	<i>Calluna vulgaris</i>	<i>Polytrichum commune</i>				
AW28	290722	820784	A3.2	<i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i>	<i>Calluna vulgaris</i>	<i>Polytrichum commune</i>				
AW29	290708	820775	B5							
AW30	290795	820735	A1.2.2	<i>Pinus sylvestris</i>					<i>Pinus sylvestris</i> plantation within Ancient Woodland polygon.	
AW31	290832	820390	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>			
AW32	290934	820026	A1.2.2	<i>Pinus sylvestris</i> ,	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium</i>	<i>Betula pubescens</i> ,			AW32_West

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>Vaccinium myrtillus</i>		<i>splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Juniperus communis</i> , <i>Calluna vulgaris</i>			
AW33	290968	819799	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>			
AW34	290949	819697	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>			AW34_North
AW35	291044	819278	A1.1.1	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Vaccinium myrtillus</i>	<i>Agrostis canina</i> , <i>Deschampsia flexuosa</i>	<i>Pteridium aquilinum</i> , <i>Calluna vulgaris</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>				AW35_P1_South-east-east
AW35	291044	819278	A1.1.1	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Vaccinium myrtillus</i>	<i>Agrostis canina</i> , <i>Deschampsia flexuosa</i>	<i>Pteridium aquilinum</i> , <i>Calluna vulgaris</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>				AW35_P2_West
AW36	291042	818671	A1.2.1	<i>Pinus sylvestris</i> , <i>Pteridium aquilinum</i>		<i>Agrostis</i> spp.	<i>Betula pendula</i> saplings		Within Ancient Woodland polygon. <i>Pinus sylvestris</i> in small area of semi-natural woodland which has a thick understorey of <i>Pteridium aquilinum</i> and very few	AW36_North



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									mature trees. No ancient woodland present.	
AW37	290983	818487	A1.1.1	<i>Betula pendula</i> , <i>Betula pubescens</i> , <i>Rhytidiadelphus triquetrus</i> , <i>Thuidium tamariscinum</i>	<i>Juniperus communis</i> , <i>Hylocomium splendens</i> , <i>Agrostis</i> spp.	<i>Betula pendula</i> saplings, <i>Festuca ovina</i>	<i>Pteridium aquilinum</i>		Within Ancient Woodland polygon, semi-natural birch woodland. Understorey layer comprised of <i>Juniperus communis</i> and <i>Pteridium aquilinum</i> with a field layer dominated by mosses and acid grasses.	AW37_South
AW38	290906	817869	B1.2/A1.1.1	<i>Betula pendula</i>	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>		<i>Vaccinium vitis-idaea</i> , <i>Calluna vulgaris</i>	<i>Juniperus communis</i>	Within Ancient Woodland polygon, acid grassland along the electricity pylon wayleave adjacent to the A9 carriageway. A thin strip of <i>Betula</i> spp./ <i>Pinus sylvestris</i> shelterbelt is adjacent to the east which has a heathy/mossy ground flora. The remainder of the Ancient Woodland polygon is comprised of semi-natural broadleaved woodland which has no remnant ancient features.	AW38_South



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									The canopy is open with a lack of woody sub-shrub species and a grassy ground flora. Evidence of heavy browsing by deer or cattle (e.g. grazed shoots, bark stripping) and a general lack of regeneration or balanced age structure. No ancient woodland.	
AW39	290420	817122	A1.2.2	<i>Pinus sylvestris</i>	<i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Pteridium aquilinum</i> , <i>Calluna vulgaris</i>	<i>Betula pendula</i>		Within Ancient Woodland polygon. Homogenous stand of conifer plantation, dominated by <i>Pinus sylvestris</i> with occasional <i>Betula</i> in understorey. Limited light penetration through the dense conifers, rendering the ground flora mainly composed of mosses and bracken. No evidence of ancient woodland.	AW39_East
AW40	290501	817115	A1.1.1	<i>Betula pendula</i> , <i>Betula pubescens</i> , <i>Rhytidiadelphus</i>		<i>Juniperus communis</i> , <i>Pteridium aquilinum</i>	<i>Pinus sylvestris</i>		Within Ancient Woodland polygon. The woodland here is on steeply sloping ground, with many mature	AW40_East



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>triquetrus</i> , <i>Hylocomium splendens</i>					<i>Betula</i> trees fallen and lying as deadwood. Occasional old, specimen <i>Pinus sylvestris</i> trees are present in this area which is more developed than the neighbouring pines in the conifer plantation area. The ground flora is moss-dominated and the understorey lacks young trees or signs of natural regeneration. <i>Juniperus communis</i> scrub and <i>Pteridium aquilinum</i> are the main understorey species.	
AW41	290590	817094	B1.2/A1.1.1	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i> , <i>Betula</i> spp.	<i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>				Within Ancient Woodland polygon, acid grassland on steeply sloping ground. Several old specimen <i>Betula</i> trees with widespread fallen trees and lying deadwood on the steep slopes. No woody species other than birch and a grassy ground flora.	AW41_South





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW42	290391	816883	A1.3.1	<i>Pinus sylvestris</i>	<i>Betula pendula</i> , <i>Betula pubescens</i> , <i>Hylocomium splendens</i> , <i>Rhytidadelphus triquetrus</i>	<i>Calluna vulgaris</i> , <i>Agrostis</i> spp., <i>Pteridium aquilinum</i> , <i>Vaccinium myrtillus</i>	<i>Sphagnum palustre</i> , <i>Polytrichum commune</i>	<i>Juniperus communis</i>	Within Ancient Woodland polygon. Semi-natural mixed woodland with canopy species including <i>Pinus sylvestris</i> and <i>Betula</i> . <i>Larix</i> is present at very low frequency. The woodland area to the west is conifer plantation. Heathy ground flora including acid grasses and shrub species including <i>Juniperus communis</i> , <i>Calluna vulgaris</i> and <i>Vaccinium myrtillus</i> . Evidence of browsing by deer and widespread deer dung. There is little evidence of natural regeneration and a rare occurrence of specimen ancient pine trees.	AW42_South
AW43	290189	816321	D1.1	<i>Calluna vulgaris</i>	<i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>	<i>Pteridium aquilinum</i>	<i>Cytisus scoparius</i> , <i>Vaccinium vitis-idaea</i>		Within Ancient Woodland polygon. Community is dry acid heath overtopped in places by scattered <i>Cytisus scoparius</i> scrub. No evidence of ancient	AW43_North





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									woodland or ancient specimen trees. The adjacent conifer plantation is mature, but not ancient and is of plantation origin.	
AW44	290196	816065	A1.3.1		<i>Betula</i> spp.	<i>Pinus sylvestris</i> (young), <i>Calluna vulgaris</i> , <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> , <i>Hypnum</i> sp.	<i>Deschampsia cespitosa</i> , <i>Rubus fruticosus</i>		Strip of <i>Betula</i> by road verge, falls within part of an Ancient Woodland polygon.	AW44_South
AW45	290082	815832	D1.1	<i>Calluna vulgaris</i> , <i>Pleurozium schreberi</i>	<i>Hylocomium splendens</i> , <i>Deschampsia flexuosa</i>	<i>Pteridium aquilinum</i> , <i>Agrostis</i> spp., <i>Galium saxatile</i> , <i>Vaccinium vitis-idaea</i>			Within Ancient Woodland polygon. Dry heath ground flora, dominated by <i>Calluna vulgaris</i> with mossy ground layer. There is no woodland here, although scattered <i>Pinus sylvestris</i> are present along the road-verge and young scrubby <i>P. sylvestris</i> and <i>Betula</i> spp. are present with <i>Cytisus scoparius</i> within the dry heath. No specimen trees or evidence of ancient woodland.	AW45_North

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW46	290040	815517	A1.1.1	<i>Betula</i> spp.	<i>Agrostis</i> spp., <i>Calluna vulgaris</i> , <i>Rhytidiadelphus</i> spp., <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> .	<i>Festuca</i> sp.	<i>Nardus stricta</i>		Area of <i>Betula</i> woodland within part of an Ancient Woodland polygon. Between the A9 and the fence line there are some young <i>Betula</i> regenerating and mosses dominate the ground flora. However, in the larger woodland area that is not excluded from grazing there is no underscrub layer and mature <i>Betula</i> dominate. Grazing by deer or cattle here has reduced the age diversity of the woodland and the field layer is well grazed with patches of <i>Calluna vulgaris</i> and more grasses present.	AW46_South-south-west
AW47	290062	815504	A1.1.1	<i>Betula</i> sp.					10m strip of semi-natural <i>Betula</i> spp. wood, but not ancient woodland (behind fence line).	
AW48	289928	815419	D1.1	<i>Calluna vulgaris</i> , <i>Pleurozium schreberi</i>	<i>Hylocomium splendens</i> , <i>Deschampsia flexuosa</i>	<i>Festuca ovina</i> , <i>Agrostis</i> spp., <i>Galium saxatile</i> , <i>Rhytidiadelphus triquetrus</i>			Within Ancient Woodland polygon. Area of dry acid heath, dominated by <i>Calluna vulgaris</i> and pleurocarpous	AW48_North



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									mosses which is classified as wet dwarf shrub heath (D2) in 2014 survey. Recommend a change to D1.1 dry acid heath. No evidence of ancient woodland or remnant specimen ancient trees.	
AW49	289858	815370	A1.1.1	<i>Betula</i> spp.	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Holcus mollis</i> , <i>Hylocomium splendens</i>			Within Ancient Woodland polygon, semi-natural <i>Betula</i> woodland. Understorey layer lacks woody species or young trees, showing little potential for natural regeneration. The ground layer is dominated by mosses and acid grasses.	AW49_North
AW50	289963	815189	A1.1.1	<i>Betula</i> spp.					Part of an Ancient Woodland polygon. Canopy is solely <i>Betula</i> over a field layer of slightly acidic grasses and pleurocarpous mosses. There are a number of young <i>Betula</i> also present, particularly closest to the A9 carriageway.	AW50_South-west

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW51	289776	815042	B5	<i>Juncus effusus</i>	<i>Deschampsia cespitosa</i> , <i>Agrostis</i> spp.	<i>Sphagnum fallax</i>			Within Ancient Woodland polygon. Marshy grassland within cattle field. No trees, nor ancient woodland remnants here.	AW51_East
AW52	289525	814509	A1.2.2	<i>Pinus sylvestris</i>		<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>			Within Ancient Woodland polygon. Species-poor conifer plantation, dominated by <i>Pinus sylvestris</i> with no woody sub-shrub species and a ground flora dominated by mosses and <i>Calluna vulgaris</i> .	AW52_West
AW53	289173	811962	A1.1.1	<i>Betula</i> spp., <i>Vaccinium myrtillus</i> , <i>Vaccinium vitis-idaea</i>	<i>Hylocomium splendens</i>	<i>Calluna vulgaris</i>	<i>Pinus sylvestris</i>		Part of an Ancient Woodland polygon, the trees are more mature with a well-developed field layer dominated by sub-shrubs.	AW53_North
AW54	289141	811950	A1.1.1	<i>Betula pendula</i>	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>		<i>Vaccinium vitis-idaea</i> , <i>Calluna vulgaris</i>		Within Ancient Woodland polygon. <i>Betula</i> semi-natural woodland adjacent to the Craigellachie NNR. The ground flora is dominated by pleurocarpous mosses and acid grass species with occasional ericoids including <i>Vaccinium vitis-</i>	AW54_West



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									<i>idaea</i> and <i>Calluna vulgaris</i> . The age structure here suggests there is potential for natural regeneration, most likely due to the deer fencing which has suppressed the browsing rate. There are several older <i>Betula</i> trees and standing and fallen deadwood.	
AW55	289181	811866	A1.1.1	<i>Betula</i> spp.	<i>Agrostis</i> spp., <i>Rhytidiadelphus</i> spp., <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>			<i>Salix</i> spp.	Small part of an Ancient Woodland polygon beside the A9. Field layer is dominated by mosses.	AW55_North-north-west
AW56	289004	811858	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> , <i>Vaccinium myrtillus</i>	<i>Cladonia</i> spp., <i>Vaccinium vitis-idaea</i>		Fairly heavy grazing by deer or cattle. Woodland thinning out at height.	AW56_P1_East
AW56	289004	811858	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> , <i>Vaccinium myrtillus</i>	<i>Cladonia</i> spp., <i>Vaccinium vitis-idaea</i>		Fairly heavy grazing by deer or cattle. Woodland thinning out at height.	AW56_P2_East



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
AW56	289004	811858	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> , <i>Vaccinium myrtillus</i>	<i>Cladonia</i> spp., <i>Vaccinium vitis-idaea</i>		Fairly heavy grazing by deer or cattle. Woodland thinning out at height.	AW56_P3_East
AW57	289151	811658	A1.1.1	<i>Betula pendula</i> , <i>Agrostis</i> spp., <i>Deschampsia flexuosa</i>	<i>Holcus mollis</i> , <i>Festuca rubra</i> , <i>Hylocomium splendens</i>	<i>Galium saxatile</i>	<i>Dryopteris filix-mas</i> , <i>Pteridium aquilinum</i>		Within Ancient Woodland polygon. The woodland here is on steeply sloping ground, with many mature <i>Betula</i> trees fallen and lying as deadwood. Understorey lacks woody species and few signs of natural regeneration. The ground flora is mossy and dominated by acid grassland species.	AW57_West
AW58	289073	811272	A1.1.1	<i>Betula pendula</i>	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>		<i>Vaccinium vitis-idaea</i> , <i>Calluna vulgaris</i>		Within Ancient Woodland polygon. The trees within the A9 road corridor here are most likely of plantation origin and appear contiguous with the semi-natural woodland which extends up-slope onto the surrounding land. The ground flora is	AW58_South-west



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									grassy, dominated by species of acid habitats with occasional ericoids and areas of scattered <i>Cytisus scoparius</i> scrub. It is not considered to be of ancient woodland quality.	
AW59	288871	811160	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>	<i>Cladonia</i> spp.	<i>Cytisus scoparius</i>	Fairly heavy grazing by deer or cattle. Woodland thinning out at height.	AW59_South-south-west
AW60	288536	810779	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>	<i>Cladonia</i> spp.		Fairly heavy grazing. Woodland thinning out at height.	AW60_North
AW61	288570	810753	A1.1.1	<i>Betula pubescens</i> , <i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> , <i>Calluna vulgaris</i>	<i>Ulex europaeus</i> , <i>Juniperus communis</i>	<i>Dactylus glomerata</i>	<i>Rhytidiadelphus triquetrus</i>		Fairly heavy grazing.	
AW62	287701	810454	B4	<i>Lolium perenne</i>					No native woodland.	AW62_West
AW63	287806	810443	A1.1.1	<i>Quercus petraea</i> , <i>Betula pubescens</i> ,	<i>Agrostis</i> spp., <i>Festuca</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> ,			Native woodland present. Very heavily grazed by deer or cattle - no regeneration.	AW63_South





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>Deschampsia flexuosa</i>		<i>Rhytiadelphus triquetrus</i>				
AW64	287541	810408	J4							AW64_West
AW65	287012	810249	B6							
AW66	286936	810217	A1.3.2	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Holcus lanatus</i>	<i>Agrostis</i> spp., <i>Anthoxanthum odoratum</i>	<i>Larix decidua</i> , <i>Alnus glutinosa</i> , <i>Cytisus scoparius</i> , <i>Holcus mollis</i> , <i>Pteridium aquilinum</i> , <i>Hylocomium splendens</i>	<i>Rhytiadelphus triquetrus</i>			AW66_West
AW67	286880	810213	A1.1.1	<i>Betula pubescens</i> , <i>Holcus lanatus</i> , <i>Lolium perenne</i>			<i>Pteridium aquilinum</i> , <i>Urtica dioica</i> , <i>Juncus effusus</i>			AW67_Nothing-east
AW68	287604	810191	A3.1	<i>Betula</i> sp.	<i>Hylocomium splendens</i> , <i>Agrostis</i> sp.	<i>Holcus lanatus</i> , <i>Urtica dioica</i>	<i>Pteridium aquilinum</i> , <i>Poa trivialis</i>		Scattered mature <i>Betula</i> trees - remnant of Ancient Woodland.	AW68_West
AW69	287905	810154	A1.1.1	<i>Betula</i> sp.	<i>Hylocomium splendens</i> , <i>Agrostis</i> sp.	<i>Holcus lanatus</i> , <i>Urtica dioica</i>	<i>Pteridium aquilinum</i> , <i>Poa trivialis</i>		Probably Ancient Woodland <i>Betula</i> wood. Heavily grazed ground for a (semi-improved grassland) with little regeneration.	AW69_Nothing-east
AW70	286570	810099	B2.2							AW70_North-east
AW71	286608	810093	A1.3.2	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> ,	<i>Agrostis</i> spp., <i>Anthoxanthum odoratum</i>	<i>Larix decidua</i> , <i>Alnus glutinosa</i> , <i>Cytisus scoparius</i> ,	<i>Rhytiadelphus triquetrus</i>			AW71_West





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>Holcus lanatus</i>		<i>Holcus mollis</i> , <i>Pteridium aquilinum</i> , <i>Hylocomium splendens</i>				
AW72	286302	810061	D1.1/B1.1	<i>Calluna vulgaris</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Polytrichum commune</i>	<i>Pseudoscleropodium purum</i> , <i>Cladonia</i> spp.		Heavily grazed and very species poor dry heath.	AW72_P1_ West
AW72	286302	810061	D1.1/B1.1	<i>Calluna vulgaris</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Polytrichum commune</i>	<i>Pseudoscleropodium purum</i> , <i>Cladonia</i> spp.		Heavily grazed and very species poor dry heath.	AW72_P2_ East-north-east
AW72	286302	810061	D1.1/B1.1	<i>Calluna vulgaris</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Polytrichum commune</i>	<i>Pseudoscleropodium purum</i> , <i>Cladonia</i> spp.		Heavily grazed and very species poor dry heath.	AW72_P3_ West
AW73	286603	810031	A1.2.2	<i>Larix</i> sp.	<i>Pinus sylvestris</i>				Part of an Ancient Woodland polygon. Woodland is a conifer shelter belt along the A9. Field layer is moss dominated.	AW73_ South-west
AW74	286627	810020	A1.1.1	<i>Betula</i> spp.	<i>Agrostis</i> spp., <i>Holcus</i> spp., <i>Conopodium majus</i>	<i>Rhytidiadelphus squarrosus</i> , <i>R. loreus</i> , <i>Thuidium tamariscinum</i>	<i>Rumex acetosa</i> , <i>Pteridium aquilinum</i>		<i>Betula</i> woodland over a heavily grazed grass sward. Part of an Ancient Woodland polygon.	AW74_ South
AW75	286465	810016	A1.1.1	<i>Betula pubescens</i> , <i>Holcus lanatus</i> , <i>Anthoxanthum odoratum</i>	<i>Holcus mollis</i>	<i>Holcus mollis</i> , <i>Hylocomium splendens</i>	<i>Conopodium majus</i>			



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>3</sup>	Frequent	Occasional	Rare	Description/Notes	Photo Ref & Bearing
AW76	286472	810006	A1.3.2	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Holcus lanatus</i>	<i>Agrostis</i> spp., <i>Anthoxanthum odoratum</i>	<i>Larix decidua</i> , <i>Holcus mollis</i> , <i>Pteridium aquilinum</i> , <i>Hylocomium splendens</i>	<i>Rhytidiadelphus triquetrus</i>			

**Table A.3 Polygon Target Notes**

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/Notes	Photo Ref & Bearing
RP01	282244	826514	D1.1	<i>Calluna vulgaris</i>	<i>Hylocomium splendens</i>	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i>	<i>Betula</i> spp. saplings, <i>Pinus sylvestris</i> saplings, <i>Juncus effusus</i>	<i>Juniperus communis</i> , <i>Ulex europaeus</i>		RP01_East
RP02	282386	826448	B1.2	<i>Festuca rubra</i> , <i>Festuca ovina</i> , <i>Deschampsia flexuosa</i>	<i>Hylocomium splendens</i>	<i>Galium saxatile</i>	<i>Arrhenatherum elatius</i> , <i>Calluna vulgaris</i> , <i>Chamerion angustifolium</i>		Small patch of <i>Chamerion angustifolium</i> among the widespread acid grassland community here.	
RP03	282353	826405	A1.3.1	<i>Betula pendula</i> , <i>Betula pubescens</i>	<i>Larix decidua</i>	<i>Pinus sylvestris</i> , <i>Holcus lanatus</i> , <i>Deschampsia cespitosa</i>			Mixed woodland with <i>Betula</i> -dominated canopy along the A9 carriageway, no understorey structure and grassy ground flora.	RP03_North

<sup>4</sup> Abundance for plant species is provided in accordance with the DAFOR scale – Dominant, Abundant, Frequent, Occasional, and Rare.

Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP04	282677	826385	E2.2	<i>Scorpidium</i> spp. and <i>Campylium stellatum</i>						RP04_North
RP05	282238	826382	B1.2	<i>Deschampsia flexuosa</i>	<i>Festuca ovina</i> , <i>Agrostis canina</i>	<i>Juncus effusus</i>	<i>Nardus stricta</i> , <i>Calluna vulgaris</i> , <i>Juniperus communis</i>			
RP06	282381	826362	D1.1	<i>Calluna vulgaris</i>	<i>Hylocomium splendens</i>	<i>Deschampsia cespitosa</i>	<i>Juniperus communis</i>	<i>Vaccinium vitis-idaea</i> , <i>Ulex europaeus</i>	Dry heath embankment between the A9 shelterbelt woodland and railway line. <i>Juniperus communis</i> bushes can be locally dominant and several of height >2m are present towards the north of this compartment.	RP06_South-east
RP07	282278	826354	B5	<i>Juncus effusus</i> , <i>Hylocomium splendens</i>	<i>Pleurozium schreberi</i>	<i>Festuca ovina</i> , <i>Agrostis canina</i>	<i>Galium saxatile</i>			
RP08	282527	826321	A2.1	<i>Cytisus scoparius</i>	<i>Hylocomium splendens</i>		<i>Deschampsia cespitosa</i>		Scrub beside the road, dominated by <i>Cytisus scoparius</i> with a sparsely vegetated ground flora, dominated by	RP08_North



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									the moss <i>Hylocomium splendens</i> .	
RP09	282580	826278	B5	<i>Juncus effusus</i>	<i>Deschampsia cespitosa</i>					RP09_East
RP10	282646	826231	B1.2	<i>Deschampsia cespitosa</i> , <i>Deschampsia flexuosa</i>	<i>Agrostis</i> spp., <i>Holcus mollis</i>	<i>Juncus effusus</i>	<i>Calluna vulgaris</i> , <i>Cytisus scoparius</i>		Expanse of acid grassland along railway embankment with smaller areas of scattered scrub and dry heath.	RP10_South
RP11	282755 282753	826221 826200	A1.3.1	<i>Betula pendula</i> , <i>Betula pubescens</i>	<i>Larix decidua</i> , <i>Hylocomium splendens</i> , <i>Calluna vulgaris</i>				Mixed semi-natural woodland along the edge of the A9 carriageway	RP11_East
RP12	282566	826217	B1.1	<i>Nardus stricta</i> , <i>Pleurozium schreberi</i>	<i>Hylocomium splendens</i> , <i>Polytrichum commune</i>	<i>Juncus effusus</i>	<i>Agrostis canina</i> , <i>Festuca ovina</i> , <i>Cytisus scoparius</i> , <i>Ulex europaeus</i>			
RP13	282748	826187	D1.1	<i>Calluna vulgaris</i>	<i>Hylocomium splendens</i>		<i>Vaccinium vitis-idaea</i>	<i>Juniperus communis</i>	Dry heath embankment with several areas of bare peat which appear to have been burned in the recent past.	RP13_East
RP14	282790	826102	J4						Bare peat. Area fenced off.	RP14_East



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP15	282864	826044	E1.7	<i>Calluna vulgaris</i>	<i>Eriophorum vaginatum</i>	<i>Juncus squarrosus</i> , <i>Sphagnum capillifolium</i>	<i>Sphagnum fallax</i> , <i>Sphagnum cuspidatum</i>			
RP16	283684	825697	D1.1	<i>Calluna vulgaris</i> , <i>Arctostaphylos uva-ursi</i> , <i>Pleurozium schreberi</i>	<i>Vaccinium vitis-idaea</i> , <i>Hylocomium splendens</i> , <i>Hypnum</i> spp.	<i>Vaccinium myrtillus</i> , <i>Blechnum spicant</i> , small <i>Juniperus communis</i>	<i>Carex binervis</i> , <i>Agrostis</i> spp., <i>Nardus stricta</i> , <i>Erica cinerea</i> , <i>Cladonia</i> spp.		Calluna dominated dry heath with patches of muir burn, where burned <i>Calluna</i> is less rank <i>Arctostaphylos uva-ursi</i> is co-dominant. Numerous small <i>Juniperus communis</i> bushes throughout heath, generally less than 0.5m in height. Ground layer is generally a thick carpet of pleurocarpous mosses.	RP16_North-west
RP17	283854	825557	B1.1	<i>Nardus stricta</i> , <i>Agrostis</i> spp.		<i>Juncus effusus</i> , <i>Hylocomium splendens</i>	<i>Juncus squarrosus</i> , <i>Molinia caerulea</i>	<i>Juniperus communis</i> , <i>Sphagnum fallax</i>	Patch of unimproved grassland within hollow surrounded by dry heath, being grazed by sheep.	RP17_South-west
RP18	283638	825456	I2 / D1.1	<i>Calluna vulgaris</i>	<i>Pinus sylvestris</i>				Exposed rock from cutting,	





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									with patches of D1.1 throughout. No direct access.	
RP19	284009	825446	D1.1	<i>Calluna vulgaris</i> , <i>Vaccinium myrtillus</i> , <i>Pleurozium schreberi</i>	<i>Vaccinium vitis-idaea</i> , <i>Hylocomium splendens</i> , <i>Hypnum</i> spp.	<i>Arctostaphylos uva-ursi</i> , <i>Empetrum nigrum</i> , <i>Erica cinerea</i> , <i>Nardus stricta</i> , <i>Agrostis</i> spp., <i>Blechnum spicant</i> , small <i>Juniperus communis</i>	<i>Carex binervis</i> , <i>Agrostis</i> spp., <i>Nardus stricta</i> , <i>Cladonia</i> spp.		Numerous burned patches where sub-shrubs other than <i>Calluna</i> become dominant or co-dominant.	RP19_North
RP20	284107	825270	A2.1	<i>Juniperus communis</i>	<i>Calluna vulgaris</i>		<i>Vaccinium myrtillus</i>		Low growing (<1m) dense <i>Juniperus communis</i> scrub with abundant <i>Calluna</i> on very steep and rocky slopes with some scree and bare rock. Unsafe to access directly.	RP20_North-west
RP21	283972 283992	824945 824934	A1.1.1	<i>Betula</i> spp., <i>Calluna vulgaris</i>	<i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>	<i>Vaccinium myrtillus</i>	<i>Cladonia</i> spp.			
RP22	284361	824862	A2.2	<i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> , <i>Hypnum</i> spp.	<i>Vaccinium myrtillus</i> , <i>Arctostaphylos uva-ursi</i>	<i>Erica cinerea</i> , <i>Cladonia</i> spp., <i>Racomitrium lanuginosum</i>		Low <i>Juniperus communis</i> scrub with a large heath element.	RP22_West





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP23	283981 284009	824834 824792	D1.1	<i>Calluna vulgaris</i>		<i>Vaccinium myrtillus</i>	<i>Arctostaphylos uva-ursi</i> , <i>Juniperus communis</i> , <i>Pinus sylvestris</i>		Continuation of adjacent polygon	RP23_South-south-west
RP24	284449	824669	A2.1	<i>Juniperus communis</i>	<i>Nardus stricta</i>	<i>Agrostis</i> spp., <i>Pteridium aquilinum</i>	<i>Calluna vulgaris</i>		Dense and low <i>Juniperus communis</i> scrub with acid grassland patches.	RP24_West
RP25	284513	824569	D1.1	<i>Calluna vulgaris</i>	<i>Cladonia</i> spp., <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> , <i>Hypnum</i> spp.	<i>Lycopodium clavatum</i> , <i>Juniperus communis</i>	<i>Vaccinium myrtillus</i> , <i>Arctostaphylos uva-ursi</i> , <i>Pteridium aquilinum</i> , <i>Blechnum spicant</i> , <i>Erica cinerea</i>	<i>Erica tetralix</i>	<i>Calluna</i> very dominant over a carpet of pleurocarpous mosses.	
RP26	287300 286942	824288 824199	A1.2.2	<i>Pinus sylvestris</i> , <i>Hylocomium splendens</i>	<i>Pleurozium schreberi</i>	<i>Calluna vulgaris</i> , <i>Agrostis</i> spp., <i>Vaccinium myrtillus</i> , <i>Rhytidiadelphus loreus</i> , <i>Rhytidiadelphus triquetrus</i> , <i>Pseudoscleropodium purum</i>	<i>Galium saxatile</i> , <i>Blechnum spicant</i> , <i>Polytrichum commune</i> , <i>Dicranum scoparium</i>	<i>Betula</i> spp.	<i>Pinus sylvestris</i> plantation with thick carpets of pleurocarpous mosses.	RP26_West
RP27	287691	824251	A1.1.1	<i>Betula</i> spp., <i>Luzula sylvatica</i>	<i>Hylocomium splendens</i>	<i>Vaccinium myrtillus</i> , <i>Blechnum spicant</i> , <i>Rhytidiadelphus loreus</i>	<i>Salix</i> spp., <i>Pinus sylvestris</i> , <i>Vaccinium vitis-idaea</i>	<i>Fraxinus excelsior</i>	Woodland on slopes between conifer plantation and railway, also in flood plain of small watercourse.	RP27_North-east





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP28	284812	824239	D1.1	<i>Calluna vulgaris</i>	<i>Vaccinium myrtillus</i> , <i>Hylocomium splendens</i>	<i>Juniperus communis</i> , <i>Pteridium aquilinum</i>	<i>Pinus sylvestris</i> , <i>Blechnum spicant</i>			RP28_Nothing-west-west
RP29	285010	824123	A1.2.2	<i>Pinus sylvestris</i>	<i>Vaccinium myrtillus</i> , <i>Hylocomium splendens</i>	<i>Pleurozium schreberi</i>	<i>Calluna vulgaris</i>		Poor ground cover within interior forest. Heavy grazing of <i>Vaccinium myrtillus</i> by deer or cattle.	
RP30	288031	824116	F1	<i>Carex</i> spp. (including <i>Carex rostrata</i> )		<i>Calliergonella cuspidata</i>	<i>Salix</i> spp., <i>Juncus effusus</i> , <i>Equisetum fluviatile</i> , <i>Sphagnum squarrosum</i> , <i>Aulacomnium palustre</i>		Wet area with shallow standing water, sedges dominate, lots of dead sedge material at time of survey. Presence of certain mosses such as <i>Sphagnum squarrosum</i> indicates the habitat is slightly more neutral than acidic.	RP30_Nothing-west-north-west
RP31	287192	824107	D1.1	<i>Calluna vulgaris</i>	<i>Pinus sylvestris</i>	<i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>	<i>Vaccinium vitis-idaea</i> , <i>Arctostaphylos Uva-Ursi</i> , <i>Cytisus scoparius</i> , <i>Cladonia</i> spp.			RP31_Nothing-south-west-west
RP32	286790	824078	D1.1	<i>Calluna vulgaris</i> , <i>Vaccinium</i>	<i>Vaccinium myrtillus</i> , <i>Hylocomium</i>	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i> , <i>Erica</i>	<i>Empetrum nigrum</i>	<i>Poa pratensis</i>	Small area of dry heath by layby, between	RP32_Nothing-north





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>vitis-idaea</i> , <i>Arctostaphylos uva-ursi</i>	<i>splendens</i> , <i>Pleurozium schreberi</i>	<i>cinerea</i> , <i>Rhytidiadelphus squarrosus</i>			minor road and forest edge.	
RP33	285334	824044	D1.1	<i>Calluna vulgaris</i>	<i>Nardus stricta</i>	<i>Vaccinium myrtillus</i>	<i>Juncus squarrosus</i> , <i>Lycopodium clavatum</i>			RP33_South-east
RP34	288501	823948	A1.2.2	<i>Pinus sylvestris</i>	<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i>	<i>Vaccinium vitis-idaea</i>			5m, semi-mature.	RP34_East
RP35	286230	823903	B2.1	<i>Deschampsia cespitosa</i>	<i>Holcus lanatus</i>	<i>Agrostis spp.</i> , <i>Hylocomium splendens</i>	<i>Juncus effusus</i> , <i>Calluna vulgaris</i> , <i>Cytisus scoparius</i>		Patch between minor road and A9.	RP35_West
RP36	286252	823888	A1.2.1	<i>Pinus sylvestris</i>		<i>Deschampsia cespitosa</i> , <i>Juncus effusus</i> , <i>Holcus lanatus</i>	<i>Salix spp.</i>		Small area of self-seeded <i>Pinus sylvestris</i> with a few small <i>Salix spp.</i>	RP36_South-west
RP37	287390	823865	E1.7	<i>Calluna vulgaris</i>	<i>Erica tetralix</i>	<i>Trichophorum germanicum</i> , <i>Eriophorum angustifolium</i>	<i>Sphagnum capillifolium</i> , <i>Sphagnum cuspidatum</i>		Bog vegetation which is somewhat dry and dominated by <i>Calluna vulgaris</i> . In places it is wetter with an assemblage of <i>Sphagnum</i> mosses. <i>Erica tetralix</i> is abundant throughout and sedges such as <i>Eriophorum spp.</i> and <i>Trichophorum sp.</i> are present	





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									at lower frequency.	
RP38	287475	823813	E1.6.1	<i>Calluna vulgaris</i> , <i>Sphagnum papillosum</i> , <i>Trichophorum germanicum</i>	<i>Erica tetralix</i>	<i>Eriophorum angustifolium</i> , <i>Sphagnum capillifolium</i> , <i>Sphagnum cuspidatum</i>			Blanket bog area which is wetter than the surrounding wet modified bog, and with a higher proportion of <i>Sphagnum</i> s characteristic of blanket bog, such as <i>S. papillosum</i> . Species such as <i>Trichophorum germanicum</i> and <i>Erica tetralix</i> also present in abundance.	RP38_North-east
RP39	285050	823810	A1.3.1	<i>Pinus sylvestris</i>	<i>Luzula sylvatica</i>	<i>Betula</i> spp.	<i>Fraxinus excelsior</i> , <i>Calluna vulgaris</i> , <i>Vaccinium myrtillus</i>	<i>Juniperus communis</i>		RP39_South
RP40	289199	823244	A1.2.2	<i>Pinus sylvestris</i>	<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i>	<i>Vaccinium myrtillus</i> , <i>Pleurozium schreberi</i>			Mature plantation	RP40_P1_North-east
RP41	289026	823242	A1.3.2	<i>Pinus sylvestris</i> , <i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i>		<i>Betula pubescens</i>	<i>Cytisus scoparius</i>		No ancient woodland present.	RP41_South-east-east



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP42	289022	823035	A1.2.2	<i>Pinus sylvestris</i>	<i>Deschampsia flexuosa</i> , <i>Nardus stricta</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> ,	<i>Betula pubescens</i> , <i>Calluna vulgaris</i>			RP42_North-north-west
RP43	289267	822923	A2.1	<i>Betula pubescens</i> , <i>Cytisus scoparius</i> , <i>Calluna vulgaris</i>	<i>Molinia caerulea</i> , <i>Hylocomium splendens</i>	<i>Deschampsia flexuosa</i> , <i>regenerating Pinus sylvestris</i>	<i>Fagus sylvatica</i>		No ancient native semi-natural woodland	RP43_East
RP44	289477 289584	822904 822807	B2.2	<i>Dactylis glomerata</i>		<i>Holcus lanatus</i> , <i>Agrostis</i> spp.	<i>Cynosurus cristatus</i> , <i>Deschampsia cespitosa</i> , <i>Rumex obtusifolius</i>		Very tussocky with dominant <i>Dactylis glomerata</i>	RP44_South-east
RP45	289463	822896	A1.1.1		<i>Betula</i> spp., <i>Dactylis glomerata</i> , <i>Holcus lanatus</i>		<i>Fraxinus excelsior</i> , <i>Prunus avium</i> , <i>Cytisus scoparius</i> , <i>Pteridium aquilinum</i>	<i>Corylus avellana</i> , <i>Acer pseudoplatanus</i>	Woodland on steep bank by road.	RP45_South-east
RP45	289463 289507	822896 822850	A1.1.1		<i>Betula</i> spp., <i>Dactylis glomerata</i> , <i>Holcus lanatus</i>		<i>Fraxinus excelsior</i> , <i>Prunus avium</i> , <i>Cytisus scoparius</i> , <i>Pteridium aquilinum</i>	<i>Corylus avellana</i> , <i>Acer pseudoplatanus</i>	Woodland on steep bank by road.	RP45_South-east
RP46	289348	822828	A1.1.1	<i>Betula pubescens</i>	<i>Cytisus scoparius</i> , <i>Holcus mollis</i> , <i>Anthoxanthum odoratum</i>	<i>Salix</i> spp., <i>Dactylis glomerata</i>	<i>Fagus sylvatica</i>		Heavily grazed by sheep and deer.	RP46_South-east
RP47	289734	822687	B4	<i>Lolium perenne</i>		<i>Bellis perennis</i>			Improved grassland with very short grazed sward grazed by	RP47_South-west



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									sheep and deer.	
RP48	289811	822422	A1.1.1	<i>Betula</i> spp.			<i>Pinus sylvestris</i> , <i>Fagus sylvatica</i>		Narrow strip of woodland by road edge.	RP48_South-east
RP49	289941	822345	A1.1.1	<i>Betula</i> sp.		<i>Deschampsia cespitosa</i> , <i>Hylocomium splendens</i>	<i>Juncus effusus</i> , <i>Cytisus scoparius</i> , <i>Salix</i> sp.		Mature birch wood (15m) - possible fragments of Ancient Woodland as per adjacent polygon.	
RP50	289980 290040 290079 290110	822181 822109 822059 822018	A2.2	<i>Cytisus scoparius</i>					No ancient semi-natural woodland present.	
RP51	290420	821338	E1.7	<i>Eriophorum vaginatum</i> , <i>Sphagnum capillifolium</i>	<i>Deschampsia flexuosa</i> , <i>Calluna vulgaris</i>	<i>Polytrichum commune</i> , <i>Juncus effusus</i>	<i>Hylocomium splendens</i> , <i>Sphagnum fallax</i> , <i>Sphagnum cuspidatum</i> , <i>Vaccinium myrtillus</i>		Not dry heath as per original P1	
RP52	290522	821211	E1.7	<i>Eriophorum vaginatum</i> , <i>Sphagnum capillifolium</i>	<i>Deschampsia flexuosa</i> , <i>Calluna vulgaris</i>	<i>Polytrichum commune</i> , <i>Juncus effusus</i>	<i>Hylocomium splendens</i> , <i>Sphagnum fallax</i> , <i>Sphagnum cuspidatum</i> , <i>Vaccinium myrtillus</i>		Not dry heath as per original P1	RP52_South-west-west
RP53	290820	820896	E1.7	<i>Molinia caerulea</i>	<i>Sphagnum fallax</i> , <i>Sphagnum palustre</i>	<i>Erica tetralix</i> , <i>Polytrichum commune</i>	<i>Calluna vulgaris</i> , <i>Eriophorum vaginatum</i> , <i>Juncus effusus</i> , <i>Myrica gale</i> , <i>Deschampsia cespitosa</i> ,		Small area of wet <i>Molinia caerulea</i> mire in hollow by railway,	RP53_South-east





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
							<i>Sphagnum papillosum</i> , young <i>Pinus sylvestris</i>		encroachment by conifers.	
RP54	290577 290649	820855 820722	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>		Some old <i>Pinus sylvestris</i> - elements of Ancient Woodland present.	RP54_East
RP55	290710	820826	D5	<i>Calluna vulgaris</i> , <i>Deschampsia flexuosa</i> , <i>Nardus stricta</i>	<i>Hylocomium splendens</i>	<i>Polytrichum commune</i> , <i>Hypnum</i> spp.	<i>Juncus effusus</i> , <i>Vaccinium myrtillus</i>		No Ancient Woodland.	
RP56	290895	820748	A1.2.2	<i>Pinus sylvestris</i>	<i>Deschampsia flexuosa</i> , <i>Hylocomium splendens</i>	<i>Calluna vulgaris</i>	<i>Vaccinium myrtillus</i> , <i>Betula</i> sp.		Mature plantation - continuation of adjacent polygon	RP56_North
RP57	290832	820390	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>		No native broadleaves - all plantation.	
RP58	290935	820026	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>		No native broadleaves - all plantation.	RP58_West
RP59	290949	819697	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>		No native broadleaves - all plantation.	RP59_North





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP60	290841	819662	A1.2.2	<i>Pinus sylvestris</i> , <i>Vaccinium myrtillus</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>			RP60_South
RP61	291044	819278	A1.1.1	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Vaccinium myrtillus</i>	<i>Agrostis canina</i> , <i>Deschampsia flexuosa</i>	<i>Pteridium aquilinum</i> , <i>Calluna vulgaris</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>			One mature <i>Pinus sylvestris</i> and others young. Some regeneration occurring however considerable signs of red and roe deer (dung present) and heavy grazing on dwarf shrubs and regenerating trees.	RP_61_P1_West
RP62	290956 290966 290975	819012 818966 818965	A1.1.1	<i>Betula pubescens</i> , <i>Pinus sylvestris</i> , <i>Quercus petraea</i> , <i>Calluna vulgaris</i> , <i>Deschampsia flexuosa</i>	<i>Ulex europaeus</i> , <i>Juniperus communis</i> , <i>Vaccinium myrtillus</i>	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>	<i>Dactylis glomerata</i>		In between tracks - close to cottages in wood. Heavily grazed by deer.	
RP63	290922	818489	A2.2	<i>Juniperus communis</i>	<i>Holcus lanatus</i> , <i>Agrostis</i> spp.	<i>Hylocomium splendens</i> , <i>Rhytidiadelphus squarrosus</i>			Area recorded in 2014 as B2.1 unimproved neutral grassland.	RP63_South





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									Since the <i>Juniperus communis</i> is so dominant in this community it is better described as scattered scrub over B2.1.	
RP64	290960 290954 290875 290921 290906 290888 290869	818457 818426 818426 818415 818405 818378 818354	A1.1.1	<i>Betula pendula</i> , <i>Betula pubescens</i>	<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i>	<i>Juniperus communis</i> , <i>Pteridium aquilinum</i>	<i>Agrostis</i> spp., <i>Deschampsia flexuosa</i> , <i>Galium saxatile</i> , <i>Carex nigra</i>	<i>Pinus sylvestris</i>	Continuation of the surrounding broadleaved semi-natural woodland. Canopy dominated by <i>Betula</i> with rare mature <i>Pinus sylvestris</i> . The ground flora is heathy and understorey layer of <i>Juniperus communis</i> bushes and <i>Pteridium aquilinum</i> .	
RP65	290639	817352	A1.1.1	<i>Betula pendula</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Juniperus communis</i> , <i>Pteridium aquilinum</i>	<i>Betula pubescens</i> , <i>Deschampsia flexuosa</i>		Continuation of the surrounding broadleaved woodland, dominated by mature <i>Betula</i> trees. Poor age structure with little evidence	





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									of natural regeneration. Mossy ground flora and frequent bushes of <i>Juniperus communis</i> in the understorey.	
RP66	290494 290420 290349	817316 817280 817105	A1.2.2	<i>Pinus sylvestris</i>	<i>Larix decidua</i> , <i>Hylocomium splendens</i> , <i>Calluna vulgaris</i>	<i>Agrostis</i> spp., <i>Rhytidiadelphus triquetrus</i>	<i>Juncus effusus</i>	<i>Pteridium aquilinum</i>	Conifer plantation with very few vascular plant species in the understorey and ground flora, this being mainly comprised of the mosses <i>Hylocomium splendens</i> and <i>Rhytidiadelphus triquetrus</i> .	
RP67	290542	817280	A1.1.1	<i>Betula pendula</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Juniperus communis</i> , <i>Pteridium aquilinum</i>	<i>Betula pubescens</i> , <i>Deschampsia flexuosa</i>		Continuation of the surrounding broadleaved woodland, dominated by mature birch trees. Poor age structure with little evidence of natural regeneration. Mossy ground flora and frequent	



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									bushes of <i>Juniperus communis</i> in the understorey.	
RP68	290713	817249	A2.2	<i>Betula</i> spp. saplings	<i>Calluna vulgaris</i> , <i>Hylocomium splendens</i>	<i>Holcus lanatus</i> , <i>Agrostis</i> spp.	<i>Cytisus scoparius</i>		Dry heath with dense scrub of young <i>Betula</i> of less than 2m height on the A9 road verge.	
RP69	290592 290603 290566	817040 817032 817008	A1.1.1	<i>Betula</i> spp.	<i>Pteridium aquilinum</i> , <i>Rhytidiadelphus</i> spp., <i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i>	<i>Agrostis</i> spp.	<i>Festuca</i> sp.		Patch on slope beside A9.	RP69_West
RP70	290526	816671	B5	<i>Juncus effusus</i>		<i>Carex rostrata</i>			Small area within polygon more swamp like with <i>Carex rostrata</i> dominant.	
RP71	290187	815540	E3.2	<i>Sphagnum fallax</i> , <i>S. capillifolium</i>	<i>Juncus effusus</i>	<i>Molinia caerulea</i> , <i>Sphagnum cuspidatum</i> , <i>S. teres</i> , <i>S. squarrosum</i> , <i>Polytrichum commune</i>	<i>Carex</i> spp.		Small area of basin mire type vegetation, enclosed in hollow surrounded by woodland. Some shallow open standing water and the mire has a quaking surface dominated by	RP71_North-west



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									<i>Sphagna</i> . Likely to have been a former pond now undergoing seral succession. Some of the <i>Sphagna</i> indicate it is slightly more neutral than acidic (e.g. <i>S. squarrosum</i> and <i>S. teres</i> ).	
RP72	290160 290143	815412 815328	A1.1.1	<i>Betula</i> spp.					<i>Betula</i> woodland with grazed acid grasses in field layer.	RP72_North-west
RP73	289805	815345	B2.2	<i>Agrostis</i> spp., <i>Holcus lanatus</i>	<i>Juncus effusus</i>	<i>Deschampsia cespitosa</i>			Strip of semi-improved grassland next to a small stream (less than 0.5m wide) which runs adjacent to the dry heath community. The stream banks are vegetated with neutral grassland and scattered mature <i>Betula</i> trees.	RP73_North



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP74	289766	815323	A1.1.1	<i>Betula</i> spp.	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Holcus mollis</i> , <i>Hylocomium splendens</i>			Strip of broadleaved semi-natural woodland adjacent to neutral grassland glade. Understorey lacks woody sub-shrub species, with a grassy ground flora dominated by acid grassland species and pleurocarpous mosses.	
RP75	290096	815292	B5	<i>Juncus effusus</i>						RP75_North-west
RP76	290076	815172	D5	<i>Agrostis</i> sp., <i>Deschampsia flexuosa</i>		<i>Calluna vulgaris</i>			Acid grassland / dry heath mosaic ride within forestry	
RP77	289679	814803	B5	<i>Juncus effusus</i>	<i>Deschampsia cespitosa</i> , <i>Agrostis</i> spp.	<i>Sphagnum fallax</i>			Area of marshy grassland which is mapped as B2.2 grassland in the 2014 survey.	RP77_South
RP78	289318	813953	B2.2	<i>Holcus lanatus</i>	<i>Holcus mollis</i> , <i>Festuca rubra</i>	Bare ground	<i>Betula</i> spp.		Scattered broadleaved trees ( <i>Betula</i> ) A3.1 over semi-improved neutral grass	RP78_East





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
									verges (B2.2) with a significant track leading to the pedestrian A9 underpass.	
RP79	289270 289232 289251 289199	813902 813850 813846 813767	J1.2	<i>Lolium</i> spp.					Amenity grassland and house gardens.	RP79_South
RP80	289004	811858	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> , <i>Vaccinium myrtillus</i>	<i>Cladonia</i> spp., <i>Vaccinium vitis-idaea</i>		Fairly heavy grazing. Woodland thinning out at height.	RP80_P1_East
RP81	288636	810916	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i> , <i>Molinia caerulea</i>	<i>Deschampsia flexuosa</i>	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>	<i>Cladonia</i> spp.		Original Phase 1 not correct.	RP81_P1_South-east-east
RP82	288962 288888	810884 810869	A1.3.2	<i>Betula</i> sp., <i>Pinus Sylvestris</i>	<i>Hylocomium splendens</i>	<i>Deschampsia cespitosa</i>	<i>Juncus effusus</i> , <i>Cirsium vulgare</i> , <i>Centaurea nigra</i>		Mixed plantation with young saplings, with semi-improved neutral ground layer	RP82_South-west
RP83	288478	810883	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> ,	<i>Deschampsia flexuosa</i>	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> ,	<i>Cladonia</i> spp.		Fairly heavy grazing by deer or sheep. Woodland	RP83_East





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
				<i>Calluna vulgaris</i> , <i>Molinia caerulea</i>		<i>Hylocomium splendens</i>			thinning out at height.	
RP84	288536	810779	A1.1.1	<i>Betula pubescens</i> , <i>Juniperus communis</i> , <i>Calluna vulgaris</i>	<i>Deschampsia flexuosa</i> , <i>Agrostis</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i>	<i>Cladonia</i> spp.		Fairly heavy grazing. Woodland thinning out at height.	RP84_North
RP85	287652 287774	810512 810505	A1.1.1	<i>Quercus petraea</i> , <i>Betula pubescens</i> , <i>Deschampsia flexuosa</i>	<i>Agrostis</i> spp., <i>Festuca</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>	<i>Dactylis glomerata</i>		No regeneration. Very heavy grazing and signs deer (dung).	RP85_East
RP86	287759 287806	810500 810443	A1.1.1	<i>Quercus petraea</i> , <i>Betula pubescens</i> , <i>Deschampsia flexuosa</i>	<i>Agrostis</i> spp., <i>Festuca</i> spp.	<i>Pteridium aquilinum</i> , <i>Pleurozium schreberi</i> , <i>Hylocomium splendens</i> , <i>Rhytidiadelphus triquetrus</i>			Native woodland present. Very heavily grazed by deer or sheep - no regeneration.	RP86_South
RP87	287482	810356	B4	<i>Lolium perenne</i>					Phase 1 not correct (poor semi improved grassland)	RP87_West
RP88	288280	810347	A2.1	<i>Salix</i> spp.					Low dense scrub within marshy grassland.	RP88_North-east
RP89	286997	810345	A1.1.1	<i>Quercus robur</i>	<i>Deschampsia flexuosa</i>	<i>Agrostis canina</i> , <i>Hylocomium splendens</i>	<i>Polytrichum commune</i> , <i>Pteridium</i>		Very heavily grazed by deer or sheep. No	RP89_North



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
							<i>aquilinum</i> , <i>Rhytidiadelphus triquetrus</i>		woodland understory vegetation.	
RP90	288272	810313	B5	<i>Juncus effusus</i>					<i>Juncus</i> spp. dominated area in poorly drained hollow.	RP90_East-north-east
RP91	287108 287143	810302 810285	B2.2	<i>Dactylus glomerata</i> , <i>Agrostis</i> spp., <i>Lolium perenne</i>	<i>Holcus lanatus</i> , <i>Cynosurus cristatus</i> , <i>Anthoxanthum odoratum</i>	<i>Poa</i> spp.	<i>Hylocomium splendens</i> , <i>Cytisus scoparius</i> , <i>Betula</i> seedlings			RP91_North-north-west
RP92	286936	810217	A1.3.2	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Holcus lanatus</i>	<i>Agrostis</i> spp., <i>Anthoxanthum odoratum</i>	<i>Larix decidua</i> , <i>Alnus glutinosa</i> , <i>Cytisus scoparius</i> , <i>Holcus mollis</i> , <i>Pteridium aquilinum</i> , <i>Hylocomium splendens</i>	<i>Rhytidiadelphus triquetrus</i>		No Ancient Woodland present - all derived from plantation or regen from plantation	RP92_West
RP93	286880	810213	A1.1.1	<i>Betula pubescens</i> , <i>Holcus lanatus</i> , <i>Lolium perenne</i>			<i>Pteridium aquilinum</i> , <i>Urtica dioica</i> , <i>Juncus effusus</i>		Heavily grazed by sheep. <i>Betula</i> wood hosts elements of ancient woodland.	RP93_North-east-east
RP94	288199 288090	810209 810125	A1.1.1	<i>Betula</i> spp.					Quite scattered <i>Betula</i> woodland over a heavily deer or sheep grazed grass sward.	RP94_East
RP95	286914	810173	A1.2.2	<i>Pinus sylvestris</i>			<i>Pinus contorta</i>		Not Ancient Woodland.	RP95_East



Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
RP96	286490	810165	B4	<i>Lolium perenne</i>						RP96_East
RP97	287501	810158	G1		<i>Juncus effusus</i>		<i>Betula</i> sp.		Pond used for duck shooting - little emergent vegetation visible	RP97_North-north-west
RP98	287905	810154	A1.1.1	<i>Betula</i> sp.	<i>Hylocomium splendens</i> , <i>Agrostis</i> sp.	<i>Holcus lanatus</i> , <i>Urtica dioica</i>	<i>Pteridium aquilinum</i> , <i>Poa trivialis</i>		Probably Ancient Woodland <i>Betula</i> wood. Heavily grazed ground flora (semi improved Grassland) with little regeneration.	RP98_North-east
RP99	286570	810099	B2.2						Phase 1 correct (semi improved field) 2 old oak trees - remnants of ancient woodland.	RP99_North-east
RP100	286608	810093	A1.3.2	<i>Pinus sylvestris</i> , <i>Betula pubescens</i> , <i>Holcus lanatus</i>	<i>Agrostis</i> spp., <i>Anthoxanthum odoratum</i>	<i>Larix decidua</i> , <i>Alnus glutinosa</i> , <i>Cytisus scoparius</i> , <i>Holcus mollis</i> , <i>Pteridium aquilinum</i> , <i>Hylocomium splendens</i>	<i>Rhytidiadelphus triquetrus</i>		Mixed plantation. Planting for the A9 and also self-seeding. No ancient woodland.	RP100_South-west-west
RP101	286326	810078	E1.7	<i>Calluna vulgaris</i> , <i>Molinia caerulea</i>	<i>Sphagnum capillifolium</i>	<i>Pleurozium schreberi</i> , <i>Nardus stricta</i> ,	<i>Erica cinerea</i> , <i>Sphagnum fallax</i> , <i>Sphagnum cuspidatum</i>			RP101_West





Target Note ID	Easting	Northing	Phase 1 Habitat Code	Dominant	Abundant <sup>4</sup>	Frequent	Occasional	Rare	Description/ Notes	Photo Ref & Bearing
						<i>Juncus squarrosus</i>				
RP102	287523	810077	A1.1.1	<i>Betula</i> sp.	<i>Hylocomium splendens</i> , <i>Agrostis</i> sp.		<i>Potentilla erecta</i>		Mature birch wood, probable Ancient Woodland.	RP102_West
RP103	286078	809954	D1.1	<i>Calluna vulgaris</i> , <i>Molinia caerulea</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Polytrichum commune</i>	<i>Pteridium aquilinum</i> <i>Pseudoscleropodium purum</i> , <i>Cladonia</i> spp.		Heavily deer or sheep grazed and very species poor dry heath.	RP103_P1_West
RP104	286697	809936	A1.1.1	<i>Betula</i> spp.	<i>Agrostis</i> spp., <i>Holcus</i> spp., <i>Conopodium majus</i>	<i>Rhytidiadelphus squarrosus</i> , <i>R. loreus</i> , <i>Thuidium tamariscinum</i>	<i>Rumex acetosa</i> , <i>Pteridium aquilinum</i>		<i>Betula</i> woodland over a heavily grazed grass sward.	RP104_North-west
RP105	287811	809912	A1.2.2	<i>Pinus sylvestris</i>	<i>Rhytidiadelphus</i> spp., <i>Hylocomium splendens</i>	<i>Vaccinium myrtillus</i> , <i>Vaccinium vitis-idaea</i> , <i>Deschampsia flexuosa</i> , <i>Dicranum scoparium</i>		<i>Betula</i> spp.	Quite mature <i>Pinus sylvestris</i> plantation with field layer alternating between areas dominated by mosses and areas where sub-shrubs become frequent and locally abundant.	RP105_South-west
RP106	285747	809776	D1.1	<i>Calluna vulgaris</i> , <i>Molinia caerulea</i>	<i>Rhytidiadelphus triquetrus</i> , <i>Hylocomium splendens</i>	<i>Polytrichum commune</i>	<i>Pteridium aquilinum</i> , <i>Pseudoscleropodium purum</i> , <i>Cladonia</i> spp.			RP106_West



Table A.4 Botanical Species List

Latin name	Common name
<i>Acer pseudoplatanus</i>	Sycamore
<i>Agrostis spp.</i>	Bents (grasses)
<i>Alnus glutinosa</i>	Alder
<i>Alopecurus pratensis</i>	Meadow foxtail
<i>Anthoxanthum odoratum</i>	Sweet vernal grass
<i>Arctostaphylos uva-ursi</i>	Bearberry
<i>Aulacomnium palustre</i>	Bog bead-moss
<i>Bellis perennis</i>	Daisy
<i>Betula spp.</i>	Birches
<i>Blechnum spicant</i>	Hard fern
<i>Brachythecium rivulare</i>	River feather-moss
<i>Brachythecium rutabulum</i>	Rough-stalked feather moss
<i>Calliergonella cuspidata</i>	Pointed spear-moss
<i>Calluna vulgaris</i>	Heather
<i>Campylium stellatum</i>	Yellow starry feather-moss
<i>Carex binervis</i>	Green-ribbed sedge
<i>Carex nigra</i>	Common sedge
<i>Carex rostrata</i>	Bottle sedge
<i>Carex spp.</i>	Sedges
<i>Centaurea nigra</i>	Common knapweed
<i>Chamerion angustifolium</i>	Rosebay willowherb
<i>Cirsium vulgare</i>	Spear thistle
<i>Cladonia spp.</i>	Lichens
<i>Conopodium majus</i>	Pignut
<i>Corylus avellana</i>	Hazel
<i>Cynosurus cristatus</i>	Crested dogs-tail
<i>Cytisus scoparius</i>	Broom
<i>Dactylis glomerata</i>	Cock's-foot
<i>Deschampsia cespitosa</i>	Tufted hair-grass
<i>Deschampsia flexuosa</i>	Wavy hair-grass
<i>Dicranum scoparium</i>	Broom fork-moss
<i>Dryopteris dilatata</i>	Broad buckler-fern
<i>Empetrum nigrum</i>	Crowberry
<i>Equisetum fluviatile</i>	Water horsetail
<i>Erica cinerea</i>	Bell heather
<i>Erica tetralix</i>	Cross-leaved heath
<i>Eriophorum angustifolium</i>	Common cottongrass
<i>Eriophorum vaginatum</i>	Hare's-tail cottongrass



Latin name	Common name
<i>Fagus sylvatica</i>	Beech
<i>Festuca spp.</i>	Fescues (grasses)
<i>Fraxinus excelsior</i>	Ash
<i>Galium saxatile</i>	Heath bedstraw
<i>Holcus lanatus</i>	Yorkshire fog
<i>Holcus mollis</i>	Creeping soft grass
<i>Hylocomium splendens</i>	Glittering wood-moss
<i>Hypnum jutlandicum</i>	Heath plait-moss
<i>Juncus effusus</i>	Soft rush
<i>Juncus squarrosus</i>	Heath rush
<i>Juniperus communis</i>	Juniper
<i>Larix spp.</i>	Larch species
<i>Lolium perenne</i>	Perennial rye grass
<i>Luzula sylvatica</i>	Greater woodrush
<i>Lycopodium clavatum</i>	Stag's-horn clubmoss
<i>Molinia caerulea</i>	Purple moor grass
<i>Myrica gale</i>	Bog myrtle
<i>Nardus stricta</i>	Mat grass
<i>Picea sitchensis</i>	Sitka spruce
<i>Pinus contorta</i>	Lodgepole pine
<i>Pinus sylvestris</i>	Scots pine
<i>Plagiothecium undulatum</i>	Waved silk-moss
<i>Pleurozium schreberi</i>	Red-stemmed feather-moss
<i>Poa pratensis</i>	Smooth meadow grass
<i>Poa trivialis</i>	Rough meadow grass
<i>Polytrichum commune</i>	Common haircap
<i>Potentilla erecta</i>	Tormentil
<i>Prunella vulgaris</i>	Self-heal
<i>Pseudoscleropodium purum</i>	Neat feather-moss
<i>Pteridium aquilinum</i>	Bracken
<i>Quercus spp.</i>	Oak
<i>Racomitrium lanuginosum</i>	Woolly fringe-moss
<i>Ranunculus repens</i>	Creeping buttercup
<i>Rhytidiadelphus loreus</i>	Little shaggy-moss
<i>Rhytidiadelphus squarrosus</i>	Springy turf-moss
<i>Rhytidiadelphus triquetrus</i>	Big shaggy-moss
<i>Rosa canina</i>	Dog-rose
<i>Rubus fruticosus agg.</i>	Bramble
<i>Rumex acetosa</i>	Common sorrel





Latin name	Common name
<i>Rumex obtusifolius</i>	Broad-leaved dock
<i>Salix spp.</i>	Willow species
<i>Scorpidium revolvens</i>	Rusty hook-moss
<i>Scorpidium scorpioides</i>	Hooked scorpion-moss
<i>Sorbus aucuparia</i>	Rowan
<i>Sphagnum capillifolium</i>	Acute-leaved/red bog moss
<i>Sphagnum cuspidatum</i>	Feathery bog moss
<i>Sphagnum fallax</i>	Flat-topped bog moss
<i>Sphagnum palustre</i>	Blunt-leaved bog moss
<i>Sphagnum papillosum</i>	Papillose bog moss
<i>Sphagnum squarrosum</i>	Spiky bog moss
<i>Sphagnum teres</i>	Rigid bog moss
<i>Thuidium tamariscinum</i>	Common tamarisk moss
<i>Trichophorum germanicum</i>	Deergrass
<i>Tussilago farfara</i>	Coltsfoot
<i>Ulex europaeus</i>	Gorse
<i>Urtica dioica</i>	Common nettle
<i>Vaccinium myrtillus</i>	Bilberry
<i>Vaccinium vitis-idaea</i>	Cowberry