

Appendix A12.8

Invertebrates



Table of contents

Chapter	Pages
1. Introduction	1
2. Methodology	2
2.1. Desk Study	2
2.2. Field Survey	2
2.3. Limitations	5
3. Results	6
3.1. Desk Study	6
3.2. Field Survey	7
4. Valuation	8
5. Conclusions	9
6. References	9
Annex A.	11
A.1. Cairngorm LBAP Priority Invertebrate Species	11
Annex B.	12
B.1. Verge habitat suitable for bees	12
B.2. Verge habitat suitable for wood ants	13

Tables

Table A2.1: Importance Criteria	3
Table A3.1: Desk Study Invertebrate Records	6
Table A3.2: CNPA Priority Records located within the Scheme Footprint	6
Table A3.3: Invertebrate Points of Interest	7
Table A4.1: Invertebrate Valuation	8

1. Introduction

- 1.1.1. This technical appendix provides details of the assessment of invertebrates within the vicinity of the Proposed Scheme. The information in this appendix has been used to inform the Design Manual for Roads and Bridges (DMRB) Stage 3 Assessment.
- 1.1.2. Studies reported in this technical appendix relate to the gathering of baseline information which comprised:
- collation of all species on the Scottish Biodiversity List (SBLⁱ) and the Cairngorms Local Biodiversity Action Plan (LBAPⁱⁱ) to form a long-list of species for initial consideration
 - review of information on all species on this list to determine their habitat preferences and distribution
 - collation of biological records of invertebrates
 - based on the above information, targeted site visits to assess the habitat suitability for invertebrates
- 1.1.3. This technical appendix does not cover aquatic invertebrates, these are considered within Appendix A12.3 Aquatic Ecology.

2. Methodology

2.1. Desk Study

- 2.1.1. The focus of the desk study included the compilation of a long list of the species on the SBL and the Cairngorms LBAP, in order to develop a list of sites for targeted site visits, based on the key species likely to be present in habitats affected by the Proposed Scheme.
- 2.1.2. The 2014 Phase 1 habitat survey results (CH2MHill, June 2015ⁱⁱⁱ) were assessed for potentially suitable invertebrate habitat. These habitats were then ground 'truthed' during the field survey, as a Phase 1 habitat survey does not give enough detail to be sure of their suitability for invertebrates.
- 2.1.3. The Cairngorms National Park Authority (CNPA) provided a list of priority species for consideration within the DMRB Stage 3 Assessment. This list was created using the priority species list within the Cairngorms LBAP. The list contained 1200 species and was filtered down by the CNPA to 360 species based on rarity (see Annex A for priority invertebrate species). The CNPA provided records for these species, alongside details of areas with potential to support such species based on a review of the Phase 1 habitat survey results.
- 2.1.4. While the Proposed Scheme is outwith the Cairngorms National Park, there is potential that species may be present in similar suitable habitats outside the Park.
- 2.1.5. The records provided were prioritised as either "Red" or "Amber" as follows:
- The Red species are those of highest priority, where there are records in the corridor and they are species and habitats which are particularly vulnerable and high priority for conservation. This includes for example aspen trees or confirmed records of a Cairngorms LBAP species.
 - Amber species are still considered high priority, but they are instances where there are no confirmed records but an indication of habitat suitability had been provided by an expert in that particular group.
- 2.1.6. The detailed locations of red and amber species has been reviewed against the field survey information recorded in September 2015 to look for correlations.
- 2.1.7. Biological records of invertebrates were requested from the Highland Biological Recording Group (HBRG) and the North East Biological Records Centre (NESBrec) within 1km of the existing A9.
- 2.1.8. The habitat preferences and known ranges of these species were researched in order to refine the list, such that a species was included if:
- habitats or features that support the species were present or likely to be present along the Proposed Scheme
 - the Proposed Scheme is in the known or likely range of the species

2.2. Field Survey

- 2.2.1. Field surveys were undertaken on the 21st to 24th September 2015 to search for key habitats or features of potential importance to the species on the CNPA priority species



list. These included modified blanket bogs, wet heath, acid grasslands, flowery verges, disused quarries and woodland fringes. All dominant habitat types were surveyed and an assessment made as to their suitability to key species.

- 2.2.2. The field survey also included targeted surveying of niches and features not normally identified or highlighted through Phase 1 habitat survey. High fidelity niches such as seepages and exposed riverine sediments are key features to a range of high fidelity, SBL and Cairngorms LBAP species. These features were identified through the Phase 1 habitat survey mapping and Ordnance Survey (OS) maps (1:25,000).
- 2.2.3. Additional field surveys were undertaken on the 20th and 21st July 2016 to identify valuable flower foraging habitat for a range of solitary and social bees, including *Bombus monticola*, *Bombus muscorum*, *Andrena* species and *Osmia* species, and suitable verge habitat for wood ants *Formica* spp. This survey reviewed roadside verges to identify locations with flowering plants (including vetches, eyebrights, heathers and clovers) and woodland fringe habitats suitable for wood ants.
- 2.2.4. In addition, incidental invertebrate records were recorded during other ecological surveys undertaken in 2015 and 2016.

Nature Conservation Evaluation

- 2.2.5. The general approach to defining the importance of invertebrates or habitats for invertebrates follows that of CIEEM^{iv}. The approach is also in line with advice given in DMRB Interim Advice Note 130/10^v. The level of importance for nature conservation of invertebrates and suitable invertebrate habitat within the Study Area is based on the criteria set out in Table A2.1. The rarity, ability to resist or recover from environmental change, and uniqueness of an ecological feature, function/role within an ecosystem, and level of legal protection or designation afforded to a given ecological feature are all factors taken into account in determining its importance.

Table A2.1: Importance Criteria

Importance	Criteria
International	<p>Ecosystems and Habitats Ecosystems or habitats essential for the maintenance of:</p> <ul style="list-style-type: none"> • internationally designated areas or undesignated areas that meet the criteria for designation; and/or • viable populations of species of international conservation concern. <p>Species Species whose presence contributes to:</p> <ul style="list-style-type: none"> • the maintenance of qualifying habitats, communities and assemblages that occur within internationally designated sites or within undesignated areas that meet the criteria for such designation.





Importance	Criteria
National	<p>Ecosystems and Habitats Ecosystems or habitats essential for the maintenance of:</p> <ul style="list-style-type: none"> • qualifying communities and assemblages that occur within nationally designated sites or within undesignated areas that meet the criteria for such designation; and/or • viable populations of species of national conservation concern. <p>Species Species whose presence contributes to:</p> <ul style="list-style-type: none"> • the maintenance of qualifying habitats, communities and assemblages that occur within nationally designated sites or within undesignated areas that meet the criteria for such designation; or • the maintenance and restoration of biodiversity and ecosystems at a national level, as defined in the Scottish Biodiversity Strategy (SBS) (Scottish Government, 2013, 2015).
Regional	<p>Ecosystems and Habitats Ecosystems or habitats essential for the maintenance of:</p> <ul style="list-style-type: none"> • communities and assemblages that occur within regionally important sites or localities listed as being of conservation importance in the Highland Biodiversity Action Plan (BAP) or Cairngorms Nature Action Plan (CNAP) (including Local Nature Reserves) or within undesignated areas that meet the criteria for such designation ; and/or • viable populations of species of regional conservation concern. <p>Species Species whose presence contributes to:</p> <ul style="list-style-type: none"> • the maintenance and restoration of biodiversity and ecosystems at a regional level, as defined in the Highland BAP or CNAP.
Authority Area	<p>Ecosystems and Habitats Ecosystems or habitats essential for the maintenance of:</p> <ul style="list-style-type: none"> • populations of species of conservation concern within the authority area. <p>Species Species whose presence contributes to:</p> <ul style="list-style-type: none"> • the maintenance and restoration of biodiversity and ecosystems within a relevant area such as Inverness and Nairn Local BAP, or Aviemore in the CNAP.
Local	<p>Ecosystems and Habitats Ecosystems or habitats essential for the maintenance of:</p> <ul style="list-style-type: none"> • populations of species of conservation concern within the local area (for example a Local Nature Reserve (LNR)). <p>Species Species whose presence contributes to:</p> <ul style="list-style-type: none"> • the maintenance and restoration of biodiversity and ecosystems at a local level.





Importance	Criteria
Less than Local	Ecosystems and Habitats <ul style="list-style-type: none">• Ecosystems or habitats that do not meet the above criteria, i.e., supporting at least populations of species of conservation concern within the local area Species <ul style="list-style-type: none">• Features that are considered to be absent or do not meet any of the above criteria.

2.3. Limitations

- 2.3.1. Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. Field surveys to search for key habitats or features of potential importance to the species on the CNPA priority species list were undertaken in September, which is a suitable time to assess the suitability of habitat for invertebrates.
- 2.3.2. Detailed surveys for invertebrates have not been undertaken. The impact assessment is based on the data provided by CNPA and from the walkover surveys described above. This approach has been agreed with the CNPA on the basis that mitigation will be provided as follows:
- Red species – assumed to be present in locations identified by CNPA and appropriate mitigation provided.
 - Amber species – acknowledgement that suitable habitat is present to support species in locations identified by CNPA and habitat requirements will be taken into consideration in mitigation measures.



3. Results

3.1. Desk Study

3.1.1. The data search identified four invertebrate records within the Study Area as detailed in Table A3.1 and shown on Figure 12.7a-k.

Table A3.1: Desk Study Invertebrate Records

Grid Reference	Species	Date of Record
NH781335	Hairy Wood Ant	05/11/2011
NH77363378	Hairy Wood Ant	21/04/2010
NH776337	Hairy Wood Ant	17/04/2011
NH781335	Hairy Wood Ant	17/04/2011

3.1.2. The combined SBL and Cairngorms LBAP priority list identified 299 species of terrestrial invertebrate to assess in more detail.

3.1.3. The CNPA provided records of three areas of potential invertebrate interest within the Proposed Scheme footprint, for amber priority species. These records are shown on Figure 12.7 and detailed in Table A3.2. A further three records are located within 50m of the Proposed Scheme, as shown on Figure 12.7e and h; all of these are classed as amber.

Table A3.2: CNPA Priority Records located within the Scheme Footprint

CNPA Record	Priority	Grid Reference	Priority	Interest
357		NH7938530362	Amber	Conifer woodland. Potential for rare saproxylic hoverflies, spiders.
378		NH7750633711	Amber	Conifer woodland. Potential for rare saproxylic hoverflies, spiders.
382		NH7684533957	Amber	Conifer woodland. Potential for rare saproxylic hoverflies, spiders.

3.1.4. Habitats with high representation of species affiliations and that are present within the Proposed Scheme are:

- acid grassland on road verges
- wet heath
- exposed riverine sediments
- flowery verges

3.1.5. These possess the greatest potential for a range of species, especially butterflies and aculeate hymenoptera (bees, wasps and ants) and a range of SBL and Cairngorms LBAP species as well as a generally rich resource for invertebrates.



3.1.6. No records were received for narrow headed ants within the Study Area. Habitat preferences for this species are woodland edge sites and open areas within woodlands.

3.2. Field Survey

3.2.1. Table A3.3 details the invertebrate points of interest identified during the field survey, as shown on Figure 12.7a-k.

3.2.2. Suitable habitat for solitary and social bees (including including *Bombus monticola*, *Bombus muscorum*, *Andrena* species and *Osmia* species) is characterised by flowery verge habitat. Suitable hairy wood ant *Formica lugubris* and Scottish wood ant *Formica aquilonia* habitat is characterised by wood-fringed sunny banks. In total, there were 22 sections of road verge that were suitable for bees and twelve sections that were suitable for wood ants, as shown on Figure 12.7a-k and details of which are provided in Annex B.

Table A3.3: Invertebrate Points of Interest

Grid Reference and Target Note (TN)	Direction	Habitat	Species of Interest	Invertebrate Interest
NH78813 32162 TN1 Figure 12.7f	Southbound	Exposed riverine sediments	<i>Spiriverpa lunulata</i> (a stiletto fly), <i>Anoplius concinnus</i> (a spider hunting wasp)	Potential for red and amber listed species
NH75715 34565 TN2 Figure 12.7i	Northbound	Wet heath	Fritillaries, bumblebees, large heath <i>Coenonympha tullia</i> , small mountain ringlet <i>Erebia epiphron</i> , <i>Cryptocephalus decemmaculatus</i> (ten-spot pot beetle)	Potential for amber listed species
NH76003 34489 TN3 Figure 12.7i	Northbound + Southbound	Wet heath	Fritillaries, bumblebees, large heath <i>C. tullia</i> , small mountain ringlet <i>E. epiphron</i> , <i>C. decemmaculatus</i> (ten-spot pot beetle)	Potential for amber listed species
NH75810 34566 TN4 Figure 12.7i	Northbound + Southbound	Wet heath with bog myrtle	Argent and sable, <i>C. decemmaculatus</i> (ten-spot pot beetle)	Potential for SBL species
NH74235 34725 TN5 Figure 12.7j	Northbound	Wet heath	Small pearl bordered fritillary <i>Boloria selene</i>	Potential for SBL species
NH74220 34751 TN6 Figure 12.7j	Southbound	Wet heath	Small pearl bordered fritillary <i>B. selene</i>	Potential for SBL species
All route	Northbound + Southbound	All sunny and grassy verges with common bird's-foot trefoil and heathers etc	Potentially suitable for <i>O. uncinata</i> and SBL bumblebees <i>B. muscorum</i> , <i>B. monticola</i>	Potential for amber listed species





Grid Reference and Target Note (TN)	Direction	Habitat	Species of Interest	Invertebrate Interest
All route	Northbound + Southbound	Sunny wood fringe banks	Hairy wood ant <i>F. lugubris</i> and Scottish wood ant <i>F. aquilonia</i>	Potential for red and amber listed species

3.2.3. During the 2015 and 2016 ecology surveys, incidental records of wood ant nests (exact species were not confirmed) were recorded at three locations (NH 77585, 33780, NH 76629, 34118, NH 76079, 34429) as shown on Figure 12.7h-i.

4. Valuation

4.1.1. Table A4.1 sets out the valuation of the habitats identified as having interest for invertebrates. Given the variation in invertebrate habitat preferences, the habitats have been assessed individually rather than providing a Scheme wide valuation level.

Table A4.1: Invertebrate Valuation

Habitat type / reference	Valuation	Rational for valuation
Conifer Woodland CNPA Record 357, 378, 382	Authority	Based on the presence of conifer woodland these areas where identified by the CNPA has having the potential for suitable habitat for amber priority saproxylic hoverfly species, such as the aspen hoverfly <i>Hammerschmidtia ferruginea</i> and pine hoverfly <i>Blera fallax</i> (also listed as a 'key species for focussed action' in the Cairngorms Nature Action Plan ^{vi}). This habitat may also have suitability to support other amber priority species, such as a pine woodland spider <i>Clubiona subsultans</i> . The field survey did not note these areas as key points of invertebrate interest. However, taking the precautionary principle and the potential for the above species to be present, these locations have been assessed to be of Authority level importance.
Exposed Riverine Habitat TN1	Authority	This habitat has been identified as having the potential to support both amber and red priority invertebrate species. Suitable habitat has been identified for <i>Spiriverpa lunulata</i> and <i>Anoplius concinnus</i> , both SBL species. Taking the precautionary principle as these species may be present, these locations have been assessed to be of Authority level importance.



Habitat type / reference	Valuation	Rational for valuation
Wet heath TN2 - TN6	Authority	The field survey recorded a number of invertebrate species of interest within these areas of wet heath, including SBL species <i>C. decemmaculatus</i> , <i>B. selene</i> , <i>C. tullia</i> and <i>E. epiphron</i> . This habitat also has suitability to support a number of amber priority and SBL invertebrate species and as such is assessed to be of Authority level importance.
Flowery verges	Local	Verges containing flowering plant species such as common birds-foot trefoil and heathers are suitable for pollinating insects such as the Mason bee <i>Osmia inermis</i> (an amber priority species) and two species of bumble bee listed on the SBL (<i>B. muscorum</i> , <i>B. monticola</i>). Given the suitability of habitat within the wider area these verges are assessed to be of Local importance.
Sunny wood fridge banks	Local	These areas are suitable for amber priority wood ant species <i>F. lugubris</i> and <i>F. aquilonia</i> , both of which are also listed on the SBL. No wood ant nests were identified during field survey. However, a three <i>F. lugubris</i> records were recorded during other ecological surveys. Given the low number of nests recorded and the suitability of habitat within the wider area these banks are assessed to be of Local importance

5. Conclusions

- 5.1.1. There are twenty two sections of road verge that are suitable for bees and twelve sections that are suitable for wood ants, as shown on Figure 12.7a-k and details of which are provided in Annex B. These are assessed to be of Local value for these species.
- 5.1.2. There are three woodland locations that provide suitable habitat for amber priority listed invertebrates and are assessed to be of Authority value. In addition, five locations with wet heath habitat and one local with exposed riverine sediments have been identified as being suitable for SBL and CNPA priority species and are assessed to be of Authority value. All flowery verges and sunny wood fringe banks are assessed to be of Local value.

6. References

ⁱ Scottish Biodiversity List (2013) Available via: <http://www.gov.scot/Topics/Environment/Wildlife-Habitats/16118/Biodiversitylist/SBL> (Accessed 22/06/2016).

ⁱⁱ Cosgrove, P. Eds (2002) Cairngorms Local Biodiversity Action Plan. Available via: <http://www.highlandbiodiversity.com/userfiles/file/acion-plans/badenoch-whole.pdf> (Accessed 22/06/2016).

ⁱⁱⁱ CH2MHill (2015) Preliminary Ecological Appraisal. North Scheme – Dalraddy to Moy.





-
- ^{iv} CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition. Chartered Institute of Ecology and Environmental Management.
- ^v DMRB Interim Advice Note 130/10. (2010) 'Ecology and Nature Conservation: Criteria for Impact Assessment' The Highways Agency et al.
- ^{vi} Cairngorms National Park Authority (2013) Cairngorms Nature Action Plan 2013-2018



Annex A.

A.1. Cairngorm LBAP Priority Invertebrate Species

Species common name	Species Latin name	Cairngorms importance - UK or national stronghold	UK BAP priority	Scottish Biodiversity List
Pine hoverfly	<i>Blera fallax</i>	Very high	Yes	Yes
Northern damselfly	<i>Coenagrion hastulatum</i>	Very high	No	Yes
Narrow-headed wood ant	<i>Formica exsecta</i>	Very high	Yes	Yes
Aspen hoverfly	<i>Hammerschmidtia ferruginea</i>	Very high	Yes	Yes
Freshwater pearl mussel	<i>Margaritifera margaritifera</i>	Very high	Yes	Yes
Mason bee	<i>Osmia inermis</i>	High	Yes	Yes
Ruby tailed wasp	<i>Chrysura hisuta</i>	High	Yes	Yes
Scottish wood ant	<i>Formica aquilonia</i>	High	Yes	Yes
Hairy wood ant	<i>Formica lugubris</i>	High	Yes	Yes
A pine woodland spider	<i>Clubiona subsultans</i>	High	Yes	No
Picture winged fly	<i>Dorycera graminum</i>	Unknown	Yes	No
A reed beetle	<i>Donacia aquatica</i>	Moderate	Yes	No
A whorl snail	<i>Vertigo geyeri</i>	Unknown	Yes	No
A crane fly	<i>Lipsothrix ecucullata</i>	Unknown	Yes	No
A leaf beetle	<i>Cryptocephalus decemmacuatus</i>	Unknown	Yes	No

Annex B.

B.1. Verges suitable for bees

Verge section	X Ref.	Y Ref.	Description
1	28013 to 27947	82964 83028	Open grassy verge, between 2 and 4m wide with flowering plants. The verge is maintained with an approximately 1 m wide strimmed section, dominated by common clover, bird's-foot trefoil and occasional thrift. Species within the unmown section include heathers, red clover, thistles, selfheal, eyebright and vetch spp. Dense woodland is set back from this section of verge with patches of grassland.
2	27999 to 27952	82969 83017	Open grassy verge. Between 3 and 5m wide with flowering plants. Tall grassland set back from this section of verge.
3	27950 to 27939	83019 83091	Open grassy verge, sloping in some areas. Between 3 and 5m wide with flowering plants (larger area near layby and cycle path). Dense woodland set back from the verge with grassy patches.
4	27947 to 27941	83028 83165	Open grassy verge. Between 2 and 3m wide with flowering plants. Adjacent habitats include farm access tracks, quarry land, conifer woodland and recently felled patches of conifer woodland with heather / grassland mosaic.
5	27939 to 27888	83091 83205	Open grassy verge. Approximately 10m wide with flowering plants (including common spotted orchid). This section includes the cycle path. Conifer woodland is set back from the cycle path.
6	27888 to 27875	83205 83216	Small section of open grass verge at layby. Approximately 2m wide with low number of flowering plants. Layby scrub planting adjacent.
7	27940 to 27897	83167 83203	Small section of grassy verge below conifer woodland. Flowering plants recorded below fairly open woodland.
8	27896 to 27835	83204 83264	Open grassy verge. Between 3 and 5m wide with flowering plants. Tall grassland set back from this section of verge.
9	27873 to 27838	83218 83255	Open grassy verge. Between 3 and 5m wide with flowering plants.
10	27838 to 27794	83255 83319	Open grassy verge. Approximately 2m wide with flowering plants. Dense conifer woodland is set back from the verge.
11	27834 to 27766	83266 83346	Open grassy verge. Approximately 2m wide with flowering plants. Dense conifer woodland is set back from the verge.
12	27794 to 27762	83320 83348	Open grassy verge. Between 3 and 10m wide with flowering plants. Large section of the verge is sloping and unmown with heather. Heathland is set back from the verge.

Verge section	X Ref.	Y Ref.	Description
13	27762 to 27684	83348 83402	Open grassy verge. Approximately 2m wide with flowering plants. Dense conifer woodland is set back from the verge.
14	27766 to 27683	83346 83404	Open grassy verge. Between 1 and 3m wide with flowering plants. Conifer woodland is set back from the verge.
15	27684 to 27644	83402 83424	Open grassy verge. Between 2 and 5m wide with flowering plants. Fairly open conifer woodland is set back from the verge.
16	27681 to 27596	83405 83450	Open grassy verge. Approximately 2m wide with flowering plants. Dense conifer woodland is set back from the verge.
17	27644 to 27562	83424 83459	Open grassy verge. Between 1 and 2m wide with flowering plants. Fairly open conifer woodland is set back from the verge.
18	27596 to 27495	83450 83475	Open grassy verge. Between 3 and 5m wide with flowering plants. Scattered scrub set back from this section of verge with tall grassland located adjacent.
19	27562 to 27509	83459 83470	Open grassy verge. Between 1 and 2m wide with flowering plants (approximately 5m wide at layby). Fairly open conifer woodland is set back from the verge.
20	27509 to 27314	83470 83478	Open grassy verge. Between 2 and 3m wide with flowering plants. Fairly open conifer woodland is set back from the verge. Heather and flowering herbs noted below woodland.
21	27495 to 27339	83475 83475	Open grassy verge. Between 2 and 4m wide with flowering plants. Fairly open conifer woodland is set back from the verge. Some patches of sloping ground with scattered conifer trees.
22	27339 to 27314	83475 83481	Open grassy verge. Between 2 and 3m wide with low number of flowering plants recorded within the mown area. However, heather and a number of flowering herbs noted on rock embankment above road verge.

B.2. Verge habitat suitable for wood ants

Verge section	X Ref.	Y Ref.	Description
1	27949 to 27935	83020 83056	Edge habitat comprising conifer woodland and grass verge. Woodland open in areas. An access path, leading through the woodland, to the bus stop also creates suitable edge habitat.
2	27939 to 27949	83079 83115	Edge habitat comprising conifer woodland and grass verge. Woodland edge habitat on sloping ground.



Verge section	X Ref.	Y Ref.	Description
3	27940 to 27911	83167 83196	Conifer woodland with limited area of grassy verge habitat. Woodland edge habitat on sloping ground adjacent to quarry.
4	27931 to 27896	83169 83199	Conifer woodland adjacent to cycle path / verge on sloping ground, over 10m from the carriageway.
5	27835 to 27822	83256 83288	Edge habitat comprising conifer woodland and grass verge.
6	27761 to 27758	83347 83351	Small patch of woodland adjacent to grassy verge.
7	27721 to 27683	83387 83404	Edge habitat comprising conifer woodland and grass verge. Gently sloping open canopy with heather.
8	27706 to 27682	83390 83401	Edge habitat comprising conifer woodland and grass verge. Gently sloping open canopy with heather.
9	27680 to 27645	83403 83424	Edge habitat comprising conifer woodland and grass verge. Gently sloping open canopy leading into grass verge.
10	27656 to 27603	83421 83447	Edge habitat comprising conifer woodland and grass verge. Gently sloping open canopy with heather.
11	27637 to 27610	83427 83441	Edge habitat comprising patchy conifer woodland and grass verge.
12	27562 to 27495	83459 83471	Edge habitat comprising conifer woodland and grass verge. Conifer woodland located on/or adjacent to verge.
13	27493 To 27314	83471 83478	Edge habitat comprising conifer woodland and grass verge. Varied habitat with dense patches and more open areas of woodland.
14	27404 To 27346	83472 83474	Grass and open conifer woodland fringe verge habitat. A small patch of grassland is located between woodland blocks - this habitat is unsuitable for wood ants.
15	27346 To 27314	83474 83481	Rock embankment with scattered conifer trees. Habitat fairly open with rock, grass and flowering plants such as heather.